DRAFT

ENVIRONMENTAL IMPACT REPORT

FOR THE

TRA VIGNE DEVELOPMENT PROJECT

(SCH: 2016022061)

VOLUME III

P16-0025

APRIL 2018

Prepared for:

City of Stockton
Community Development Department, Planning & Engineering Division
345 N. El Dorado Street
Stockton, CA 95202
(209) 937-8444

Prepared by:

De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762
(916) 580-9818

De Novo Planning Group

A Land Use Planning, Design, and Environmental Firm

CITY OF STOCKTON
PUBLIC NOTICE OF AVAILABILITY OF THE DRAFT ENVIRONMENTAL IMPACT REPORT

LEAD AGENCY
Brian Millar, Project Planner
City of Stockton
345 N. El Dorado Street
Stockton, CA 95202
(209) 937-8266

EIR CONSULTANT
Steve McMurtry
De Novo Planning Group
1020 Suncast Lane, Suite 106
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PROJECT TITLE: Tra Vigne Development Project

City of Stockton Community Development Department as a Lead Agency has completed, independently reviewed, and analyzed the following draft Environmental Impact Report for Tra Vigne Development Project (P16-0025).

PROJECT LOCATION:

The proposed Project site is located within the northeastern portion of the City of Stockton Metropolitan Area, within the unincorporated area of San Joaquin County. The Project site is immediately southeast of the intersection of West Lane and Eight Mile Road. The Project site is bounded on the north and west by Eight Mile Road and West Lane, which are existing regional arterials, on the east by the Union Pacific Railroad, and on the south by Bear Creek and the associated Bear Creek Levee. The Project site consists largely of active agricultural fields. The Project site includes 15.57-acres of industrial uses in the north-central portion of the Project site (Assessor's Parcel Numbers 120-02-13, and 120-02-14); uses within these industrial lots include Pacific Bell and Bragg Investment Company.

PROJECT DESCRIPTION:

The Project includes development of up to 340 HDR units, up to 1,163 LDR units, up to 101,500 square feet of commercial, an existing 15.57-acre industrial area, establishment of a 14.7-acres K-8 school site, and associated park and utility improvements. The Project is requesting annexation and pre-zoning of 341.17-acres of land into the Stockton city limits, and the subsequent development of 318.82-acres of land. The General Plan Amendment would include maintaining approximately 260.69-acres of LDR uses; maintaining approximately 15.57-acres of I uses; changing approximately 1.5-acres of LDR to C uses; changing approximately 1.03-acres of LDR to HDR uses; and changing 20.36-acres of LDR to OSA. Changes to the Circulation Element would include the removal of a bridge crossing over Bear Creek. Associated Tentative Maps would provide for subdivision of the project site. The project will also include a Development Agreement.

SIGNIFICANT ENVIRONMENTAL EFFECTS:

The Draft EIR has identified the following environmental issue areas as having significant and unavoidable environmental impacts from implementation of the Project: Aesthetics, Agricultural Resources, Air Quality, Greenhouse Gas Emissions and Climate Change, Public Services and Recreation, Transportation and Circulation, and Cumulative Impacts. All other environmental issues were determined to have no impact, less than significant impacts, or less than significant impacts with mitigation measures incorporated into the Project.

PUBLIC REVIEW PERIOD:

A 45-day public review period for the Draft EIR will commence on April 12, 2018 and end by 4:30 PM on May 29, 2018. Any written comments on the Draft EIR must be received at the address below or E-mail within the public review period. Copies of the Draft EIR are available for review at the City of Stockton, 345 N. El Dorado Street, Stockton, CA 95202. A copy of the Draft EIR may be reviewed and/or obtained at the following address or at **http://www.stocktonca.gov/environmental**.

Attn: Brian Millar, Project Planner, E-mail: brian@landlogistics.com
Community Development Department, Planning and Engineering Division
345 North El Dorado Street
Stockton, CA 95202

If we do not receive a response from your agency or organization, we will presume that your agency or organization has no response to make.

DAVID KWONG, DIRECTOR
COMMUNITY DEVELOPMENT DEPARTMENT

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FOR THE

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Appendix A

Notice of Preparation and Comments

NOTICE OF PREPARATION

FOR THE

TRA VIGNE DEVELOPMENT PROJECT

JULY 2017

Prepared for:

Community Development Department
City of Stockton
345 N. El Dorado Street
Stockton, CA 95202

Prepared by:

De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762
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NOTICE OF PREPARATION

FOR THE

TRA VIGNE DEVELOPMENT PROJECT

JULY 2017

Prepared for:

Community Development Department
City of Stockton
345 N. El Dorado Street
Stockton, CA 95202

Prepared by:

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NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT AND SCOPING MEETING

TO: State Clearinghouse
State Responsible Agencies
State Trustee Agencies
Other Public Agencies
Interested Organizations

FROM: Brian Millar, Project Manager
City of Stockton
345 N. El Dorado Street
Stockton, CA 95202
(530) 902-9218
brian@landlogistics.com

DATE: July 7, 2017

SUBJECT: Notice of Preparation – Tra Vigne Development Project

EIR CONSULTANT:

Steve McMurtry, Principal Planner
De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762
(916) 580-9818

Notice of Preparation: This is to notify public agencies and the general public that the City of Stockton, as the Lead Agency, will prepare an EIR for the Tra Vigne Development Project. The City of Stockton is interested in the input and/or comments of public agencies and the general public as to the scope and content of the environmental information that is germane to the agencies' statutory responsibilities in connection with the proposed project, and public input. Responsible/trustee agencies will need to use the EIR prepared by the City of Stockton when considering applicable permits, or other approvals for the proposed project.

We need to know the views of your agency or organization as to the scope and content of the environmental information germane to your agency's statutory responsibilities or of interest to your organization in connection with the proposed project. Specifically, we are requesting the following:

1. If you are a public agency, state whether your agency will be a responsible or trustee agency for the proposed project and list the permits or approvals from your agency that will be required for the project and its future actions;
2. Identify significant environmental effects and mitigation measures that you believe need to be explored in the EIR with supporting discussion of why you believe these effects may be significant;
3. Describe special studies and other information that you believe are necessary for the City of Stockton to analyze the significant environmental effects, alternatives, and mitigation measures you have identified;

4. For public agencies that provide infrastructure and public services, identify any facilities that must be provided (both on- and off-site) to provide services to the proposed project;
5. Indicate whether a member(s) from your agency would like to attend a scoping workshop/meeting for public agencies to discuss the scope and content of the EIR's environmental information;
6. Provide the name, title, and telephone number of the contact person from your agency or organization that we can contact regarding your comments.

Comment Period: Due to the time limits mandated by State law, your response must be sent and received by the City of Stockton by the following deadlines:

- For responsible agencies, not later than 30 days after you receive this notice.
- For all other agencies and organizations, not later than 30 days following the publication of this Notice of Preparation. The 30-day review period ends on August 7, 2017.

If we do not receive a response from your agency or organization, we will presume that your agency or organization has no response to make.

Scoping Meeting: A responsible agency, trustee agency, or other public agency may request a meeting with the City of Stockton or its representatives in accordance with Section 15082(c) of the CEQA Guidelines. A public scoping meeting will be held during the public review period as follows:

July 26, 2017 at 6:00 PM in the Large Conference Room at the City's Permit Center
(located at 345 N. E Dorado Street)

Please send your response to Brian Millar, Project Manager at the City of Stockton, 345 N. El Dorado Street, Stockton, CA 95202. If you have any questions, please contact Brian Millar at (530) 902-9218 or via email at: brian@landlogistics.com.

PROJECT LOCATION AND SETTING

PROJECT LOCATION

The proposed Project site is located in the northeastern portion of the City of Stockton Metropolitan Area, within the unincorporated area of San Joaquin County. The Project area is adjacent to the City of Stockton city limits to the east, within the Stockton Sphere of Influence (SOI) (as defined in the 2035 Stockton General Plan), and within the City of Stockton Urban Services Boundary.

The Project site is immediately southeast of the intersection of West Lane and Eight Mile Road. The Project site is bounded on the north and west by Eight Mile Road and West Lane, which are existing regional arterials, on the east by the Union Pacific Railroad (UPRR), and on the south by Bear Creek and the associated Bear Creek Levee. An irrigation catch pond runs along the north, side of the Project site. The Project site is located within a portion of Section 2 of Township 2

North, Range 6 East MDBM. The site is shown on the Lodi South, California, 7.5-minute series quadrangle map. Figures 1 and 2 show the Project's regional location and vicinity.

The Project site is made up of several assessor parcels (APN's), which are listed in Table 1, and are displayed on Figure 3.

SITE TOPOGRAPHY

The Project site is relatively flat and ranges in elevation from approximately 25 to 35 feet above sea level. Figure 4 shows the USGS Topographic Map of the Project site.

EXISTING SITE USES

The Project site consists largely of active agricultural fields (roughly 253 acres in production). The Project site includes 15.57 acres of industrial uses in the north-central portion of the Project site (APN's 120-02-13, and 120-02-14); uses within these industrial lots include Pacific Bell, and Bragg Investment Company. Figure 5 shows aerial imagery of the current existing site uses within the Project site.

TABLE 1: PARCELS WITHIN THE PROJECT AREA

APN	*LEGAL OWNERS*	*ACREAGE*
	Tra Vigne West	
120-02-01	MCD South Parcel, LLC	0.75
120-02-02	MCD North Parcel, LLC	80.50
120-02-03	Western States Land, LLC	38.34
120-02-17	MCD South Parcel, LLC	25.53
120-02-18	MCD South Parcel, LLC	5.68
120-02-19	MCD South Parcel, LLC	12.66
120-02-20	MCD South Parcel, LLC	3.52
120-02-22	MCD South Parcel, LLC	20.21
120-02-23	MCD South Parcel, LLC	12.97
	Tra Vigne East	
120-02-13	Pacific Bell	5.29
120-02-14	Bragg Investment Company	10.28
120-02-15	Woodside Teresi LLC	98.02
122-01-02	UPRR	2.84
122-01-04	UPRR	2.23
	Total Project Area Parcels	
Tra Vigne West	--	200.16
Tra Vigne East	--	118.66
	Subtotal – Development Area	***318.82***
	Total Annexation Area	
Right-of-Way	Existing County Public ROW	22.35
	Total – Annexation Area	***341.17***

NOTE: THE 318.82-ACRE DEVELOPMENT AREA REFLECTS THE TOTAL ACREAGE OF THE LEGAL PARCELS WITHIN THE DEVELOPMENT AREA. THE TOTAL DEVELOPMENT AREA ACCORDING TO THE ASSESSOR PARCELS IS APPROXIMATELY 321.57 ACRES, FOR A TOTAL DISCREPANCY OF +2.75 ACRES. THIS DISCREPANCY APPLIES TO APNS 120-02-01 (+0.17 ACRE DISCREPANCY) AND 120-02-02 (+2.58 ACRE DISCREPANCY).

EXISTING SURROUNDING USES

Uses immediately adjacent to the Project site include a truck and trailer repair service establishment to the northwest across Eight Mile Road. Other existing uses north of the Project site include large-lot single family residences and agricultural land. Immediately to the east of the Project site is industrial land uses, including several large warehouses and a large storage lot. Farmland lies immediately west and south of the Project site. Other nearby uses include Ronald McNair High School located immediately southwest of the Project site.

GENERAL PLAN LAND USE DESIGNATIONS

The Project site is currently located within San Joaquin County. The Project site is outside the Stockton city limits, but within the City's SOI.

EXISTING CITY OF STOCKTON GENERAL PLAN LAND USE DESIGNATIONS

The City of Stockton General Plan (2035) designates the Project site as Low Density Residential (LDR maximum 8.7 dwelling units per acre [du/ac]), High Density Residential (HDR maximum 29.0 du/ac), Commercial (C Maximum FAR: 0.3, maximum 29 du/ac), and Industrial (I maximum FAR 0.6).

Figure 6 depicts the 2035 Stockton General Plan land use designations for the Project site and the surrounding areas. The General Plan contains the following standards to guide development for these land uses:

Low Density Residential (LDR): Allowed uses: single-family residential units, duplexes, triplexes, semi-detached patio-homes, townhomes, public and quasi-public uses, second units, and other similar and compatible uses.

- Maximum dwelling units per gross acre: 6.1 du/ac.
- Maximum dwelling units per net acre: 8.7 du/ac.

High Density Residential (HDR): Allowed uses: Multifamily residential units, apartments, dormitories, group homes, guest homes, public and quasi-public uses, and other similar and compatible uses.

- Maximum dwelling units per gross acre: 23.2 du/ac outside the downtown area; 69.6 du/ac inside downtown.
- Maximum dwelling units per net acre: 29 du/ac outside the downtown area; 87 du/ac inside downtown.

Commercial (C): Allowed uses: a wide variety of retail, service, and commercial recreational uses, business, medical and professional offices, residential uses, public and quasi-public uses and other similar and compatible uses. Community or regional commercial centers as well as freestanding commercial establishments are permitted.

- Maximum floor area ratio (FAR): 0.3 outside the Downtown area. 5.0 inside the Downtown area.

- Maximum dwelling units per gross acre: 23.2 du/ac outside the downtown area; 69.6 du/ac inside downtown.
- Maximum dwelling units per net acre: 29 du/ac outside the downtown area; 87 du/ac inside downtown.

Industrial (I): Allowed uses: a wide variety of industrial uses including uses with nuisance or hazardous characteristics, warehousing, construction contractors, light manufacturing, offices, retail sales, service businesses, public and quasi-public uses, and other similar and compatible uses. Residential uses are prohibited.

- Maximum FAR: 0.6

SAN JOAQUIN COUNTY GENERAL PLAN LAND USE DESIGNATIONS

The San Joaquin County General Plan currently designates the project site for Low Density Residential (R/L), Residential/High Density (R/H), Community Commercial (C/C), Limited Industrial (I/L), and General Industrial (I/G) uses. Below is a general description of County Designated land uses within the project site. The County General Plan land use designations for the project site and surrounding area are shown on Figure 7a.

Low Density Residential (R/L): This designation is appropriate for single family neighborhoods. The typical housing type is detached, single family dwelling units. The density is 2 to 6 primary dwelling units per gross acre.

Residential/High Density (R/H): This designation provides for apartments, condominiums, and other multi-family housing located near central business districts, major commercial areas, and major transportation routes. The density ranges from 15 to 40 units per gross acre depending on the zoning (R/H zoning allows 20 du/ac).

Community Commercial (C/C): This designation provides for a full range of retail and service establishments, allowing comparison shopping and serving Urban Communities or regional markets. Typical uses include a full range of retail sales, public buildings, eating and drinking establishments, personal services, and limited administrative and professional offices. Community Commercial areas are permitted only in central business districts or extensive commercial areas in Urban Communities; other development locational criteria also apply.

Limited Industrial (I/L): This designation provides for a range of industrial activities, including production, assembly, warehousing and distribution. Typical uses are light impact manufacturing, warehousing, wholesaling, corporation yards, and distribution. Development and locational criteria apply.

General Industrial (I/G): This designation provides for a full range of industrial activities whose location and operation tend to have moderate to high nuisance characteristics and therefore require segregation from other land uses. Typical uses include manufacturing, distribution, storage, and wholesaling. Development and locational criteria apply.

SAN JOAQUIN COUNTY ZONING DESIGNATIONS

The San Joaquin County Zoning Ordinance currently designates the project site for General Industrial (I-G), Limited Industrial (I-L), and Agriculture-Urban Reserve (AU-20) uses. Below is a general description of County zoning within the project site. The County General zoning designations for the project site and surrounding area are shown on Figure 7b.

I-G Zone (General Industrial): This zone provides for a wide range of manufacturing, distribution and storage uses which have moderate to high nuisance characteristics such as noise, heat, glare, odor, and vibration, and which require segregation from other land uses, and/or may require outside storage areas. New lots in this zone are a minimum of 10,000 square feet.

I-L Zone (Limited Industrial): This zone is intended to provide for light impact manufacturing, warehousing, wholesaling, construction contracting, and distribution uses. Activities within this zone have external physical effects that are generally restricted to the immediate area, are compatible with surrounding uses, are conducted entirely within enclosed buildings, and have outdoor storage areas that are screened. Business and professional offices may also be appropriate within this zone. New lots in this zone are a minimum of 10,000 square feet.

AU Zone (Agriculture-Urban Reserve): This zone is intended to retain in agriculture those areas planned for future urban development in order to facilitate compact, orderly growth and to assure the proper timing and economical provision of services and utilities. The minimum parcel size within the AU zone is 20 acres.

SURROUNDING GENERAL PLAN DESIGNATIONS

Lands to the north of the Project site (within the county) consist of General Agriculture (A/G). Adjoining lands to the east of the Project site (within the City of Stockton) are designated for Industrial uses. Areas surrounding the Project site to the south and west (within the SOI) have a City designation of LDR and Village H. The City of Stockton and San Joaquin County General Plan land use designations for the Project site and surrounding areas are shown on Figures 6 and 7a.

PROJECT DESCRIPTION

PROJECT OBJECTIVES

Consistent with CEQA Guidelines Section 15124(b), a clear statement of objectives and the underlying purpose of the proposed Project shall be discussed. The principal objective of the proposed Project is the approval and subsequent implementation of the Tra Vigne Development Project (the proposed Project). The quantifiable objectives of the proposed Project include annexation of 341.17 acres of land into the Stockton city limits, and the subsequent development of 318.82 acres of land, which will include: General Commercial, Low Density Residential housing, High Density Residential housing, and Open Space Parkland.

The Tra Vigne Development Project identifies the following objectives:

- Commercial: Establish a commercial site that strategically maximizes the high visual exposure of Eight Mile Road and West Lane to capitalize on commuter traffic, while also catering to the neighborhood needs of the residents within the development.
- Low Density Residential: Provide low density residential housing in accordance with the General Plan land use map, while ensuring that there is flexibility in the lot and housing size to accommodate real market demands throughout the housing cycle. Ensure that all housing is designed with architectural form that is visually attractive.
- High Density Residential: Provide high density residential housing in accordance with the General Plan land use map in order to provide a mix of housing types and accommodate real market demands throughout the housing cycle. Ensure that all housing is designed with architectural form that is visually attractive.
- School: Provide a site that could accommodate a K-8 school in the event that the School District desires to build a school within the Project site. Alternatively, understanding that the School District may not desire to build a school within the Project site, ensure that there is a design alternative that would accommodate low density residential housing consistent with the form and design of the residential units planned throughout the balance of the Project site.
- Industrial: Retain the existing industrial uses within the Project site.
- Phasing: Establish a logical phasing plan designed to ensure that each phase of development would include necessary public improvements required to meet city standards.

PROJECT CHARACTERISTICS

The Project site has been designed with two sub-planning areas (Tra Vigne West and Tra Vigne East). Figure 8a provides a conceptual site plan that illustrates the development of Tra Vigne West and Tra Vigne East with 1,413 residential units (995 Tra Vigne West and 418 Tra Vigne East), a 15.57 existing Industrial area, a 10.5-acre commercial area, 15.07 acres of park space, and 20.36 acres of open space, mainly located along Bear Creek.

Tra Vigne East: The proposed Project includes a large lot tentative map that would subdivide the Tra Vigne East (APN 120-02-15) property consistent with the proposed land uses. Tra Vigne East only proposes a large lot tentative map at this time, and it is estimated that 418 units would be developed under the proposed scenario. Within this portion of the Project site, approximately 15.57 acres of existing industrial land would be retained.

Tra Vigne West: The proposed Project includes a large lot and small lot tentative map that would subdivide the Tra Vigne West property consistent with the proposed land uses. As shown on Figure 8a, the approximately 205-acre Tra Vigne West includes a detailed lot layout of 655 single family residential units. Residential lot sizes in the vesting tentative map range from 5,000 to 6,000 sf. Additionally, the Tra Vigne West site would include up to 340 high density residential units on 11.7 acres to the east of the proposed commercial area.

The proposed Project establishes a site for a 14.7-acre K-8 school to be developed by the Lodi Unified School District (LUSD). The development of a K-8 school at this site is the discretionary decision of the LUSD, and while the proposed Project has planned for a school at this location, it

will be determined by LUSD at a later date through their decision-making process. If the LUSD decides to not pursue building a school at this site then the site would be developed for residential in accordance with the General Plan land use designation. Construction of homes in this location would increase the number of LDR units by 90 units when compared to the proposed Project with the school site. Figure 8b illustrates this variation of the site plan without the school and with the increased residential units in its place. The total combined units would increase from 1,413 under the proposed Project to 1,503 units under this variation.

Figure 8c provides a proposed conceptual commercial site plan that illustrates a more detailed design for the 10.5-acre commercial area in the northwest portion of the Project site. As shown on Figure 8c, the commercial site is proposed to include a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room.

RESIDENTIAL CHARACTERISTICS TRA VIGNE WEST

As shown on Figures 8a and 8b, typical residential lots within the Project site range from 5,000 sf to 6,000 sf. Typical lots are generally uniform in nature (rectangle shaped). Corner lots, and lots adjacent to cul-de-sacs are generally not uniform in shape.

RESIDENTIAL DEVELOPMENT AREAS AND PHASING

Residential lots within the Project site are proposed to be developed in several phases. The proposed phasing indicates early development would be located along the southwest portion of the Project site along West Lane and would develop to the east, and then expand to the north.

PARKS AND OPEN SPACE

Approximately 9.5 acres of traditional park space is proposed for Tra Vigne West. Two park areas are proposed within Tra Vigne West including a centrally located 5.8-acre park and a 3.7-acre park in the southwest corner of the Tra Vigne West site. Additionally, a 6.24-acre detention basin area would be located in the southwestern portion of the Project site, adjacent to the 3.7-acre park.

Tra Vigne East includes plans for an additional 5.57 acres of traditional park space. One traditional park area, totaling 5.57 acres, would be located in the southern portion of Tra Vigne East, adjacent to the Bear Creek open space area. Additionally, a 3.75-acre detention basin area would be located in the southwestern portion of the Tra Vigne East within the Project site.

In addition to dedicated parkland within the Project site, 20.36 acres of non-traditional park/open space areas (13.75 acres at Tra Vigne West, and 6.61 acres at Tra Vigne East) are planned along the Bear Creek corridor (19.53 acres) and east of the existing industrial area (0.83 acres).

GENERAL PLAN AMENDMENTS

The proposed Project would require a City of Stockton General Plan Amendment to the Land Use Element to change land uses on the Project site, and to the Circulation Element to remove

an unbuilt bridge crossing over Bear Creek. Changes to the Land Use Element would include maintaining approximately 260.69 acres of LDR uses; maintaining approximately 15.57 acres of I uses; changing approximately 1.5 acres of LDR to C uses; changing approximately 1.03 acres of LDR to HDR uses; and changing 20.36 acres of LDR to Open Space/Agriculture (OSA) along Bear Creek. Changes to the Circulation Element would include the removal of a bridge crossing over Bear Creek associated with what is shown on the Future Roadways Map as an extension of Marlette Road from the west through the Project site and ultimately traveling eastward through the Bear Creek South project to Holman Road. Figure 6 illustrates the current Stockton General Plan land uses within the Project site, including the Marlette Road extension. Proposed General Plan land uses are shown on Figure 9.

ANNEXATION

The Project site is currently within San Joaquin County, and within the City of Stockton's SOI. The proposed Project would result in the annexation of the APN's described in Table 1 into the City of Stockton, as well as the roadway right-of-way for Eight Mile Road and West Lane. As shown in Table 1, the total annexation area would be 341.17 acres. The proposed Project includes property owner initiated annexation for all parcels except for APN 120-02-13 (Pacific Bell) and 120-02-14 (Bragg Investment Company). At the time the initial development applications to the City of Stockton (January 2016), Pacific Bell and Bragg Investment Company have not signed applications for annexation. As a result, there are three annexation options for these two parcels: 1) City initiated annexation, 2) property initiated annexation, or 3) these two parcels are excluded from the annexation. The EIR intends to analyze the potential annexation of the parcels into the City of Stockton unless it is determined that these parcels will not be annexed under this development proposal. Annexation of the Project site, including the Pacific Bell and Bragg Investment Company parcels, is consistent with the growth plans for the City of Stockton. In summary, the annexation area would include the Project development site, as well as portions of Eight Mile Road, West Lane, the UPRR rail line, and portions of Bear Creek.

PREZONING

The Project area is currently within the jurisdiction of San Joaquin County. Current county zoning for all parcels is I-G, I-L, and AU-20. The San Joaquin County Local Agency Formation Commission (LAFCo) will require the Project site to be pre-zoned by the City of Stockton in conjunction with the proposed annexation.

The City's pre-zoning will include the following zoning designations: Residential, Low Density (RL), Residential, High Density (RH), Industrial, Limited (IL), Commercial, General (CG), and Open Space (OS). The pre-zoning would go into effect upon annexation into the City of Stockton. The proposed pre-zoning for the Project site is shown on Figure 10.

UTILITIES AND PLANNED INFRASTRUCTURE IMPROVEMENTS

The construction of onsite and offsite infrastructure improvements would be required to accommodate development of the proposed Project, as described below. Figures 11 and 12 illustrate the location of offsite infrastructure improvements.

Potable Water System: Development areas proposed by the Project would be served by a new potable water distribution system. The water system would consist of 24- and 30-inch lines along West Lane and Eight Mile Road, respectively, and a looped network of 18-, 16-, and 12-inch lines located within the Project site. Local service lines, eight inches in diameter or larger would extend along proposed streets to provide water service to all proposed land uses at their street frontage. The proposed Project would include the dedication of a new City potable water well to be located at the southwest corner of the site, adjacent to Bear Creek and West Lane; the proposed Project intends to dedicate the site for future well development.

The proposed potable water system is shown on Figure 11. One off-site element of the overall proposed Project would involve potable water pipeline construction. The off-site water pipeline would include extension of a 30-inch water pipeline from the existing 12-inch water line along Eight Mile Road east 1,200 linear feet (LF) to Lower Sacramento Road and along Eight Mile Road to West Lane. This pipeline would ultimately connect to an existing water main at Marlette Road.

Wastewater System: Wastewater services would be provided by existing and planned City of Stockton collection and treatment system. Wastewater treatment would be provided at the City's existing Regional Wastewater Control Facility (RWCF) on Navy Drive in southwest Stockton. Wastewater collection would be provided by the City's existing Wastewater Collection System No. 10 (System 10). System 10 facilities were extended into lands in the Project vicinity in conjunction with the North Stockton Pipelines project. Within the Project site, the wastewater collection system would consist predominantly of 8-inch to 10-inch lines installed within proposed local streets. Collection System 10 discharges to the 14-Mile Slough Sanitary Sewer Pump Station, located in northwest Stockton. Due to rapid increase in System 10 flows, the City of Stockton Municipal Utilities Department completed an expansion of the pump station in 2008.

The proposed sewer system is shown on Figure 12. A second off-site element of the overall proposed Project would involve sewer construction through existing agricultural lands including approximately 3,028 LF of 24-inch sewer main in West Lane, and approximately 3,500 LF of 24-inch sewer main along the north side of Bear Creek to connect to the existing 48-inch trunk sewer main northwest of Ronald McNair High School. The development of the 24-inch sewer main along the north side of Bear Creek is required to comply with the City's Sewer Master Plan.

Storm Drainage: Development of the proposed Project would include construction of a new storm drainage system, including a drainage collection system, and two detention basins (one in the southwestern corner of Tra Vigne West, and one at the southwestern corner of Tra Vigne East). It is anticipated that a pump station that would discharge to Bear Creek would be installed at the Tra Vigne West detention basin.

The proposed storm drainage system is shown on Figure 13. Proposed storm drain lines would range from 12 inches to 60 inches in diameter. Collection lines would flow generally west and south to the proposed detention basins located in the southwest corners of Tra Vigne East and Tra Vigne West.

The City will require that a maintenance entity be established to provide for the operation, maintenance, and replacement costs of the detention pond system and other water quality features of the Project. The perimeter of the detention facilities will be landscaped to temper and screen views of the detention basins. Additionally, fencing would be constructed around the detention basin areas for safety and security purposes.

Areas of proposed development within the Project site will be required to meet the "volume reduction" requirements of the City's most recent stormwater National Pollutant Discharge Elimination System (NPDES) permit. Units of development would incorporate design features that would divert storm water to the groundwater system and/or detain runoff before it reaches the collection system. These design features would include measures also described as Low Impact Development (LID) and Volume Reduction Measures, such as grassy swales and porous pavement, among others. Compliance with the City's stormwater standards will require that storm drainage from new development be reduced below "existing runoff" rates.

Disposal of storm water collected to the Tra Vigne West detention basin would be handled by a new on-site storm water pump station and discharge outfall to Bear Creek. The pump station would operate when storm water quality and detention objectives have been met. The pump station is expected to consist of a concrete sump, trash screen and two or more pumps that would deliver storm water flow over or through the Bear Creek levee to an outfall facility. The pump station facility may include an emergency generator to supply electrical power to the pump station during power outages. Disposal of storm water collected to the Tra Vigne East detention basin would be conveyed to the Tra Vigne West detention basin via a 24- and 30-inch storm drain line.

The outfall structure would consist of two or more pipelines directed southeasterly to a point inside the Bear Creek levee. Outfall pipelines would likely terminate at a concrete headwall and energy dissipators set into the toe of the Bear Creek levee; storm drainage would be discharged to a concrete, gunite or riprap apron to flow into the Bear Creek channel. Outfall pipes would terminate in a "tideflex" or a comparable check valve system.

Regulated Public Utilities: Electrical, gas, phone, cable and related internet services would be extended to all portions of the Project site from existing facilities located along West Lane and Eight Mile Road, or other utility systems in the Project area. Proposed utilities would be located within public utility easements to be dedicated along street frontages. Utility improvements would be installed in conjunction with planned street improvements. Existing electrical distribution (i.e., 12 kilovolt), phone and cable lines along the West Lane and Eight Mile Road frontages of the Project site would be undergrounded or relocated in conjunction with required street improvements.

DEVELOPMENT AGREEMENTS

The proposed Project includes a request for approval of one or more Development Agreements (DA) governing the relationship between the City and the Project applicants. The DA may be used to establish City/applicant agreements related to the Project. Such agreements may include commitments to Project entitlements and development standards as well as any administrative and/or financial relationships that may be defined during the review of the

development plan. These relationships have not been defined at present and would be developed during the review of the proposed Project and incorporated into the DA prior to Project approval.

REQUESTED ENTITLEMENTS AND OTHER APPROVALS

The City of Stockton will be the Lead Agency for the proposed Project, pursuant to the State Guidelines for Implementation of the California Environmental Quality Act (CEQA), Section 15050. Actions that would be required from the City include, but are not limited to the following:

- Certification of the EIR;
- Adoption of the Mitigation Monitoring and Reporting Program;
- Approval of City of Stockton General Plan Amendments (Land Use/Circulation Elements);
- Approval of City of Stockton Pre-zoning;
- Approval of annexation;
- Approval of Large Lot Tentative and Final maps;
- Approval of Small Lot Tentative and Final maps;
- Approval of Improvement Plans;
- Approval of Grading Plans;
- Approval of Building Permits;
- Approval of future site plan and design review for Tra Vigne East;
- Approval of design review for Tra Vigne West;
- Approval of Development Agreements;
- Approval of a Conditional Use Permit for the gas station and wine tasting room at the Commercial site;
- Issuance of grading, encroachment, and building permits;
- City review and approval of Project utility plans;
- Formation of a finance district (i.e. CFD or other finance district); and
- Formation of, or annexation into, a Lighting and Landscape District.

OTHER PUBLIC AGENCIES WHOSE APPROVAL IS REQUIRED (E.G., PERMITS, ETC.)

The following agencies may be required to issue permits or approve certain aspects of the proposed Project. Other governmental agencies that may require approval include, but are not limited to, the following:

- California Department of Fish and Wildlife – Streambed Alteration Agreement pursuant to Section 1602 of the California Fish and Game Code;
- Approval by the Central Valley Flood Protection Board (CVFPB);
- Central Valley Regional Water Quality Control Board (CVRWQCB) – Storm Water Pollution Prevention Plan (SWPPP) approval prior to construction activities pursuant to the Clean Water Act;
- CVRWQCB – Permitting of State jurisdictional areas, including isolated wetlands pursuant to the Porter-Cologne Water Quality Act;

- CVRWQCB – Water quality certification pursuant to Section 401 of the Clean Water Act;
- Approval by the San Joaquin County Flood Control;
- Native American Heritage Commission (NAHC);
- San Joaquin Local Agency Formation Commission (LAFCo) – Annexation;
- Sacramento & San Joaquin Drain District (SSJDD) – Approval for construction of an outfall;
- San Joaquin Valley Air Pollution Control District (SJVAPCD) – Approval of construction-related air quality permits;
- SJVAPCD – Authority to Construct, Permit to Operate for stationary sources of air pollution (auxiliary power, storm drainage pump station);
- SJCOG, Inc. (SJCOG) – Issuance of incidental take permit under the San Joaquin Multi-Species Habitat Conservation and Open Space Plan (SJMSCP); and
- United States Army Corps. Of Engineers (USACE) – Permitting of federal jurisdictional areas pursuant to Section 404 of the Clean Water Act.

PROJECT ALTERNATIVES DESCRIPTIONS

Five alternatives to the proposed Project were developed based on input from City staff and the technical analysis performed to identify the environmental effects of the proposed Project. The alternatives analyzed in this EIR include the following five alternatives in addition to the proposed Project.

- No Build Alternative
- With Bridge Alternative
- General Plan 2035 Alternative
- Reduced Project Alternative
- Reduced Intensity/Density Alternative

NO BUILD ALTERNATIVE

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current existing agricultural condition. It is noted that the No Build Alternative would fail to meet the Project objectives identified by the City of Stockton.

WITH BRIDGE ALTERNATIVE

Under the With Bridge Alternative, the Project site would be developed with similar land use designations and circulation facilities as the proposed Project. However, unlike the proposed Project, this alternative would include construction of the bridge crossing over Bear Creek associated with what is shown on the Future Roadways Map as an extension of Marlette Road from the west through the Project site and ultimately traveling eastward through the Bear Creek South project to Holman Road.

This alternative would result in the same number of HDR units as the proposed Project (340 units), and would reduce the number of LDR units from 1,073 under the proposed Project to 1,066 units, for a total of 1,406 units. This would result in a reduction of seven units when

compared to the proposed Project. Additionally, this alternative would dedicate an equal amount of commercial and non-traditional park areas as the proposed Project, and would increase the amount of traditional park area from 15.07 acres under the proposed Project to 15.37 acres. The anticipated commercial uses and utility improvements under the With Bridge Alternative would be similar to the proposed Project.

This alternative also establishes a site for a 14.7-acre K-8 school to be developed by the LUSD at their discretion. If the LUSD decides to not pursue building a school at this site then the site would be developed for residential in accordance with the General Plan land use designation which would result in the construction an additional 90 units in place of the school. Under this variation, the total residential units would increase from 1,406 to 1,496 units. The balance of the Project site would be developed as proposed under the Proposed Project.

Figures 14 and 15 illustrate the With Bridge Alternative site plan, both with and without the school.

GENERAL PLAN 2035 ALTERNATIVE

Under the General Plan 2035 Alternative, the Project site would be developed with the same land use designations and circulation facilities as described in the City's General Plan 2035. This alternative would not require a General Plan amendment. The balance of the Project site would be developed as proposed under the proposed Project. Under this alternative, the high density residential area would be decreased from 11.7 acres under the proposed Project to 10.67 acres. Additionally, the commercial area would be decreased from 10.5 acres under the proposed Project to 9.0 acres. This alternative would not include dedication of a K-8 school site. This alternative would include construction of the bridge crossing over Bear Creek, which is currently reflected in the Circulation Element of the General Plan 2035. The bridge crossing would change the trip distribution when compared to the proposed Project by providing an alternative access way to the south.

Based on the existing land use designations, the Project site would support approximately 15.7 acres of industrial use (406,937 sf – 0.6 FAR), approximately 9.0 acres of commercial use (117,612 sf – 0.3 FAR), 1,730 (6.1 units per gross acre) to 2,467 (8.7 units per gross acre) low density residential units, and 248 (23.2 units per gross acre) to 309 (29.0 units per gross acre) high density residential units. This alternative would result in 1,978 to 2,776 residential units (low and high density), which is 475 to 1,273 (without school site) to 565 to 1,363 (with school site) more units than under the proposed Project. These are considered maximum development assumptions and would likely be less due to the need for parks, roadways, detention basins, etc. This alternative is illustrated on Figure 6.

REDUCED PROJECT ALTERNATIVE

Under the Reduced Project Alternative, the Project site would be developed with the same components as the proposed Project, but the area utilized for the development would be reduced by approximately 33 percent. The total Project site would be reduced by approximately 106.2 acres, and the existing 15.57-acre industrial area would be eliminated from the Project site. This approximately 197.05-acre alternative would result in up to 715 LDR units (with

school) to 805 LDR units (without school) and up to 226 HDR units (with or without school), for a total of 941 units (with school) to 1,031 units (without school). This would result in a reduction of 472 (with or without school) units when compared to the proposed Project. The 10.5-acre commercial area in the northwest portion of the Project site would be eliminated. This would eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for a 14.7-acre K-8 school to be developed by the LUSD. However, if the LUSD decides against the K-8 school siting, the area will instead include the development of single family residential units.

REDUCED INTENSITY/DENSITY ALTERNATIVE

Under this alternative, the Project site would be developed with a reduction in the overall Project intensity/density while maintaining the approximate overall Project footprint. For the purposes of discussion, this option considers a 20 percent reduction in the intensity/density of the Project while maintaining the approximately 318.82-acre Project footprint. Typical residential lots would increase from 5,000 to 6,000 sf to 6,000 to 7,400 sf. This alternative would result in up to 858 LDR units (with school) to 930 LDR units (without school) and up to 272 HDR units (with or without school), for a total of 1,130 units (with school) to 1,202 units (without school). This would result in a reduction of 283 (with school) to 301 (without school) units when compared to the proposed Project. The 10.5-acre commercial area in the northwest portion of the Project site would be eliminated. This would eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for a 14.7-acre K-8 school to be developed by the LUSD. However, if the LUSD decides against the K-8 school siting, the area will instead include the development of single family residential units.

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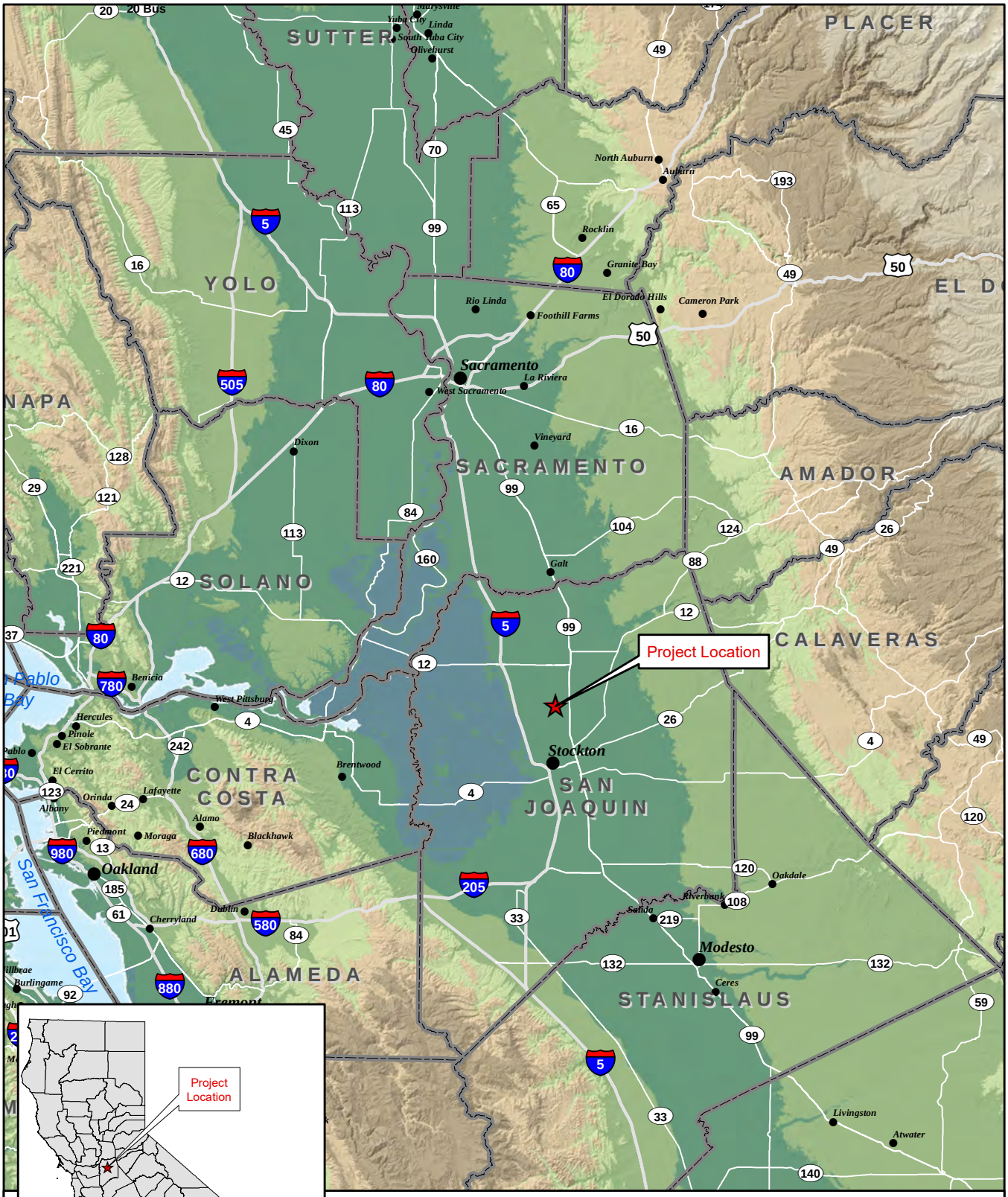

TRA VIGNE

Figure 1: Regional Context/Location

Sources: California Spatial Information Library. Map date: January 7, 2016.

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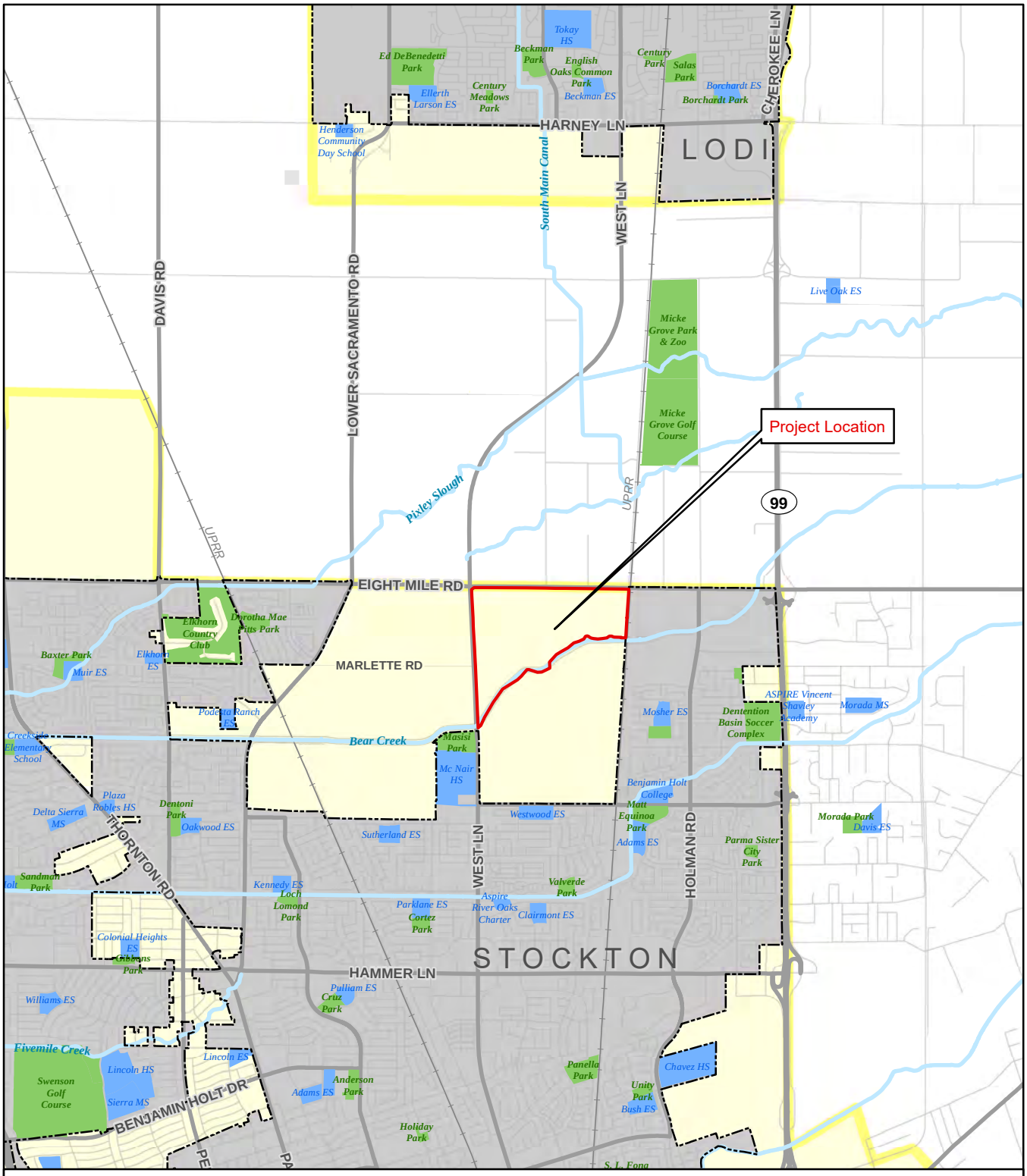

TRA VIGNE

Figure 2: Project Vicinity

Legend

- CityLimits
- Sphere of Influence
- Public School
- Park
- USGS Stream/River

0 0.5 1
Miles

1:60,000

Data sources: North Star Engineering Group, Inc., December 16, 2015; San Joaquin County GIS; USGS National Hydrography Data Set. Map date: May 17, 2016.

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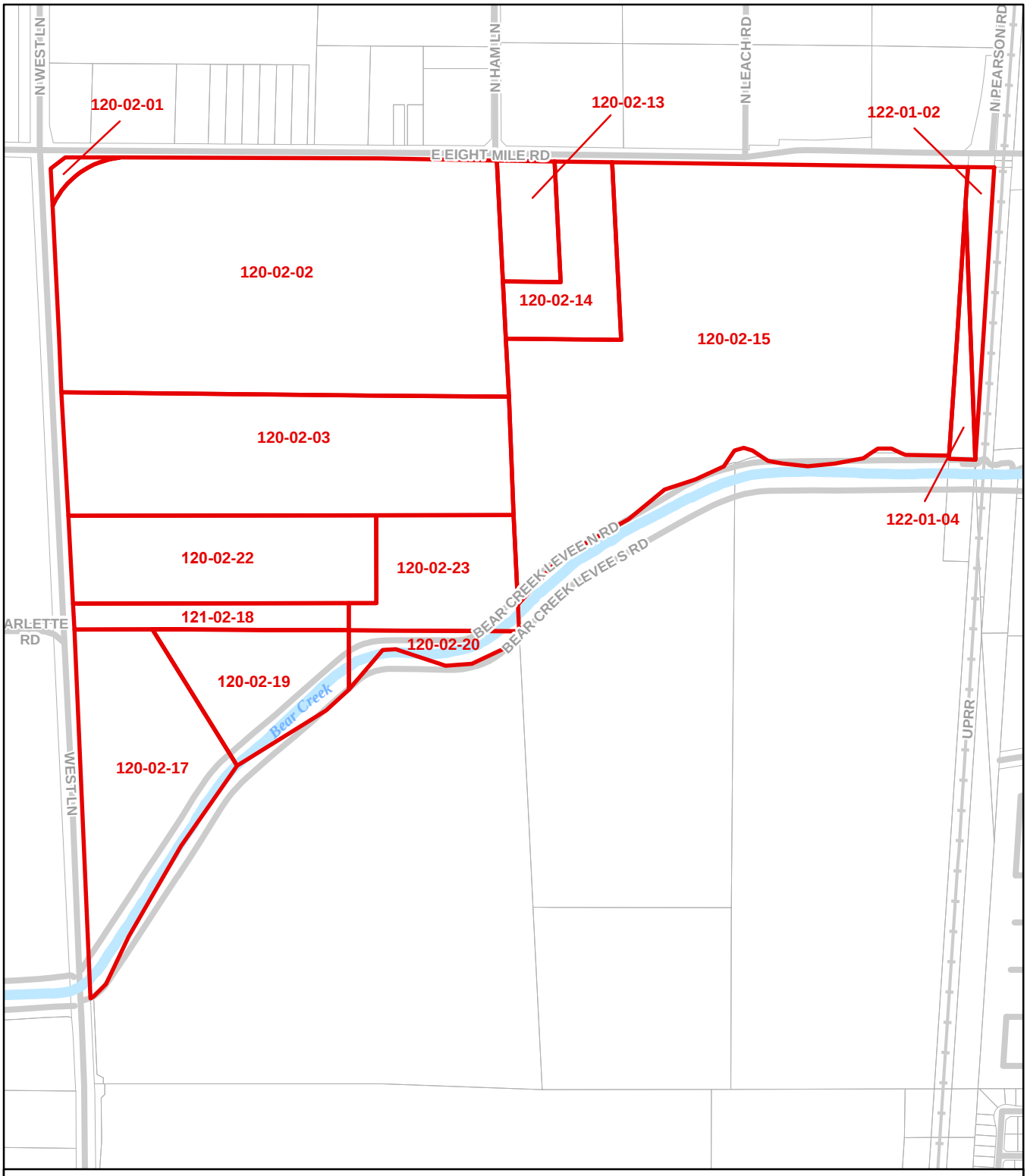

TRA VIGNE

Figure 3: APN Map

Legend

Project Site Parcels

0 250 500
Feet
1:10,000

Data sources: San Joaquin County GIS; City of Stockton GIS.
Map date: May 17, 2016.

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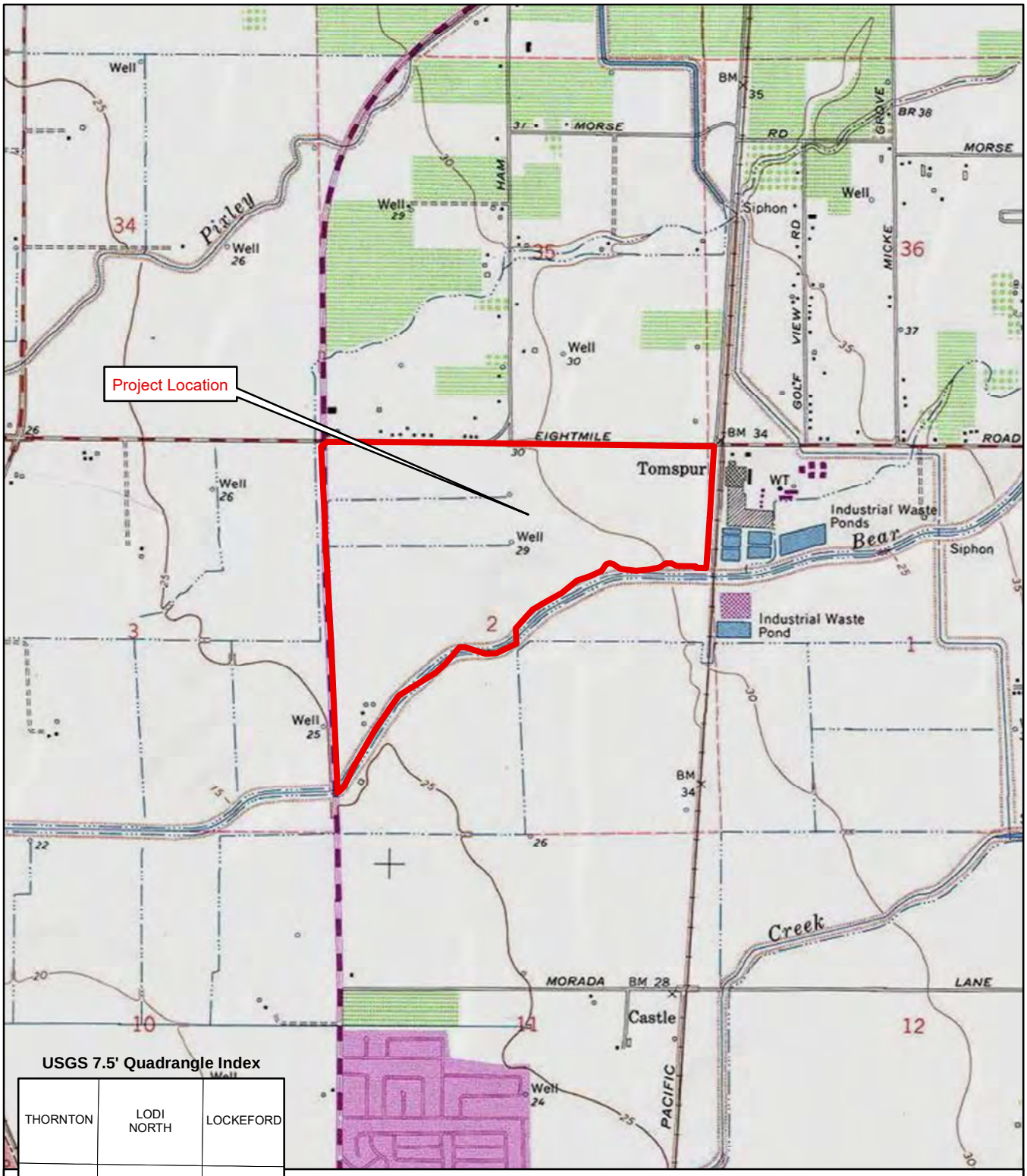

USGS 7.5' Quadrangle Index

THORNTON	LODI NORTH	LOCKEFORD
TERMINOUS	LODI SOUTH	WATERLOO
HOLT	STOCKTON WEST	STOCKTON EAST

0 1,000 2,000
Feet
1:24,000

TRA VIGNE

Figure 4: USGS Topographic Map

Lodi South Quadrangle

Data sources: North Star Engineering Group, Inc., December 16, 2015. San Joaquin County GIS; ArcGIS Online USGS Topographic Map Service. Map date: May17, 2016.

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TRA VIGNE

Figure 5: Aerial View of Project Site

Legend

Project Boundary

0 250 500

Feet

1:12,000

Data sources: North Star Engineering Group, Inc. December 16, 2015. San Joaquin County GIS; ArcGIS Online BING Map aerial imagery service. Map date: May 16, 2016.

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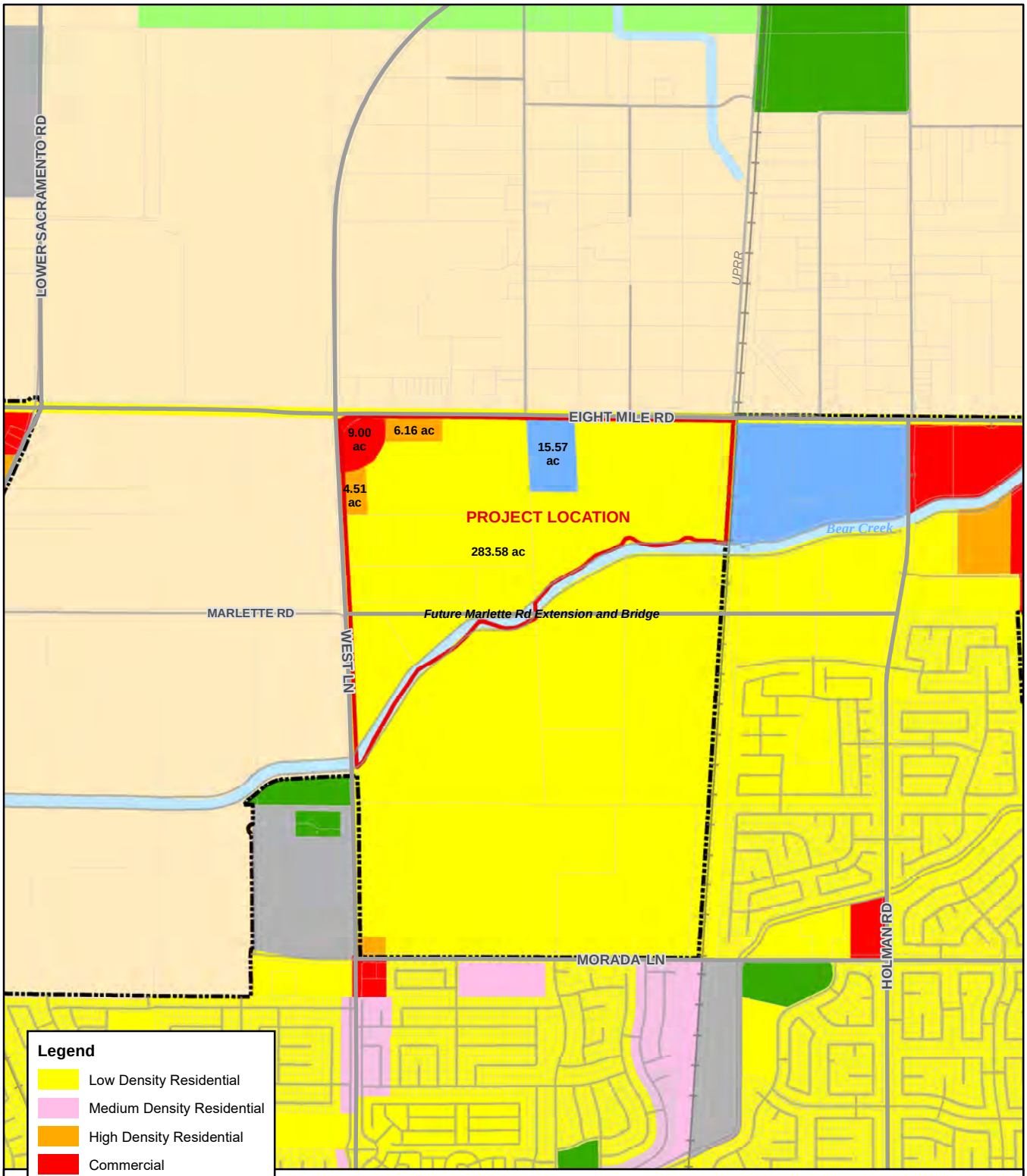

Legend

- Low Density Residential
- Medium Density Residential
- High Density Residential
- Commercial
- Industrial
- Institutional
- Open Space/Agriculture
- Parks and Recreation
- Village

Planning Areas

- CityLimits
- Sphere of Influence

0 500 1,000
Feet
1:24,000

TRA VIGNE

Figure 6: General Plan Land Use Designations

City of Stockton General Plan 2035

Data sources: North Star Engineering Group, Inc., December 16, 2015; San Joaquin County GIS; City of Stockton. Map date: May 17, 2016.

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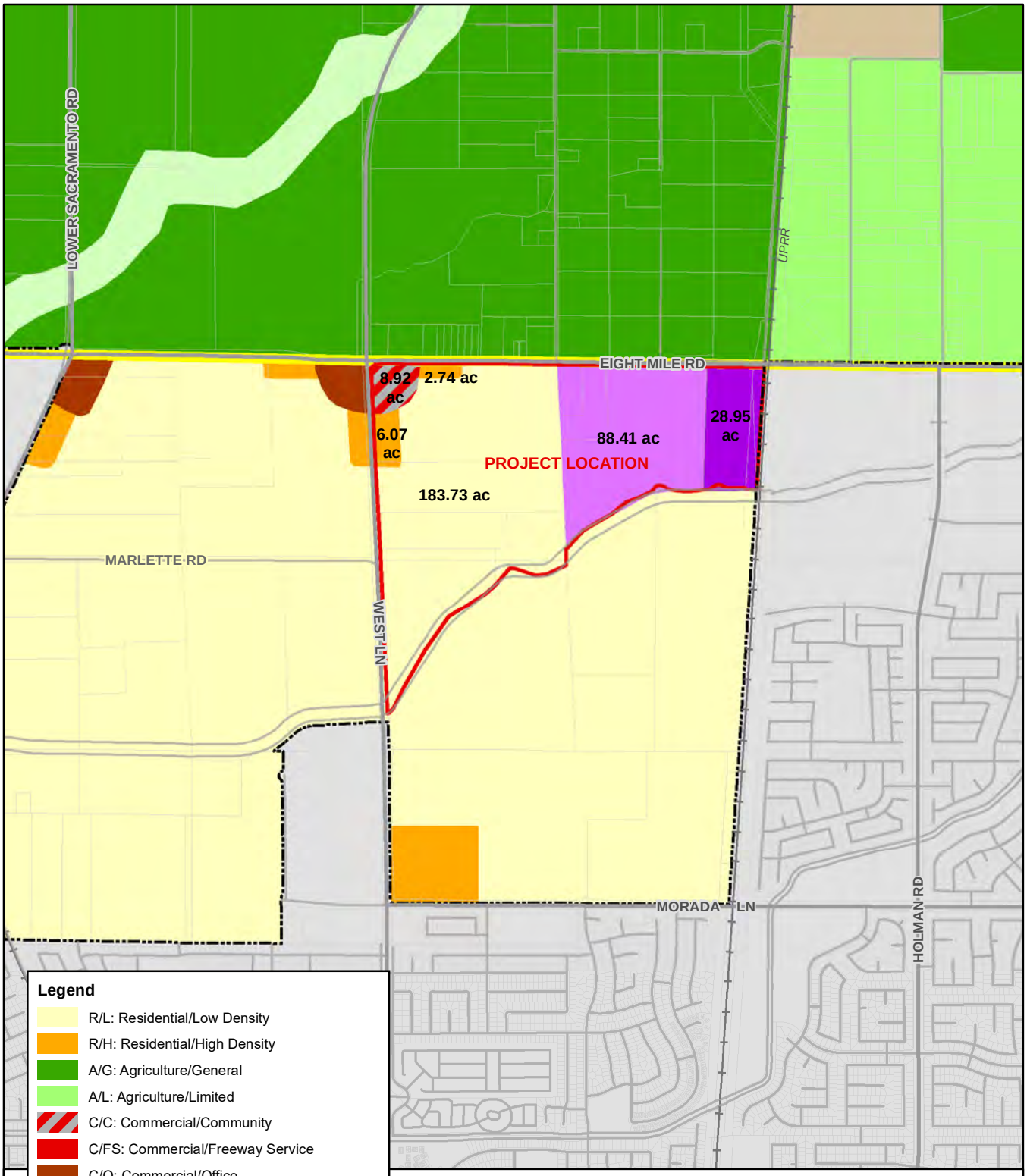

Legend

- R/L: Residential/Low Density
- R/H: Residential/High Density
- A/G: Agriculture/General
- A/L: Agriculture/Limited
- C/C: Commercial/Community
- C/FS: Commercial/Freeway Service
- C/O: Commercial/Office
- I/L: Industrial/Limited
- I/G: Industrial/General
- OS/RC: Opens Space/Resource Conservation
- OS/PR: Open Space/Parks & Recreation
- CIty of Stockton

Planning Areas

- CityLimits
- Sphere of Influence

0 500 1,000
Feet
1:24,000

TRA VIGNE

Figure 7a: General Plan Land Use Designations

San Joaquin County General Plan 2035

Data sources: North Star Engineering, Inc., December 16, 2015; San Joaquin County GIS; City of Stockton. Map date: May 11, 2017.

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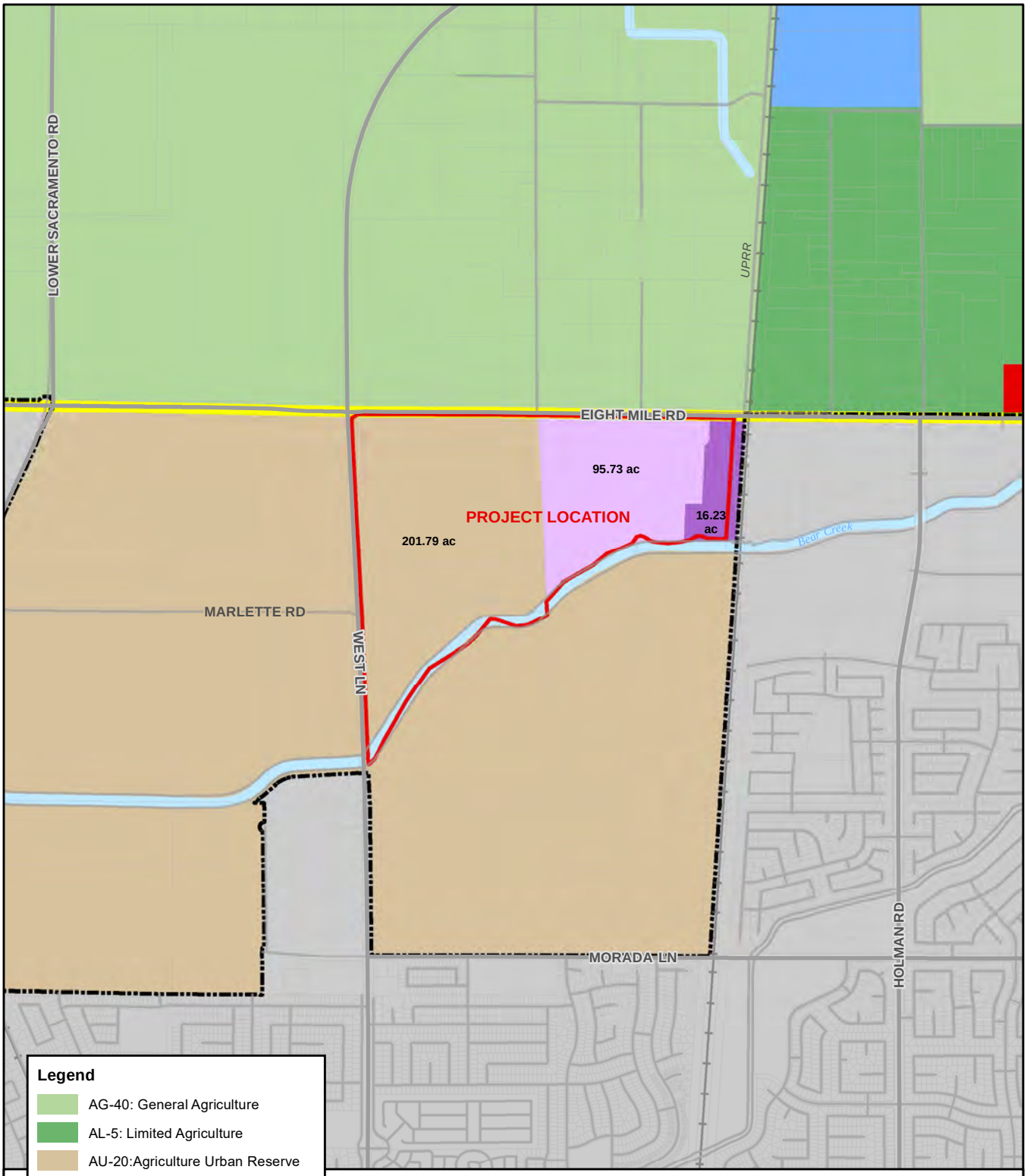

Legend

- AG-40: General Agriculture
- AL-5: Limited Agriculture
- AU-20:Agriculture Urban Reserve
- C-FS: Freeway Service Commercial
- I-G: General Industrial
- I-L: Limited Industrial
- P-F: Public Facilities
- City of Stockton

Planning Areas

- CityLimits
- Sphere of Influence

0 500 1,000
Feet
1:24,000

TRA VIGNE

Figure 7b: Existing Zoning

San Joaquin County

Data sources: North Star Engineering, Inc., December 16, 2015; San Joaquin County GIS; City of Stockton. Map date: February 16, 2016.

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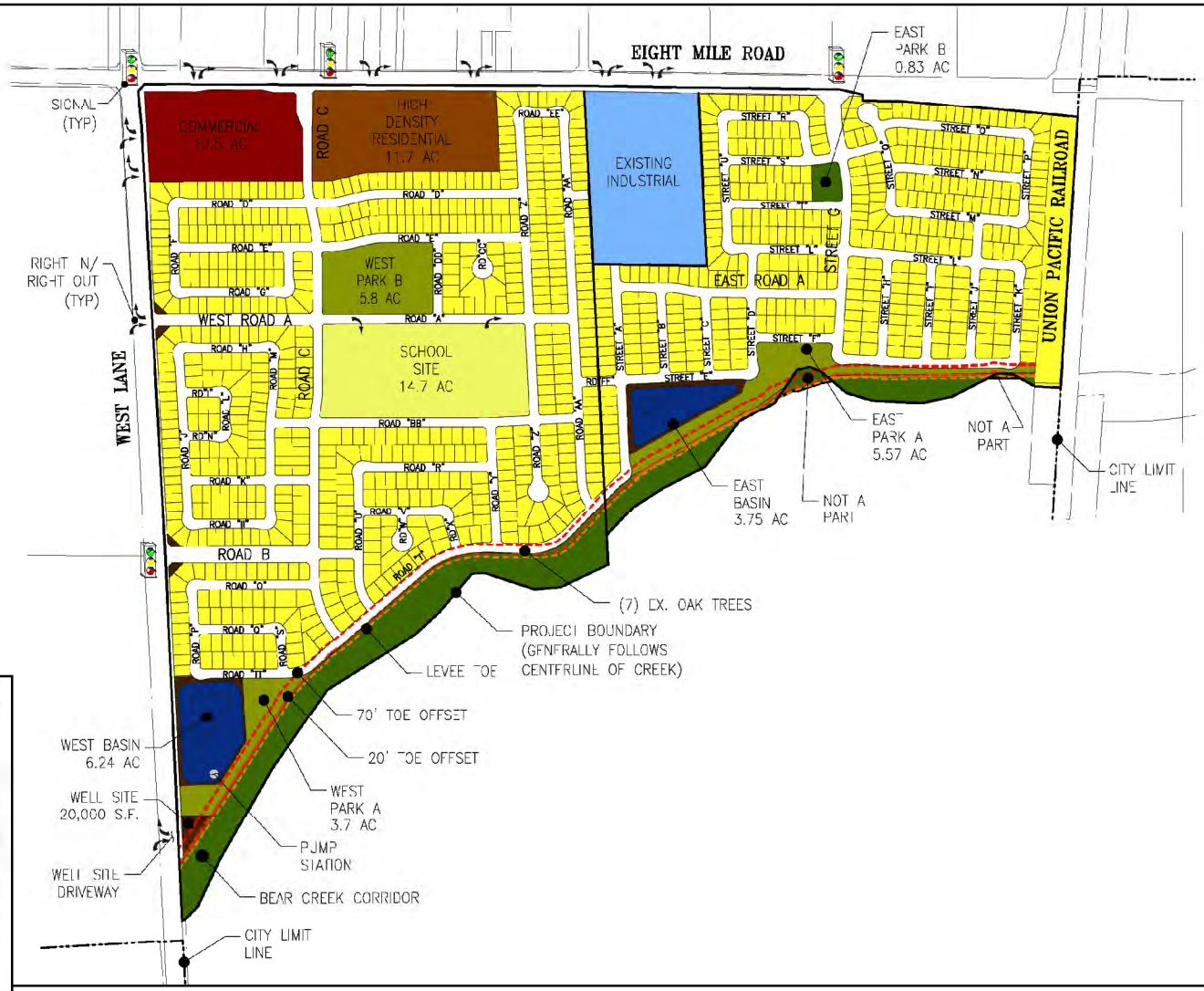

LAND USE LEGEND-WEST SIDE

COMMERCIAL	10.5 ACRES
SCHOOL SITE	14.7 ACRES
TRADITIONAL PARK AREA	9.5 ACRES
NON-TRADITIONAL PARK AREA	13.75 ACRES
TOTAL RL LOTS	655
TOTAL HD UNITS	340

LAND USE LEGEND-EAST SIDE

TRADITIONAL PARK AREA	5.57 ACRES
NON-TRADITIONAL PARK AREA	6.61 ACRES
TOTAL RL LOTS	418

LAND USE LEGEND-TOTAL

COMMERCIAL	10.5 ACRES
SCHOOL SITE	14.7 ACRES
TRADITIONAL PARK AREA	15.07 ACRES
NON-TRADITIONAL PARK AREA	20.36 ACRES
TOTAL RL LOTS	1,073
TOTAL HD UNITS	340

0 250 500
Feet

1:12,000

Data sources: NorthStar Engineering Group, Tra Vigne Lot Layout Exhibit, April 3, 2017. Map date: April 27, 2017.

TRA VIGNE

Figure 8a: Site Plan

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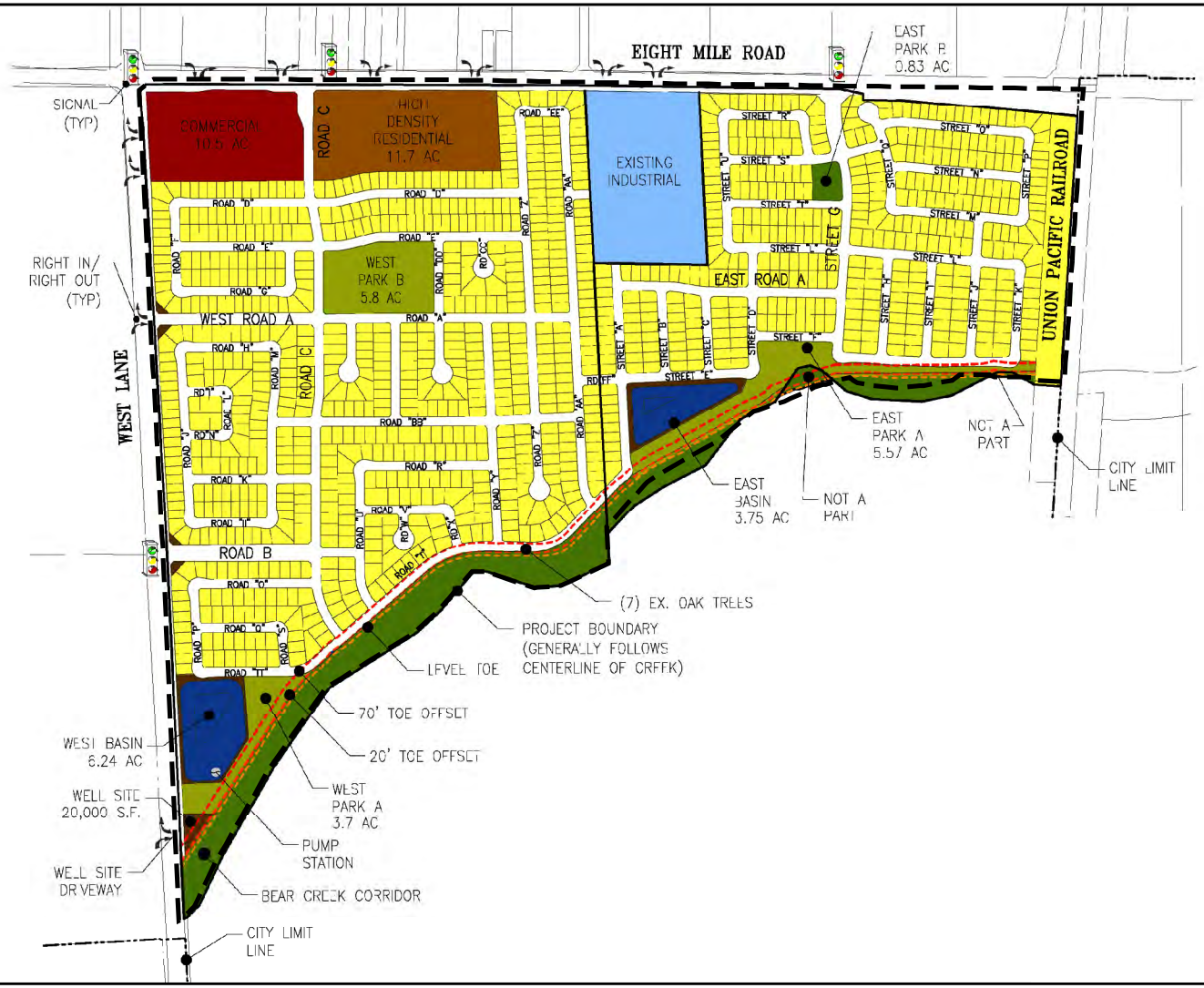

LAND USE LEGEND-WEST SIDE

COMMERCIAL	10.5 ACRES
SCHOOL SITE	14.7 ACRES
TRADITIONAL PARK AREA	9.5 ACRES
NON-TRADITIONAL PARK AREA	13.75 ACRES
TOTAL RL LOTS	745
TOTAL HD UNITS	340

LAND USE LEGEND-EAST SIDE

TRADITIONAL PARK AREA	5.57 ACRES
NON-TRADITIONAL PARK AREA	6.61 ACRES
TOTAL RL LOTS	418

LAND USE LEGEND-TOTAL

COMMERCIAL	10.5 ACRES
SCHOOL SITE	14.7 ACRES
TRADITIONAL PARK AREA	15.07 ACRES
NON-TRADITIONAL PARK AREA	20.36 ACRES
TOTAL RL LOTS	1,163
TOTAL HD UNITS	340

Data sources: NorthStar Engineering Group, Tra Vigne Lot Layout Exhibit Scenario 43.a.2, April 3, 2017. Map date: April 27, 2017.

0 250 500
Feet

1:12,000

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Figure 8b: Without School Site Plan

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TRA VIGNE

Figure 8c:
Commercial Site Plan

N

0 50 100
Feet

1:1,600

Data sources: TWA Architect, 4-27-2017.
Map date: May 4, 2017.

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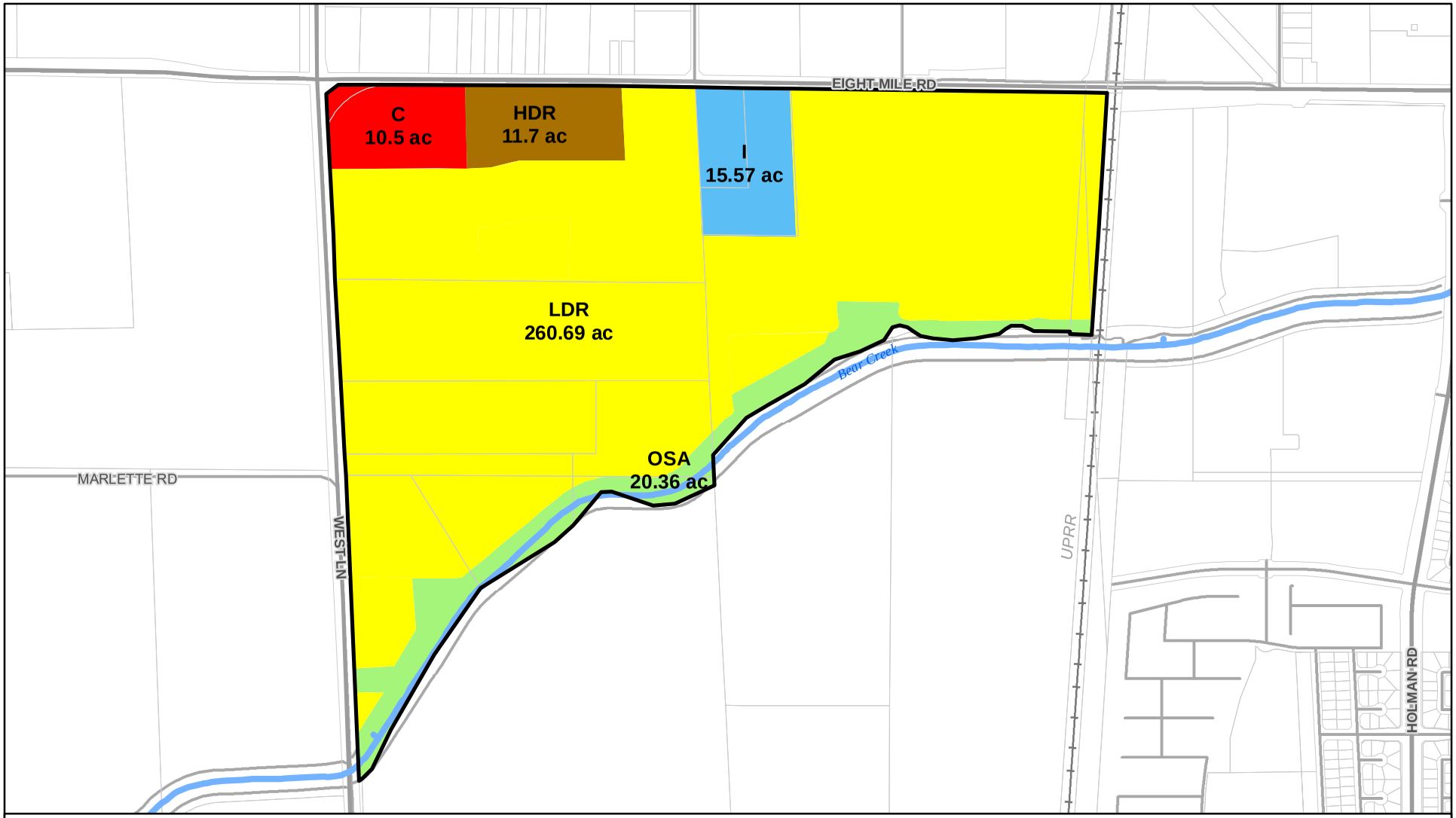

Legend

- LDR-Low Density Residential
- HDR-High Density Residential
- C-Commercial
- I-Industrial
- OSA-Open Space/Agriculture

Data sources: NorthStar Engineering Group; San Joaquin County; USGS National Hydrography Dataset. Map date: April 27, 2017.

0 250 500
Feet

1:12,000

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Figure 9: Proposed General Plan Land Use Designations

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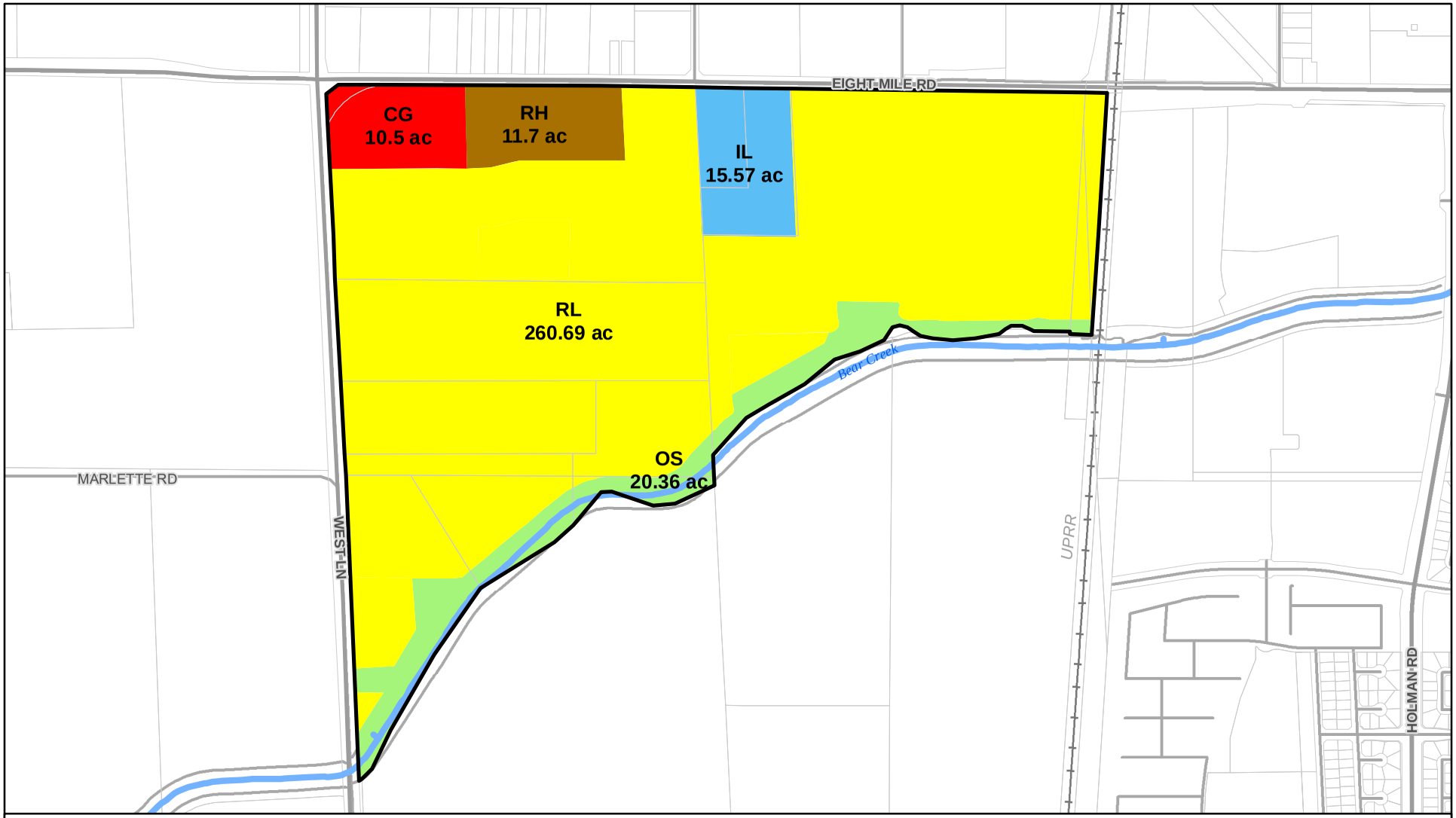

Legend

- RL - Residential, Low Density
- RH - Residential, High Density
- CG - Commercial, General
- IL - Industrial, Limited
- OS - Open Space

Data sources: NorthStar Engineering Group; San Joaquin County; USGS National Hydrography Dataset. Map date: April 27, 2017.

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Feet

1:12,000

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Figure 10: Pre-Zoning Designations

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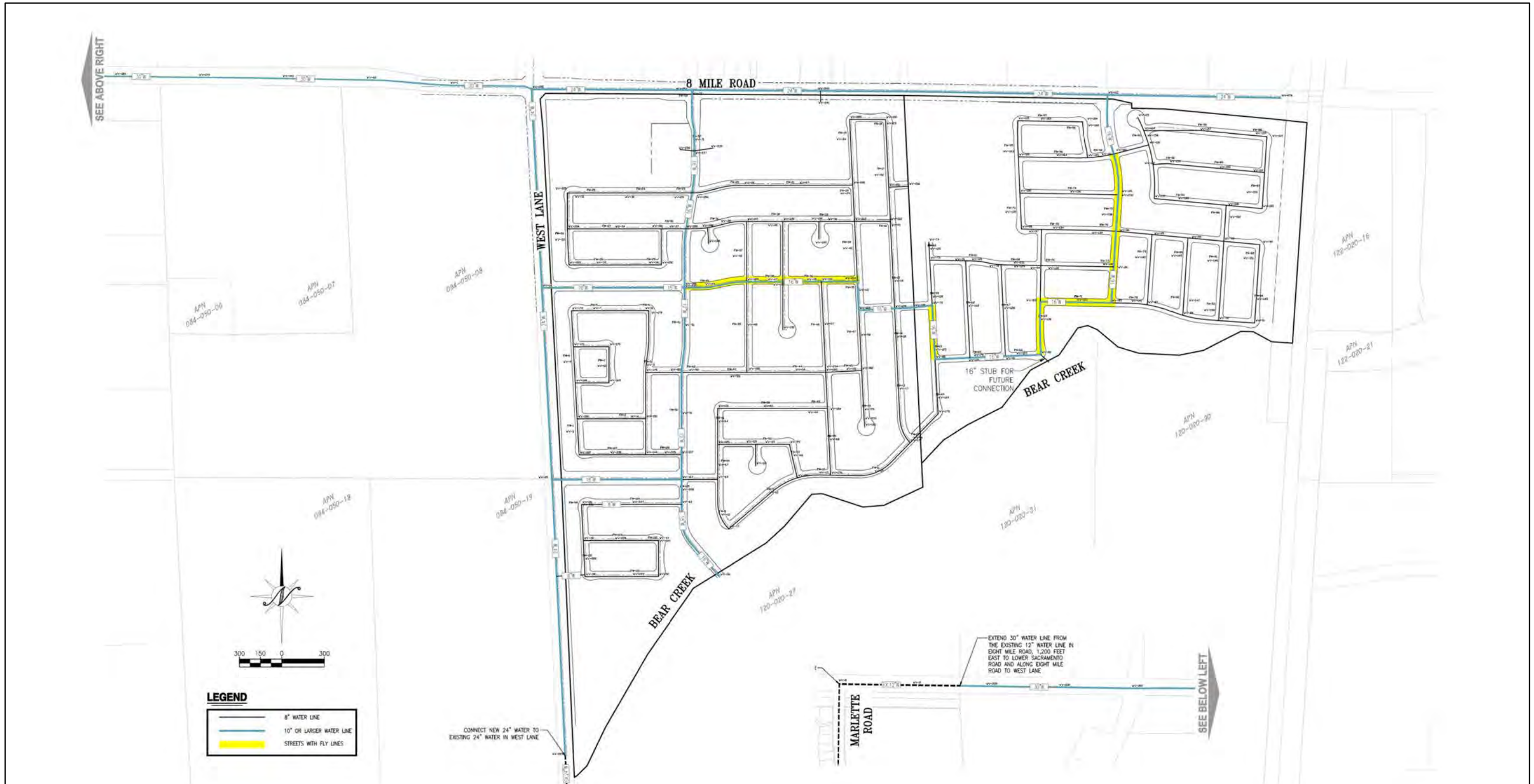

TRA VIGNE

Figure 11. Water Exhibit

Source: North Star Engineering. Map date: June 21, 2017.

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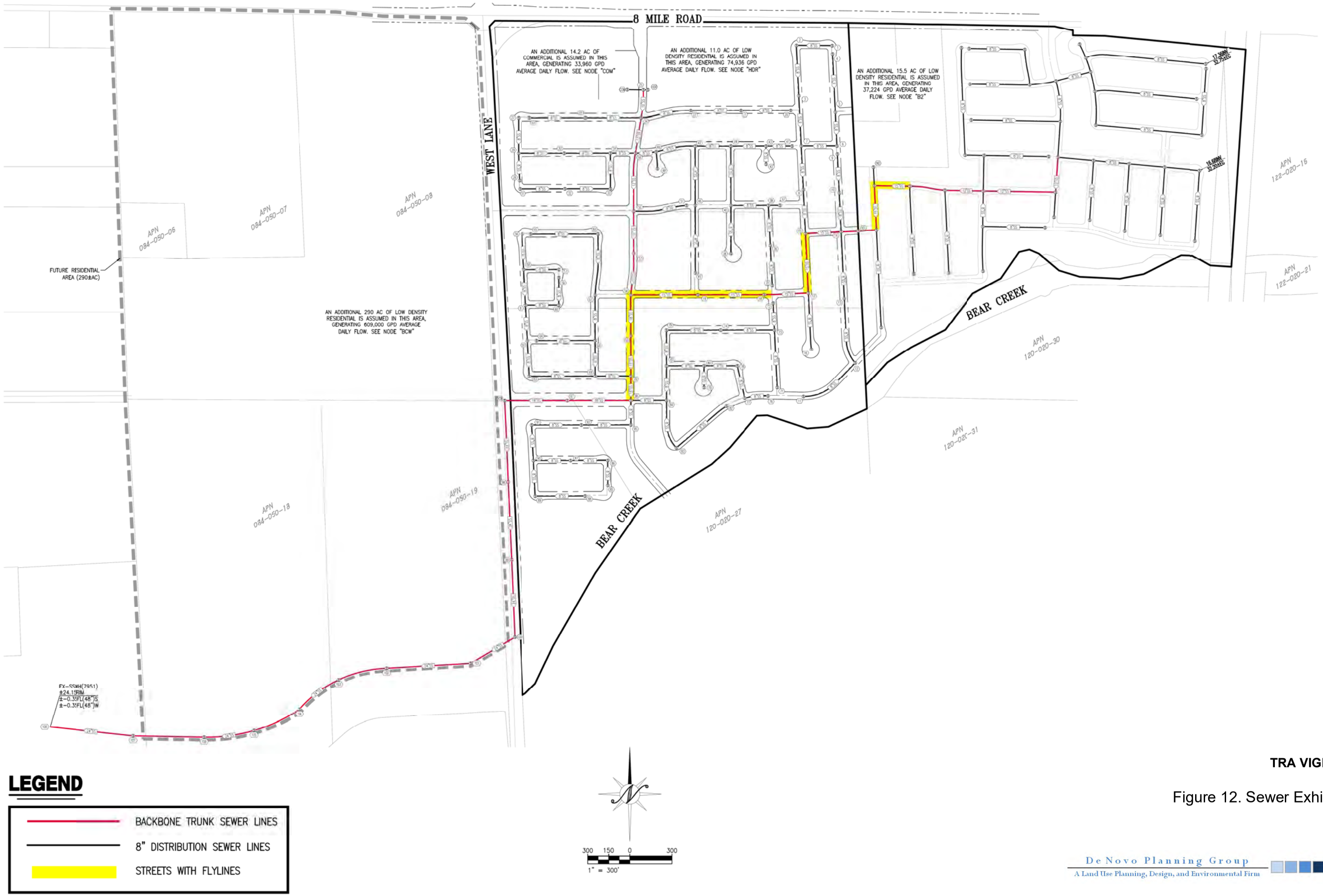

Source: NorthStar Engineering Group, 4-25-2017. Map date: May 4, 2017.

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Figure 12. Sewer Exhibit

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Figure 13. Storm Water Exhibit

Source: North Star Engineering. Map date: June 21, 2017.

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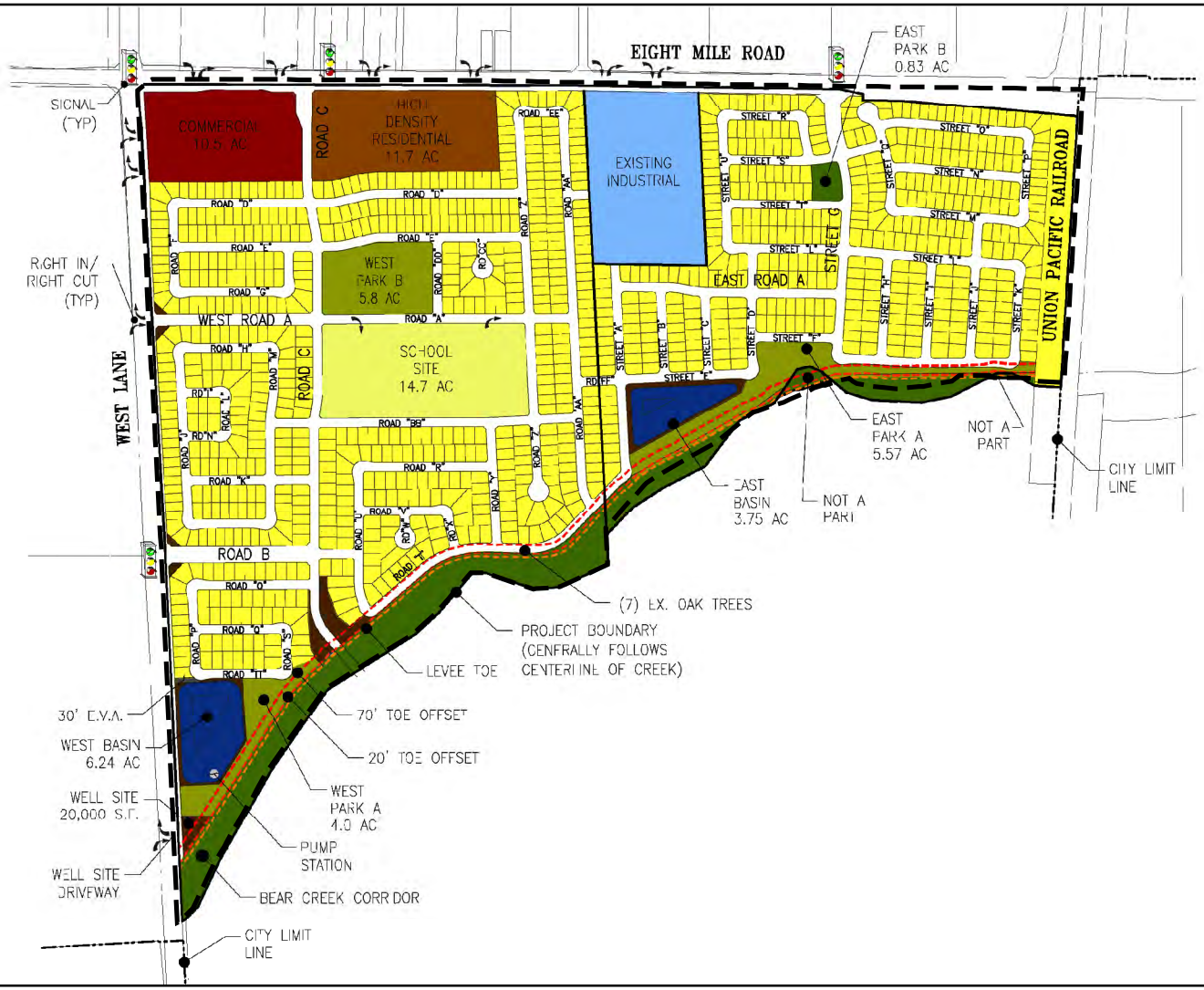

LAND USE LEGEND-WEST SIDE

COMMERCIAL	10.5 ACRES
SCHOOL SITE	14.7 ACRES
TRADITIONAL PARK AREA	9.8 ACRES
NON-TRADITIONAL PARK AREA	13.75 ACRES
TOTAL RL LOTS	648
TOTAL HD UNITS	340

LAND USE LEGEND-EAST SIDE

TRADITIONAL PARK AREA	5.57 ACRES
NON-TRADITIONAL PARK AREA	6.61 ACRES
TOTAL RL LOTS	418

LAND USE LEGEND-TOTAL

COMMERCIAL	10.5 ACRES
SCHOOL SITE	14.7 ACRES
TRADITIONAL PARK AREA	15.37 ACRES
NON-TRADITIONAL PARK AREA	20.36 ACRES
TOTAL RL LOTS	1,066
TOTAL HD UNITS	340

0 250 500
Feet

1:12,000

Data sources: NorthStar Engineering Group, Tra Vigne Lot Layout Exhibit Scenario 43.b.1, April 3, 2017. Map date: April 27, 2017.

TRA VIGNE

Figure 14: With Bridge and School Alternative Site Plan

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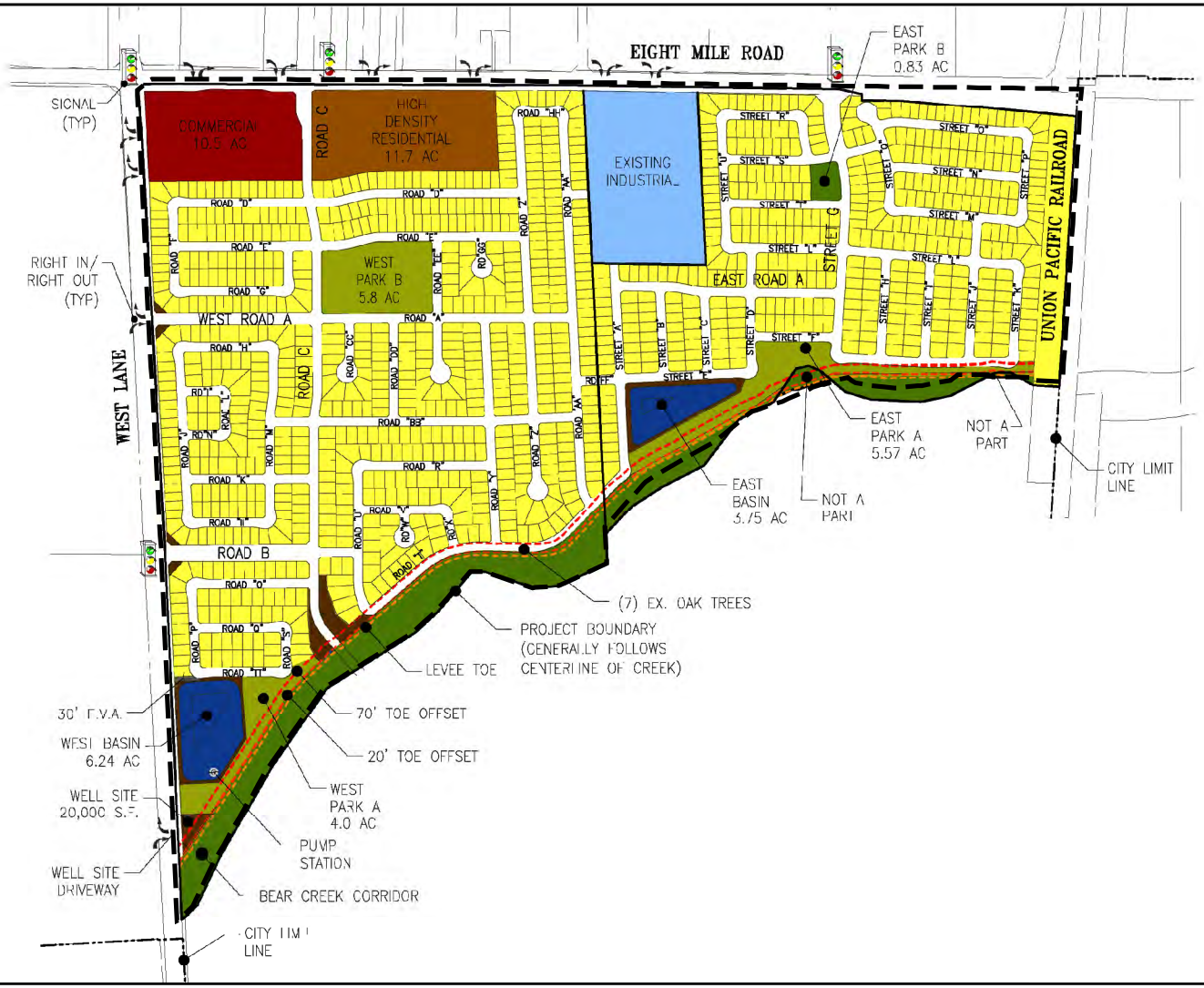

LAND USE LEGEND-WEST SIDE

COMMERCIAL	10.5 ACRES
SCHOOL SITE	14.7 ACRES
TRADITIONAL PARK AREA	9.8 ACRES
NON-TRADITIONAL PARK AREA	13.75 ACRES
TOTAL RL LOTS	738
TOTAL HD UNITS	340

LAND USE LEGEND-EAST SIDE

TRADITIONAL PARK AREA	5.57 ACRES
NON-TRADITIONAL PARK AREA	6.61 ACRES
TOTAL RL LOTS	418

LAND USE LEGEND-TOTAL

COMMERCIAL	10.5 ACRES
SCHOOL SITE	14.7 ACRES
TRADITIONAL PARK AREA	15.37 ACRES
NON-TRADITIONAL PARK AREA	20.36 ACRES
TOTAL RL LOTS	1,156
TOTAL HD UNITS	340

0 250 500
Feet

1:12,000

Data sources: NorthStar Engineering Group, Tra Vigne Lot Layout Exhibit Scenario 43.b.2, April 3, 2017. Map date: April 27, 2017.

TRA VIGNE

Figure 15: With Bridge and Without School Alternative Site Plan

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

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STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY EDMUND G. BROWN JR., GOVERNOR

CENTRAL VALLEY FLOOD PROTECTION BOARD
3310 El Camino Ave., Ste. 170
SACRAMENTO, CA 95821
(916) 574-0609 FAX: (916) 574-0682

July 17, 2017

Mr. Brian Millar
City of Stockton
345 N. El Dorado Street
Stockton, California 95202

Subject: CEQA Comments: Tra Vigne Development Project, Notice of Preparation, SCH No.: 2016022061

Location: San Joaquin County

Dear Mr. Millar,

Central Valley Flood Protection Board (Board) staff has reviewed the subject document and provides the following comments:

The proposed project is within Bear Creek, a regulated stream under Board jurisdiction, and may require a Board permit prior to construction.

The Board's jurisdiction covers the entire Central Valley including all tributaries and distributaries of the Sacramento and San Joaquin Rivers, and the Tulare and Buena Vista basins south of the San Joaquin River.

Under authorities granted by California Water Code and Public Resources Code statutes, the Board enforces its Title 23, California Code of Regulations (Title 23) for the construction, maintenance, and protection of adopted plans of flood control, including the federal-State facilities of the State Plan of Flood Control, regulated streams, and designated floodways.

Pursuant to Title 23, Section 6 a Board permit is required prior to working within the Board's jurisdiction for the placement, construction, reconstruction, removal, or abandonment of any landscaping, culvert, bridge, conduit, fence, projection, fill, embankment, building, structure, obstruction, encroachment, excavation, the planting, or removal of vegetation, and any repair or maintenance that involves cutting into the levee.

Permits may also be required to bring existing works that predate permitting into compliance with Title 23, or where it is necessary to establish the conditions normally imposed by permitting. The circumstances include those where responsibility for the works has not been clearly established or ownership and use have been revised.

Other federal (including U.S. Army Corps of Engineers Section 10 and 404 regulatory permits), State and local agency permits may be required and are the applicant's responsibility to obtain.

Board permit applications and Title 23 regulations are available on our website at http://www.cvfpb.ca.gov/. Maps of the Board's jurisdiction are also available from the California Department of Water Resources website at http://gis.bam.water.ca.gov/bam/.

Please contact James Herota at (916) 574-0651, or via email at James.Herota@CVFlood.ca.gov if you have any questions.

Sincerely,

Andrea Buckley
Environmental Services and Land Management Branch Chief

cc: Governor's Office of Planning and Research
State Clearinghouse
1400 Tenth Street, Room 121
Sacramento, California 95814

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

RECEIVED
JUL 3 1 2017
CITY OF STOCKTON
COMMUNITY DEVELOPMENT DEPT.

July 18, 2017

Regulatory Division (SPK-2017-00565)

City of Stockton
Attn: Mr. Brian Miller
345 North El Dorado Street
Stockton, California 95202

Dear Mr. Miller:

We are responding to your July 7, 2017, request for comments on the Tra Vigne Development Project. The State Clearinghouse project identification number is SCH 2016022061. The approximately 341.17-acre project site is located along the northern shore of Bear Creek, East of Stockton, and West of Highway 99, Latitude 38.053349°, Longitude -121.288380°, in the City of Stockton, San Joaquin County, California.

The Army Corps of Engineers' jurisdiction within the study area is under the authority of Section 404 of the Clean Water Act for the discharge of dredged or fill material into waters of the United States. Waters of the United States include, but are not limited to, rivers, perennial or intermittent streams, lakes, ponds, wetlands, vernal pools, marshes, wet meadows, and seeps. Project features that result in the discharge of dredged or fill material into waters of the United States will require Department of the Army authorization prior to starting work.

To ascertain the extent of waters on the project site, the applicant should prepare a wetland delineation, in accordance with the "Minimum Standards for Acceptance of Preliminary Wetlands Delineations" and "Final Map and Drawing Standards for the South Pacific Division Regulatory Program" under "Jurisdiction" on our website at the address below, and submit it to this office for verification. A list of consultants that prepare wetland delineations and permit application documents is also available on our website at the same location.

The range of alternatives considered for this project should include alternatives that avoid impacts to wetlands or other waters of the United States. Every effort should be made to avoid project features which require the discharge of dredged or fill material into waters of the United States. In the event it can be clearly demonstrated there are no practicable alternatives to filling waters of the United States, mitigation plans should be developed to compensate for the unavoidable losses resulting from project implementation.

RECEIVED
JUL 3 1 2017
CITY OF STOCKTON
COMMUNITY DEVELOPMENT DEPT.

Please refer to identification number SPK-2017-00565 in any correspondence concerning this project. If you have any questions, please contact Ms. Chandra Browne at the letterhead address above, by email at *Chandra.L.Browne@usace.army.mil*, or telephone at (916) 557-6652. For more information regarding our program, please visit our website at *www.spk.usace.army.mil/Missions/Regulatory.aspx*.

Sincerely,

Chandra L. Browne,
Project Manager
California Delta Section
Regulatory Division

WATERLOO MORADA FIRE DISTRICT
6925 E Foppiano Lane
Stockton, CA 95212
(209) 931-3107

August 6, 2017

Brian Millar
Project Manager
City of Stockton
345 N El Dorado Street
Stockton, CA 95202

Mr. Millar,

We are in receipt of the Notice of Preparation for the Tra Vigne Development Project sent by your office to the Board of Directors. We have been made aware of the 30-day public review period commencing on July 7, 2017.

The Board of Directors currently have the following concerns related to this annexation of property served by the Waterloo Morada Fire District (WMFD)

Our annual budget is approximately $2.9 million dollars, 87% of those funds come from property taxes. As stated in the Waterloo Morada Rural County Fire Protection District Financial Statements and Independent Auditors' Report of June 2016, the District is in a negative fund balance of $320,583.00.

Our current staffing is at the 2003 levels of service. Any further reductions due to the District's deficit will cause us to only staff fire engines with one person. Due to annexations by the City of Stockton we have closed our Station 2, without the financial ability to replace it, causing delayed responses into that area. We are attempting to find creative ways of re-opening the much needed station and increase staffing.

- The area of land proposed for annexation will cause a loss of property tax revenue to the fire district of $14,866.64 annually. (see attachment)

- Creation of an island that would still be served by WMFD

We, as Board Members have the responsibility to provide the best level of fire and EMS services that we can with the revenues provided to us by our customers.

Respectfully,

Clay Titus
Board President

WATERLOO MORADA FIRE DISTRICT
6925 E Foppiano Lane
Stockton, CA 95212
(209) 931-3107

ATTACHMENT A

Use Code	Parcel	TRA	1% Tax	Factor	Tax	Charge	Total
590	120-020-01	099-198	-	0.098881	-	-	-
07	120-020-02	099-406	43,290.19	0.098886	4,280.78	12.00	4,292.78
07	120-020-03	099-406	9,585.00	0.098857	947.54	12.00	959.54
07	120-020-17	099-198	9,209.28	0.098881	910.62	12.00	922.62
07	120-020-18	099-406	2,052.68	0.098857	202.92	12.00	214.92
07	120-020-19	099-198	4,549.16	0.098881	449.83	12.00	461.83
02	120-020-20	099-198	-	0.098810	-	-	-
07	120-020-22	099-406	7,267.56	0.098857	718.45	12.00	730.45
07	120-020-23	099-406	4,660.10	0.098857	460.68	12.00	472.68
810	120-020-13	099-406	-	0.098857		60.00	60.00
253	120-020-14	099-406	35,544.52	0.098857	3,513.82	756.00	4,269.82
420	120-020-15	099-406	24,500.00	0.098857	2,422.00	-	2,422.00
810	122-010-02	099-198		0.098881		30.00	30.00
810	122-010-04	099-406		0.098857		30.00	30.00
	Total		140,658.49		**13,906.64**	**960.00**	**14,866.64**

USE CODE DESCRIPTION

590-Waste Land
07-Potential Res. Subdividsion
02-Vac Lot w/Problems that preclude Building a Residence
810-SBE Valued
253-Truck Terminal
420-Irrigated Vineyard

MEMORANDUM

August 8, 2017

TO: Brian Millar, Consultant Planner
Community Development Department/Planning

FROM: Ann Okubo, Associate Civil Engineer
Municipal Utilities Department/Engineering

SUBJECT: **PUBLIC REVIEW OF THE NOTICE OF PREPARATION FOR THE TRA VIGNE DEVELOPMENT PROJECT**

The Municipal Utilities Department staff has reviewed the subject Notice of Preparation. Based on our review, staff offers the following comment.

1. Page 10, second paragraph, last sentence, This sentence can be removed. The description of the waterline is covered in the previous sentence.

JOHN ABREW
DIRECTOR OF MUNICIPAL UTILITIES

ANN OKUBO
ASSOCIATE CIVIL ENGINEER

JA:AO:hr

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Edmund G. Brown Jr.
Governor

Ken Alex
Director

Notice of Preparation

RECEIVED
JUL 14 2017
CITY OF STOCKTON
PERMIT CENTER / PLANNING DIV.

July 7, 2017

To: Reviewing Agencies

Re: Tra Vigne Development Project
SCH# 2016022061

Attached for your review and comment is the Notice of Preparation (NOP) for the Tra Vigne Development Project draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Brian Millar
City of Stockton
Community Development Department
345 N. El Dorado Street
Stockton, CA 95202

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH# 2016022061
Project Title Tra Vigne Development Project
Lead Agency Stockton, City of

Type NOP Notice of Preparation

Description The project includes up to 340 HDR units, up to 1,153 LDR units, up to 101,500 sq. ft. of commercial, an existing 15.57 acre industrial area, establishment of a 14.7 acre K-8 school site, and associated park and utility improvements. The project is requesting annexation of 341.17 acres of land into the Stockton city limits, and the subsequent development of 318.82 acres of land. The General Plan Amendment would include maintaining approx. 260.69 acres of LDR uses; maintaining approx. 15.57 acres of I uses; changing approx. 1.5 acres of LDR to C uses; changing approx. 1.03 acres of LDR to HDR uses; and changing 20.36 acres of LDR to OSA. Changes to the Circulation Element would include the removal of a bridge crossing over Bear Creek. Prezoning would include: RL, RH, IL, CG, and OS.

Lead Agency Contact

Name Brian Millar
Agency City of Stockton
Phone 530-902-9218 **Fax**
email
Address Community Development Department
345 N. El Dorado Street
City Stockton **State** CA **Zip** 95202

Project Location

County San Joaquin
City Stockton
Region
Cross Streets E 8 Mile Rd/West Ln
Lat / Long 38° 03' 14.6" N / 121° 17' 13.1" W
Parcel No. Various
Township **Range** **Section** **Base**

Proximity to:

Highways SR 99
Airports Lodi Airpark
Railways UPRR
Waterways Bear Creek
Schools Elk Horn, Westwood El.
Land Use GP: LDR, HDR, C I (City), R/L, R/H, C/C, I/L, I/G (Co.); Zoning (Co.): I-G, I-L, AU

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Economics/Jobs; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Wildlife; Growth Inducing; Landuse; Cumulative Effects

---

Reviewing Agencies Resources Agency; Department of Conservation; Central Valley Flood Protection Board; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Wildlife, Region 2; Office of Emergency Services, California; Department of Housing and Community Development; Delta Protection Commission; Delta Stewardship Council; Native American Heritage Commission; Public Utilities Commission; Caltrans, Division of Aeronautics; California Highway Patrol; Caltrans, District 10; Regional Water Quality Control Bd., Region 5 (Sacramento)

Note: Blanks in data fields result from insufficient information provided by lead agency.

Document Details Report
State Clearinghouse Data Base

Date Received 07/07/2017 *Start of Review* 07/07/2017 *End of Review* 08/07/2017

Note: Blanks in data fields result from insufficient information provided by lead agency.

Print Form

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P. O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH # 2016022061

Project Title: Tra Vigne Development Project

Lead Agency: City of Stockton
Contact Person: Brian Millar
Mailing Address: 345 N El Dorado St
Phone: (209) 902-9218 (530)
City: Stockton
Zip: 95202
County: San Joaquin

Project Location: County: San Joaquin
City/Nearest Community: Stockton
Cross Streets: E 8 Mile Rd/West Ln
Zip Code: 95202
Lat. / Long.: 38 ° 03 ' 14.6 " N/ 121 ° 17 ' 13.1 " W
Total Acres: 341.17
Assessor's Parcel No.: See Table 1 of NOP for list
Section: Twp.: Range: Base:
Within 2 Miles: State Hwy #: SR 99
Waterways: Bear Creek
Airports: Lodi Airpark
Railways: UPRR
Schools: Elk Horn, Westwood El.

Document Type:

CEQA: ☑ NOP ☐ Early Cons ☐ Neg Dec ☐ Mit Neg Dec
☐ Draft EIR ☐ Supplement/Subsequent EIR (Prior SCH No.) Other
NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI
Other: ☐ Joint Document ☐ Final Document ☐ Other

Governor's Office of Planning & Research
JUL 06 2017
AFTER 12 PM
STATE CLEARINGHOUSE

Local Action Type:

☐ General Plan Update ☐ General Plan Amendment ☐ General Plan Element ☐ Community Plan
☐ Specific Plan ☐ Master Plan ☐ Planned Unit Development ☑ Site Plan
☐ Rezone ☑ Prezone ☐ Use Permit ☑ Land Division (Subdivision, etc.)
☑ Annexation ☐ Redevelopment ☐ Coastal Permit ☐ Other

Development Type:

☑ Residential: Units 1,503 Acres
☐ Office: Sq.ft. Acres Employees
☑ Commercial: Sq.ft. Acres 10.5 Employees
☐ Industrial: Sq.ft. Acres Employees
☐ Educational
☑ Recreational parks, open space misc.
☐ Water Facilities: Type MGD
☑ Transportation: Type
☐ Mining: Mineral
☐ Power: Type MW
☐ Waste Treatment: Type MGD
☐ Hazardous Waste: Type
☐ Other:

Project Issues Discussed in Document:

☑ Aesthetic/Visual
☑ Agricultural Land
☑ Air Quality
☑ Archeological/Historical
☑ Biological Resources
☐ Coastal Zone
☑ Drainage/Absorption
☑ Economic/Jobs
☐ Fiscal
☑ Flood Plain/Flooding
☑ Forest Land/Fire Hazard
☑ Geologic/Seismic
☑ Minerals
☑ Noise
☑ Population/Housing Balance
☑ Public Services/Facilities
☑ Recreation/Parks
☑ Schools/Universities
☐ Septic Systems
☑ Sewer Capacity
☑ Soil Erosion/Compaction/Grading
☑ Solid Waste
☑ Toxic/Hazardous
☑ Traffic/Circulation
☑ Vegetation
☑ Water Quality
☑ Water Supply/Groundwater
☑ Wetland/Riparian
☑ Wildlife
☑ Growth Inducing
☑ Land Use
☑ Cumulative Effects
☑ Other Green House Gas Emissions

Present Land Use/Zoning/General Plan Designation:
General Plan: LDR, HDR, C, I (City), R/L, R/H, C/C, I/L, I/G (Co.); Zoning (Co.): I-G, I-L, AU

Project Description: *(please use a separate page if necessary)*
The Project includes up to 340 HDR units, up to 1,163 LDR units, up to 101,500 square feet of commercial, an existing 15.57 acre industrial area, establishment of a 14.7 acre K-8 school site, and associated park and utility improvements. The Project is requesting annexation of 341.17 acres of land into the Stockton city limits, and the subsequent development of 318.82 acres of land. The General Plan Amendment would include maintaining approximately 260.69 acres of LDR uses; maintaining approximately 15.57 acres of I uses; changing approximately 1.5 acres of LDR to C uses; changing approximately 1.03 acres of LDR to HDR uses; and changing 20.36 acres of LDR to OSA. Changes to the Circulation Element would include the removal of a bridge crossing over Bear Creek. Prezoning would include: RL, RH, IL, CG, and OS.

Note: The state Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

January 2008

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "X".
If you have already sent your document to the agency please denote that with an "S".

X Air Resources Board
___ Boating & Waterways, Department of
X California Highway Patrol
X Caltrans District # 10
___ Caltrans Division of Aeronautics
X Caltrans Planning (Headquarters)
___ Coachella Valley Mountains Conservancy
___ Coastal Commission
___ Colorado River Board
X Conservation, Department of
___ Corrections, Department of
X Delta Protection Commission
___ Education, Department of
___ Energy Commission
X Fish & Game Region # 2
X Food & Agriculture, Department of
___ Forestry & Fire Protection
___ General Services, Department of
___ Health Services, Department of
___ Housing & Community Development
___ Integrated Waste Management Board
X Native American Heritage Commission
X Office of Emergency Services
X Office of Historic Preservation
___ Office of Public School Construction
___ Parks & Recreation
___ Pesticide Regulation, Department of
___ Public Utilities Commission
___ Reclamation Board
X Regional WQCB # 5S
X Resources Agency
___ S.F. Bay Conservation & Development Commission
___ San Gabriel & Lower L.A. Rivers and Mtns Conservancy
X San Joaquin River Conservancy
___ Santa Monica Mountains Conservancy
___ State Lands Commission
___ SWRCB: Clean Water Grants
X SWRCB: Water Quality
___ SWRCB: Water Rights
___ Tahoe Regional Planning Agency
___ Toxic Substances Control, Department of
X Water Resources, Department of

___ Other ___
___ Other ___

Local Public Review Period (to be filled in by lead agency)

Starting Date July 7, 2017 Ending Date August 7, 2017

Lead Agency (Complete if applicable):

Consulting Firm: De Novo Planning Group
Address: 1020 Suncast Lane Suite 106
City/State/Zip: El Dorado Hills, CA 95762
Contact: Steve McMurtry
Phone: (916) 580-9818

Applicant: City of Stockton
Address: 345 N El Dorado St
City/State/Zip: Stockton, CA 95202
Phone: 530-902-9218

Signature of Lead Agency Representative: [signature] **Date:** 7/7/17

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

NOP Distribution List

CK

County: San Joaquin

SCH# 2016022061

Resources Agency

- [x] Resources Agency
  Nadell Gayou
- [ ] Dept. of Boating & Waterways
  Denise Peterson
- [ ] California Coastal Commission
  Elizabeth A. Fuchs
- [ ] Colorado River Board
  Lisa Johansen
- [x] Dept. of Conservation
  Crina Chan
- [ ] Cal Fire
  Dan Foster
- [x] Central Valley Flood Protection Board
  James Herota
- [ ] Office of Historic Preservation
  Ron Parsons
- [x] Dept of Parks & Recreation
  Environmental Stewardship Section
- [ ] S.F. Bay Conservation & Dev't. Comm.
  Steve Goldbeck
- [ ] Dept. of Water Resources
  Resources Agency
  Nadell Gayou

Fish and Game

- [ ] Depart. of Fish & Wildlife
  Scott Flint
  Environmental Services Division
- [ ] Fish & Wildlife Region 1
  Curt Babcock
- [ ] Fish & Wildlife Region 1E
  Laurie Harnsberger
- [x] Fish & Wildlife Region 2
  Jeff Drongesen
- [ ] Fish & Wildlife Region 3
  Craig Weightman
- [ ] Fish & Wildlife Region 4
  Julie Vance
- [ ] Fish & Wildlife Region 5
  Leslie Newton-Reed
  Habitat Conservation Program
- [ ] Fish & Wildlife Region 6
  Tiffany Ellis
  Habitat Conservation Program
- [ ] Fish & Wildlife Region 6 I/M
  Heidi Calvert
  Inyo/Mono, Habitat Conservation Program
- [ ] Dept. of Fish & Wildlife M
  William Paznokas
  Marine Region

Other Departments

- [ ] California Department of Education
  Lesley Taylor
- [x] OES (Office of Emergency Services)
  Monique Wilber
- [ ] Food & Agriculture
  Sandra Schubert
  Dept. of Food and Agriculture
- [ ] Dept. of General Services
  Cathy Buck
  Environmental Services Section
- [x] Housing & Comm. Dev.
  CEQA Coordinator
  Housing Policy Division

Independent Commissions,Boards

- [x] Delta Protection Commission
  Erik Vink
- [x] Delta Stewardship Council
  Kevan Samsam
- [ ] California Energy Commission
  Eric Knight
- [x] Native American Heritage Comm.
  Debbie Treadway
- [x] Public Utilities Commission
  Supervisor
- [ ] Santa Monica Bay Restoration
  Guangyu Wang
- [ ] State Lands Commission
  Jennifer Deleong
- [ ] Tahoe Regional Planning Agency (TRPA)
  Cherry Jacques

Cal State Transportation Agency CalSTA

- [x] Caltrans - Division of Aeronautics
  Philip Crimmins
- [ ] Caltrans – Planning HQ LD-IGR
  Christian Bushong
- [x] California Highway Patrol
  Suzann Ikeuchi
  Office of Special Projects

Dept. of Transportation

- [ ] Caltrans, District 1
  Rex Jackman
- [ ] Caltrans, District 2
  Marcelino Gonzalez
- [ ] Caltrans, District 3
  Eric Federicks – South
  Susan Zanchi - North
- [ ] Caltrans, District 4
  Patricia Maurice
- [ ] Caltrans, District 5
  Larry Newland
- [ ] Caltrans, District 6
  Michael Navarro
- [ ] Caltrans, District 7
  Dianna Watson
- [ ] Caltrans, District 8
  Mark Roberts
- [ ] Caltrans, District 9
  Gayle Rosander
- [x] Caltrans, District 10
  Tom Dumas
- [ ] Caltrans, District 11
  Jacob Armstrong
- [ ] Caltrans, District 12
  Maureen El Harake

Cal EPA

Air Resources Board

- [ ] Airport & Freight
  Jack Wursten
  - [ ] Transportation Projects
    Nesamani Kalandiyur
  - [ ] Industrial/Energy Projects
    Mike Tollstrup
- [ ] California Department of Resources, Recycling & Recovery
  Sue O'Leary
- [ ] State Water Resources Control Board
  Regional Programs Unit
  Division of Financial Assistance
- [ ] State Water Resources Control Board
  Cindy Forbes – Asst Deputy
  Division of Drinking Water
- [ ] State Water Resources Control Board
  Div. Drinking Water #_____
- [ ] State Water Resources Control Board
  Student Intern, 401 Water Quality Certification Unit
  Division of Water Quality
- [ ] State Water Resouces Control Board
  Phil Crader
  Division of Water Rights
- [ ] Dept. of Toxic Substances Control
  CEQA Tracking Center
- [ ] Department of Pesticide Regulation
  CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

- [ ] RWQCB 1
  Cathleen Hudson
  North Coast Region (1)
- [ ] RWQCB 2
  Environmental Document Coordinator
  San Francisco Bay Region (2)
- [ ] RWQCB 3
  Central Coast Region (3)
- [ ] RWQCB 4
  Teresa Rodgers
  Los Angeles Region (4)
- [x] RWQCB 5S
  Central Valley Region (5)
  - [ ] RWQCB 5F
    Central Valley Region (5)
    Fresno Branch Office
  - [ ] RWQCB 5R
    Central Valley Region (5)
    Redding Branch Office
- [ ] RWQCB 6
  Lahontan Region (6)
  - [ ] RWQCB 6V
    Lahontan Region (6)
    Victorville Branch Office
- [ ] RWQCB 7
  Colorado River Basin Region (7)
- [ ] RWQCB 8
  Santa Ana Region (8)
- [ ] RWQCB 9
  San Diego Region (9)

- [ ] Other _____
  _____
  _____
- [ ] _____
  Conservancy

Last Updated 4/28/17

SAN JOAQUIN COUNTY
Greatness grows here.

Public Works
Working for YOU

Department of Public Works

Kris Balaji, Director of Public Works

Fritz Buchman, *Deputy Director/Development*
Michael Selling, *Deputy Director/Engineering*
Jim Stone, *Deputy Director/Operations*
Najee Zarif, *Interim Business Administrator*

August 8, 2017

Brian Millar, Project Manager
City of Stockton
345 N. El Dorado Street
Stockton, CA 95202

SUBJECT: NOTICE PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE TRA VIGNE DEVELOPMENT PROJECT

Dear Mr. Millar,

The San Joaquin County Department of Public Works has reviewed the Notice of Preparation and Draft Environmental Impact Report for the above referenced project and our comments are as follows:

Road Maintenance

1. The City of Stockton needs to annex Eight Mile Road from the Union Pacific Railroad Tracks to West Lane and West Lane from Bear Creek to Eight Mile Road.

Transportation Engineering

1. The Site Plans in Figure 8a and 8c show a proposed signal at future Road C. Per the 1993 Specific Plan for Eight Mile Road, no signal is allowed between West Lane and Ham Lane. This either needs to be evaluated without a signal (right-in/right-out only) in the EIR, or the Eight Mile Specific Plan will need to be revised accordingly. Any other improvements to Eight Mile Road not specifically mentioned above shall conform to the Specific Plan.
2. All of West Lane, including the Bear Creek bridge, and all of Eight Mile Road adjacent to the proposed development must be annexed by the City of Stockton. No gap shall remain between the existing City limits and the Project's acquisition.
3. The EIR shall fully analyze the impacts (and potential contribution) of this project to the SR 99/March Lane interchange, development of which is currently on hold by the City of Stockton.
4. Figure 8c appears to show the full build-out of 8 Mile Road per the specific plan (with the exception of the signal at Road C as previously noted). This would require the acquisition of ROW for County properties to the North of 8 Mile Road. The EIR needs to clearly document what improvements will be required at what time, and who will be responsible for any ROW acquisition beyond the boundaries of the Project.

The County does request to be included on the circulation list for any additional project documents.

Thank you for the opportunity to review and comment. Should you have questions please contact me at atmcginnis@sjgov.org or (209) 468-3085.

Sincerely,

ASHLEN MCGINNIS
Environmental Coordinator

AM:as
c: Firoz Vohra, Senior Engineer
Troy Botts, Maintenance Superintendent

SAN JOAQUIN COUNCIL OF GOVERNMENTS

555 E. Weber Avenue • Stockton, California 95202 • P 209.235.0600 • F 209.235.0438 • www.sjcog.org

San Joaquin County Airport Land Use Commission/Congestion Management Agency

Katherine Miller
CHAIR
Robert Rickman
VICE CHAIR
Andrew T. Chesley
EXECUTIVE DIRECTOR
Member Agencies
CITIES OF
ESCALON,
LATHROP,
LODI,
MANTECA,
RIPON,
STOCKTON,
TRACY,
AND
THE COUNTY OF SAN
JOAQUIN

July 22, 2017

Brian Millar
Planning and Engineering Division
345 North El Dorado Street
Stockton CA 95202

Re: Tra Vigne Development Project (Deadline: 8/7/17)

Dear Brian Millar,

The San Joaquin Council of Governments (SJCOG), acting as the Airport Land Use Commission (ALUC) and Congestion Management Agency (CMA), has reviewed a Notice Of Preparation for a Draft Environmental Impact Report for project that accommodates up to 1,163 single-family residential units, up to 340 high density residential units, up to 101,500 square feet of commercial uses, up to 20.36 acres of non-traditional park area, up to 5.07 acres of traditional park area, 14.7-acre K-8 school, and expansion of the existing vehicular/non-vehicular circulation system at southeast corner of West Lane and Eight Mile Road, Stockton (APN: 120-02-13 & 14).

CONGESTION MANAGEMENT AGENCY'S REVIEW

SJCOG adopted the 2016 Update to the Regional Congestion Management Program (RCMP) (http://www.sjcog-rcmp.org/ literature 231152/2016 RCMP Update Adopted Report) on March 24, 2016). Chapter 6 of the RCMP describes the updated Land Use Analysis Program, including Tier 1 and Tier 2 review/analysis requirements, analysis methods, impact significance criteria, and mitigation.

A map showing the project's relationship to the RCMP network is attached (Attachment A) and RCMP significance threshold criteria and potential mitigation measures can be found in sections 6.3 & 6.4 of the 2016 RCMP.

As stipulated within the RCMP Project Review Criteria in Chapter 6 of the 2016 RCMP, the project is required to show consistency with all applicable regional transportation planning documents, such as:

- Regional Transportation Demand Management Plan

- Park-and-Ride Master Plan
- Regional Bicycle, Pedestrian, and Safe Routes to School Master Plan
- Regional Smart Growth Transit Oriented Development Plan
- Regional Transit Systems Plan
- Regional Transportation Impact Fee Program
- 2014 Regional Transportation Plan/Sustainable Communities Strategy
- Interregional STAA Study for I-5 and SR-99

SJCOG staff is available to assist with project specific guidance and narrowing the scope of the relevant regional plans that need to be included. Additionally, SJCOG has completed updating the RCMP including traffic count data of all the segments and intersections on the CMP network. SJCOG would be pleased to provide this data to the City and its consultants to assist in the traffic analysis for this project.

AIRPORT LAND USE COMMISION'S REVIEW

This project is not located within an Airport's influence area; thus, no further action is required.

SJCOG would like to provide standards and project design conditions that comply with the Airport Land Use Compatibility Plan as a reference guide.

1. New land uses that may cause visual, electronic, or increased bird strike hazards to aircraft in flight shall not be permitted within any airport's influence area. Specific characteristics to be avoided include:
    a. Glare or distracting lights which could be mistaken for airport lights. Reflective materials are not permitted to be used in structures or signs (excluding traffic directing signs).
    b. Sources of dust, steam, or smoke which may impair pilot visibility.
    c. Sources of electrical interference with aircraft communications or navigation. No transmissions which would interfere with aircraft radio communications or navigational signals are permitted.
    d. Occupied structures must be soundproofed to reduce interior noise to 45 decibel(dB) according to State guidelines.
    e. Within the airport's influence area, ALUC review is required for any proposed object taller than 100 feet above ground level (AGL).
2. Regardless of location within San Joaquin County, ALUC review is required in addition to Federal Aviation Administration (FAA) notification in accordance with Code of Federal Regulations, Part 77, (https://oeaaa.faa.gov/oeaaa/external/portal.jsp) for any proposal for construction or alteration under the following conditions:

    a. If requested by the FAA.
    b. Any construction or alteration that is more than 200 ft. AGL at its site.
    c. Any construction or alteration that exceeds an imaginary surface extending outward and upward at any of the following slopes:
    d. 100 to 1 for a horizontal distance of 20,000 ft. of a public use or military airport from any point on the runway of each airport with its longest runway more than 3,200 ft.
    e. 50 to 1 for a horizontal distance of 10,000 ft. of a public use or military airport from any point on the runway of each airport with its longest runway no more than 3,200 ft.
    f. 25 to 1 for a horizontal distance of 5,000 ft. of the nearest take off and landing area of a

public use heliport

g. Any highway, railroad or other traverse way whose prescribed adjusted height would exceed the above noted standards
h. Any construction or alteration located on a public use airport or heliport regardless of height or location.

Thank you again for the opportunity to comment. Please contact CMA and ALUC staff Travis Yokoyama (209-235-0451 or yokoyama@sjcog.org) if you have any questions or comments.

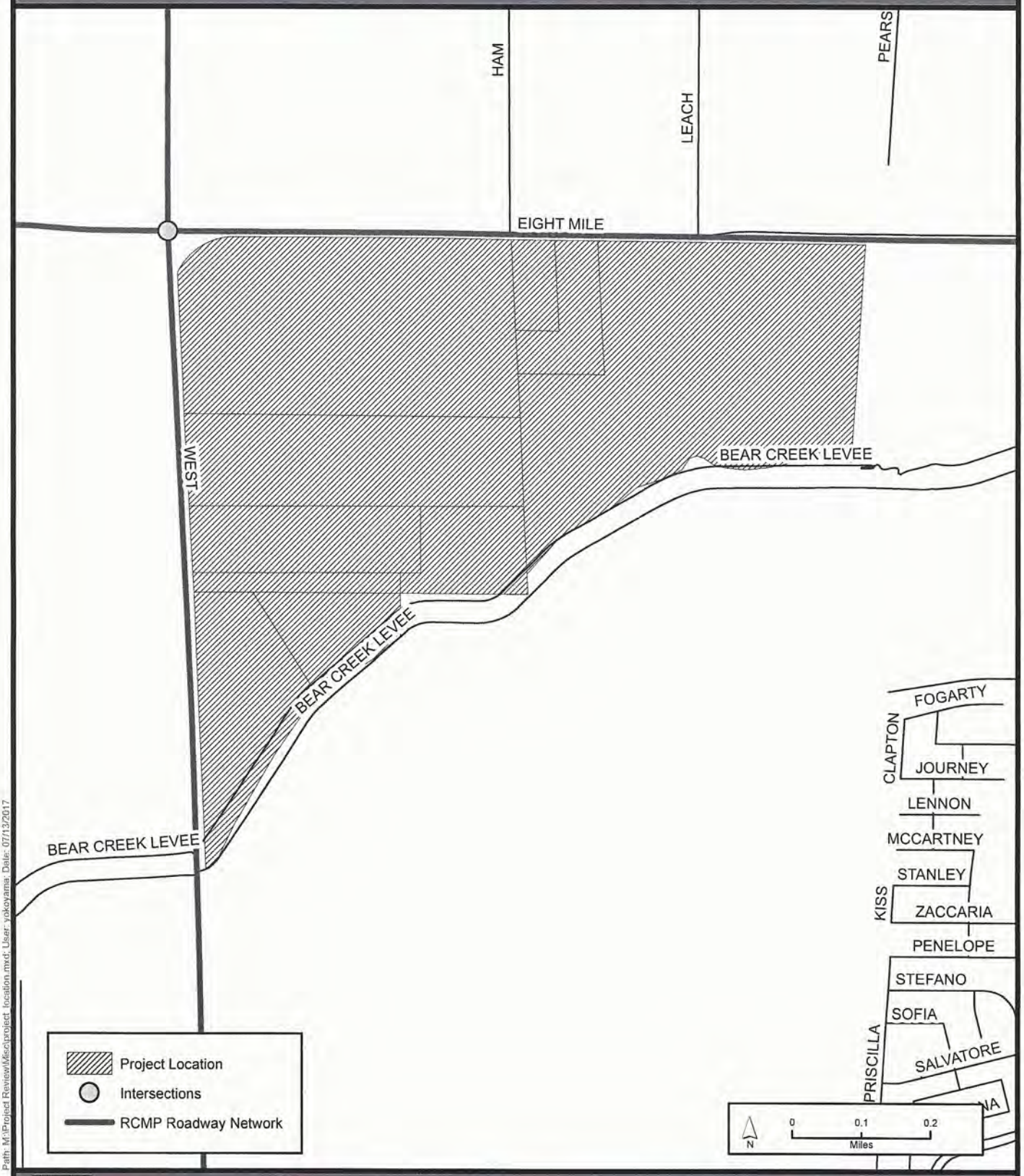
Sincerely,

Travis Yokoyama

Travis Yokoyama

ATTACHMENT A – Exhibit of Project Site Location in relation to RCMP Network

Tra Vigne Development Project
Location: Southeast corner of Eight Mile Road and West Lane



Path: M:\Project Review\Misc\project_location.mxd; User: yokoyama; Date: 07/13/2017

REGIONAL CONGESTION MANAGEMENT PROGRAM

Appendix B

Annexation Legal Description

EXHIBIT "A"

LEGAL DESCRIPTION

ALL that certain real property, situate in and being a portion of the Northwest quarter of Section 2, Township 2 North, Range 6 East, Mount Diablo Meridian, County of San Joaquin, State of California, being more particularly described as follows:

BEGINNING at a point, which is 139.00 feet distant at right angles from the West line of said Northwest quarter and 84.00 feet distant at right angles from the North line of said Northwest quarter, and from which point the Northwest corner of said Section 2, marked with a 2" brass disc, stamped "SJCO LS 2239" bears North 59°26'26" West 166.87 feet;
thence parallel with said North line South 89°39'55" East 293.78 feet;
thence North 82°20'20" East 86.27 feet to a point which is 72.00 feet distant at right angles from said North line;
thence parallel with said North line South 89°39'55" East 296.29 feet;
thence South 78°21'20" East 61.19 feet to a point which is 84.00 feet distant at right angles from said North line;
thence parallel with said North line South 89°39'55" East 119.91 feet;
thence South 44°52'34" East 21.27 feet;
thence South 00°05'12" East 107.92 feet;
thence South 21°53'17" East 96.93 feet;
thence South 00°05'12" East 298.86 feet;
thence South 89°54'48" West 879.67 feet;
thence North 03°03'22" West 83.37 feet to a point which is 139.00 feet distant at right angles from aforementioned West line;
thence parallel with said West line North 03°01'59" West 435.48 feet to the Point of Beginning.

Containing 457,991 square feet (10.51 acres), more or less.

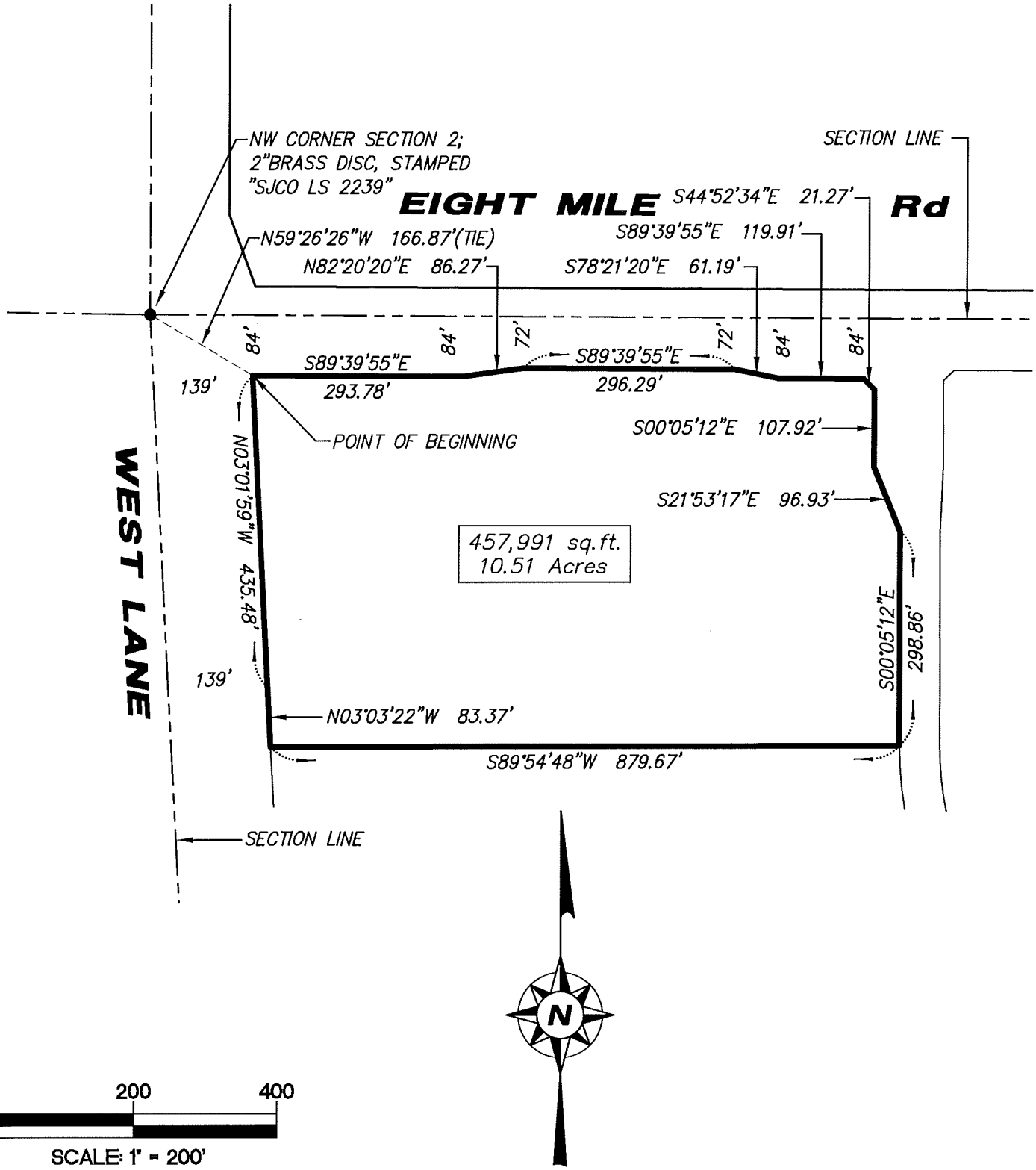
A grid bearing of North 72°20'31" East between found City of Stockton Monuments "4N-8" and "9N-18" was used as a basis for all bearings. Distances shown are ground distances.

PROFESSIONAL LAND SURVEYOR
RIEN GROENEWOUD
No. 6946
STATE OF CALIFORNIA

R. Groenewoud

Rien Groenewoud, P.L.S. 6946

4/4/17



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PLAT TO ACCOMPANY LEGAL DESCRIPTION

EXHIBIT 'B'

OF A PORTION OF THE NW 1/4 OF SEC. 2,
T. 2 N., R. 6 E., M.D.M.

SAN JOAQUIN COUNTY CALIFORNIA

JOB:	J15-1532
DATE:	04/04/17
SCALE:	1"=200'
DRAWN:	RG
DESIGN:	RG
CHK'D:	RG

SHEET 01 OF 01

DWG NAME: K:\J15-1532 Bear Creek East Specific Plan\dwg\Mapping\Exhibits\J15-1532 Commercial Site Exhibit.dwg

---

Parcel name: COMMERCIAL PARCEL

North: 2208401.3933 East : 6332501.7555

Line Course: S 89-39-55 E Length: 293.78
North: 2208399.6771 East : 6332795.5305

Line Course: N 82-20-20 E Length: 86.27
North: 2208411.1780 East : 6332881.0305

Line Course: S 89-39-55 E Length: 296.29
North: 2208409.4471 East : 6333177.3154

Line Course: S 78-21-20 E Length: 61.19
North: 2208397.0967 East : 6333237.2461

Line Course: S 89-39-55 E Length: 119.91
North: 2208396.3962 East : 6333357.1540

Line Course: S 44-52-34 E Length: 21.27
North: 2208381.3235 East : 6333372.1616

Line Course: S 00-05-12 E Length: 107.92
North: 2208273.4036 East : 6333372.3249

Line Course: S 21-53-17 E Length: 96.93
North: 2208183.4609 East : 6333408.4598

Line Course: S 00-05-12 E Length: 298.86
North: 2207884.6013 East : 6333408.9119

Line Course: S 89-54-48 W Length: 879.67
North: 2207883.2707 East : 6332529.2429

Line Course: N 03-03-22 W Length: 83.37
North: 2207966.5221 East : 6332524.7981

Line Course: N 03-01-59 W Length: 435.48
North: 2208401.3921 East : 6332501.7560

Perimeter: 2780.93 Area: 457,991 sq. ft. 10.51 acres

Mapcheck Closure - (Uses listed courses, radii, and deltas)
Error Closure: 0.0013 Course: S 18-06-14 E
Error North: -0.00126 East : 0.00041
Precision 1: 2,139,184.62

EXHIBIT "A"

LEGAL DESCRIPTION

ALL that certain real property, situate in and being a portion of the Northwest quarter of Section 2, Township 2 North, Range 6 East, Mount Diablo Meridian, County of San Joaquin, State of California, being more particularly described as follows:

COMMENCING at the Northwest corner of said Section 2, said corner being marked with a 2" brass disc, stamped "SJCO LS 2239";
thence along the North line of said Section 2 South 89°39'55" East 2164.07 feet; thence South 00°20'05" West 72.00 feet to the TRUE POINT OF BEGINNING;
thence South 02°45'07" East 464.81 feet;
thence South 89°54'48" West 702.66 feet;
thence South 84°57'42" West 57.14 feet;
thence South 80°37'07" West 57.12 feet;
thence South 76°44'01" West 52.80 feet;
thence South 76°19'58" West 50.00 feet;
thence South 77°00'27" West 49.18 feet;
thence South 87°27'16" West 48.45 feet;
thence South 89°54'48" West 66.85 feet;
thence North 00°05'12" West 298.86 feet;
thence North 02°27'29" East 90.09 feet;
thence North 00°05'12" West 120.00 feet;
thence North 45°07'26" East 20.00 feet to a point, which is 72.00 feet distant at right angles from said North line;
thence parallel with said North line South 89°39'55" East 1039.38 feet to the Point of Beginning.

Containing 510,524 square feet (11.72 acres), more or less.

A grid bearing of North 72°20'31" East between found City of Stockton Monuments "4N-8" and "9N-18" was used as a basis for all bearings. Distances shown are ground distances.

This legal description as described is delineated on the accompanying "Plat to Accompany Legal Description" and made a part hereof for reference purposes.

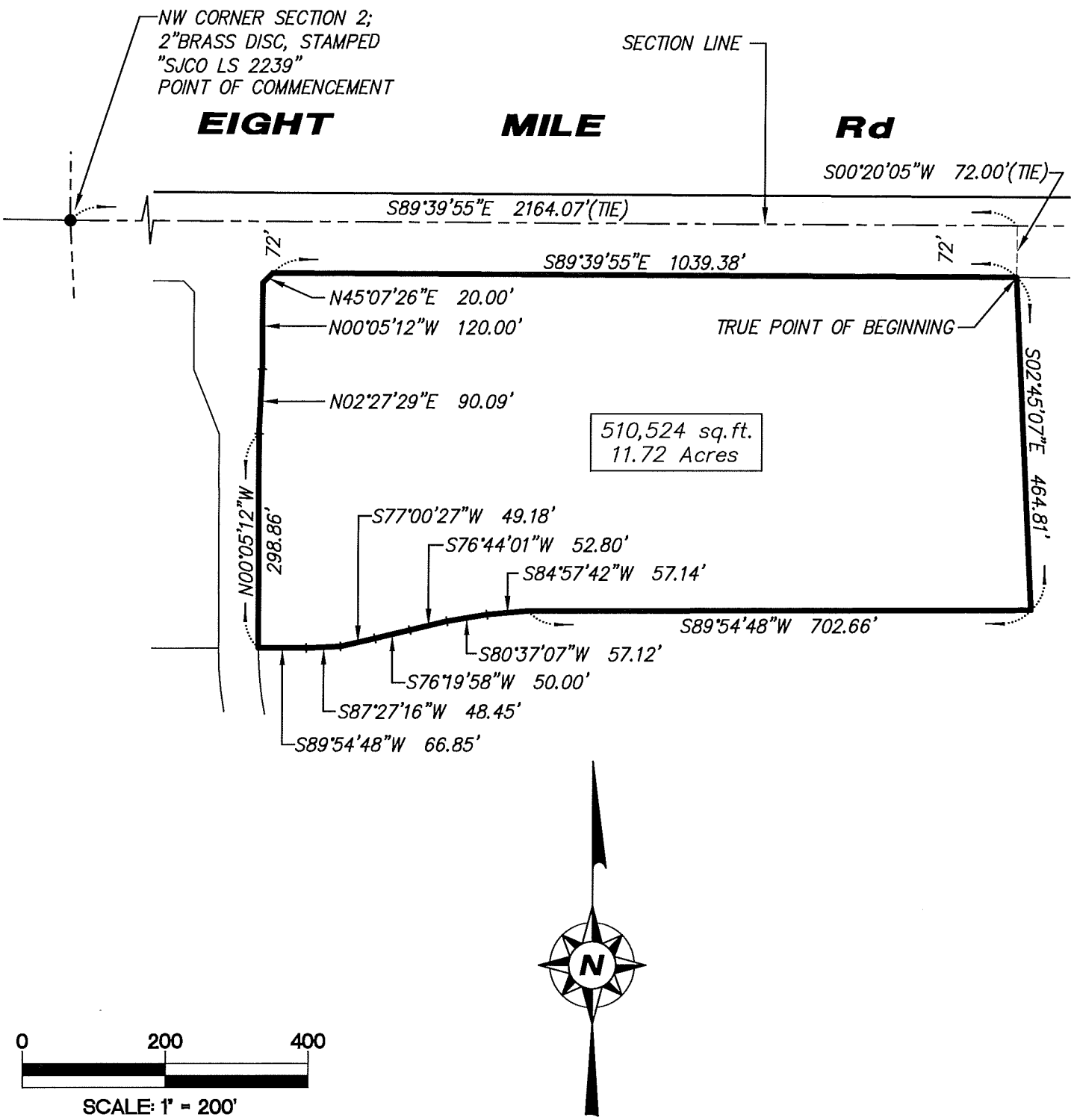
This legal description was prepared as a convenience only and is not intended for use in the division and/or conveyance of land in violation of the Subdivision Map Act of the State of California.

PROFESSIONAL LAND SURVEYOR
RIEN GROENEWOUD
No. 6946
STATE OF CALIFORNIA

R. Groenewoud

Rien Groenewoud, P.L.S. 6946

4/4/17



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PLAT TO ACCOMPANY LEGAL DESCRIPTION

EXHIBIT 'B'

OF A PORTION OF THE NW 1/4 OF SEC. 2, T. 2 N., R. 6 E., M.D.M.

SAN JOAQUIN COUNTY CALIFORNIA

JOB:	J15-1532
DATE:	04/04/17
SCALE:	1"=200'
DRAWN:	RG
DESIGN:	RG
CHK'D:	RG

SHEET 01 OF 01

DWG NAME: K:\J15-1532 Bear Creek East Specific Plan\dwg\Mapping\Exhibits\J15-1532 HDR Site Exhibit.dwg PLOTTED: 04/4/17 10:14

Parcel name: HDR PARCEL

```
   North: 2208401.5973        East : 6334521.6756
Line  Course: S 02-45-07 E  Length: 464.81
        North: 2207937.3234          East : 6334543.9921
Line  Course: S 89-54-48 W  Length: 702.66
        North: 2207936.2605          East : 6333841.3329
Line  Course: S 84-57-42 W  Length: 57.14
        North: 2207931.2424          East : 6333784.4137
Line  Course: S 80-37-07 W  Length: 57.12
        North: 2207921.9315          East : 6333728.0577
Line  Course: S 76-44-01 W  Length: 52.80
        North: 2207909.8150          East : 6333676.6667
Line  Course: S 76-19-58 W  Length: 50.00
        North: 2207898.0009          East : 6333628.0825
Line  Course: S 77-00-27 W  Length: 49.18
        North: 2207886.9441          East : 6333580.1615
Line  Course: S 87-27-16 W  Length: 48.45
        North: 2207884.7922          East : 6333531.7593
Line  Course: S 89-54-48 W  Length: 66.85
        North: 2207884.6911          East : 6333464.9094
Line  Course: N 00-05-12 W  Length: 298.86
        North: 2208183.5508          East : 6333464.4573
Line  Course: N 02-27-29 E  Length: 90.09
        North: 2208273.5579          East : 6333468.3211
Line  Course: N 00-05-12 W  Length: 120.00
        North: 2208393.5577          East : 6333468.1396
Line  Course: N 45-07-26 E  Length: 20.00
        North: 2208407.6693          East : 6333482.3123
Line  Course: S 89-39-55 E  Length: 1039.38
        North: 2208401.5972          East : 6334521.6746

   Perimeter: 3117.34   Area: 510,524 sq. ft. 11.72 acres

Mapcheck Closure - (Uses listed courses, radii, and deltas)
Error Closure: 0.0011               Course: S 84-16-54 W
  Error North: -0.00011              East : -0.00109
Precision  1: 2,833,945.45
```

EXHIBIT "A"

LEGAL DESCRIPTION

TRA VIGNE ANNEXATION
TO THE CITY OF STOCKTON,
SAN JOAQUIN COUNTY, CALIFORNIA

ALL that certain real property, being portions of Sections 1, and 2, Township 2 North, Range 6 East, and Sections 35 and 36, Township 3 North, Range 6 East, Mount Diablo Meridian, County of San Joaquin, State of California, being more particularly described as follows:

BEGINNING at a point on the North line of said Section 1, said Point of Beginning being 50.00 feet distant at right angles from the original located center of Southern Pacific Company's main track and being a point on the existing City Limits line of the City of Stockton, also said Point of Beginning bears South 89°29'52" East, 202.56 feet from the Northeast corner of said Section 2;

1. thence along said existing City Limits line, South 03°44'48" West, a distance of 1740.17 feet;
2. thence leaving said existing City Limits line and proceeding North 86°15'12" West, a distance of 150.00 feet to a point on the existing thread of Bear Creek, last said point being 200.00 feet distant at right angles from said original located center of Southern Pacific Company's main track;
3. thence along said thread of Bear Creek the following fifteen (15) courses:
   North 60°51'12" West, a distance of 146.89 feet
4. North 88°27'12" West, a distance of 86.78 feet;
5. South 63°07'48" West, a distance of 297.56 feet;
6. South 78°46'48" West, a distance of 173.60 feet;
7. North 87°07'12" West, a distance of 285.17 feet;
8. North 73°04'12" West, a distance of 153.97 feet;
9. North 49°51'12" West, a distance of 187.36 feet;
10. North 66°43'12" West, a distance of 73.31 feet;
11. South 76°50'48" West, a distance of 74.27 feet;
12. South 34°25'48" West, a distance of 231.07 feet;
13. South 61°59'48" West, a distance of 227.52 feet;
14. South 37°28'48" West, a distance of 328.76 feet;
15. South 62°58'48" West, a distance of 272.00 feet;
16. South 57°28'48" West, a distance of 201.25 feet;
17. South 43°19'48" West, a distance of 225.40 feet to a point on the North-South centerline of said Section 2;
18. thence leaving said thread and proceeding along said North-South centerline, South 02°45'07" East, a distance of 97.52 feet to the center ¼ corner of said Section 2;
19. thence continuing along said North-South centerline, South 02°45'07" East, a distance of 70.77 feet to a point on the Southeasterly boundary of that certain property described in a Quitclaim Deed dated September 27, 1983, as Instrument Number 83070793, San Joaquin County Records;
20. thence along said Southeasterly boundary the following twelve (12) courses:

South 64°49'23" West, a distance of 303.19 feet;

21. South 85°34'23" West, a distance of 150.00 feet;
22. North 71°40'37" West, a distance of 300.00 feet;
23. South 87°19'23" West, a distance of 75.00 feet;
24. South 40°24'23" West, a distance of 300.00 feet;
25. South 47°49'23" West, a distance of 175.00 feet;
26. South 58°04'23" West, a distance of 600.00 feet;
27. South 34°54'23" West, a distance of 560.00 feet;
28. South 29°59'23" West, a distance of 600.00 feet;
29. South 25°34'23" West, a distance of 300.00 feet;
30. South 45°04'23" West, a distance of 100.00 feet;
31. South 58°04'23" West, a distance of 22.25 feet to a point on the Easterly right-of-way line of West Lane;
32. thence South 86°59'05" West, a distance of 89.89 feet to a point on the West line of said Section 2;
33. thence along last said West line, North 03°00'55" West, a distance of 2119.26 feet to the West ¼ corner of said Section 2;
34. thence continuing along said West line of Section 2, parallel and 110.00 feet distant at right angles from said Easterly right-of-way line, North 03°01'59" West, a distance of 2751.29 feet to the Northwest corner of said Section 2;
35. thence along the West line of said Section 35, North 00°00'59" East, a distance of 40.00 feet to a point on the North line of Eight Mile Road (80 feet wide);
36. thence along said North right-of-way line the following three (3) courses:
    South 89°39'55" East, a distance of 2669.37 feet;
37. South 89°00'51" East, a distance of 2651.72 feet;
38. South 89°29'52" East, a distance of 204.66 feet to a point which is 50.00 feet distant at right angles from aforesaid original located center of Southern Pacific Company's main track, being also a point on aforesaid existing City Limits line of the City of Stockton;
39. thence along said existing City Limits line, South 03°44'48" West, a distance of 40.06 feet to the Point of Beginning.

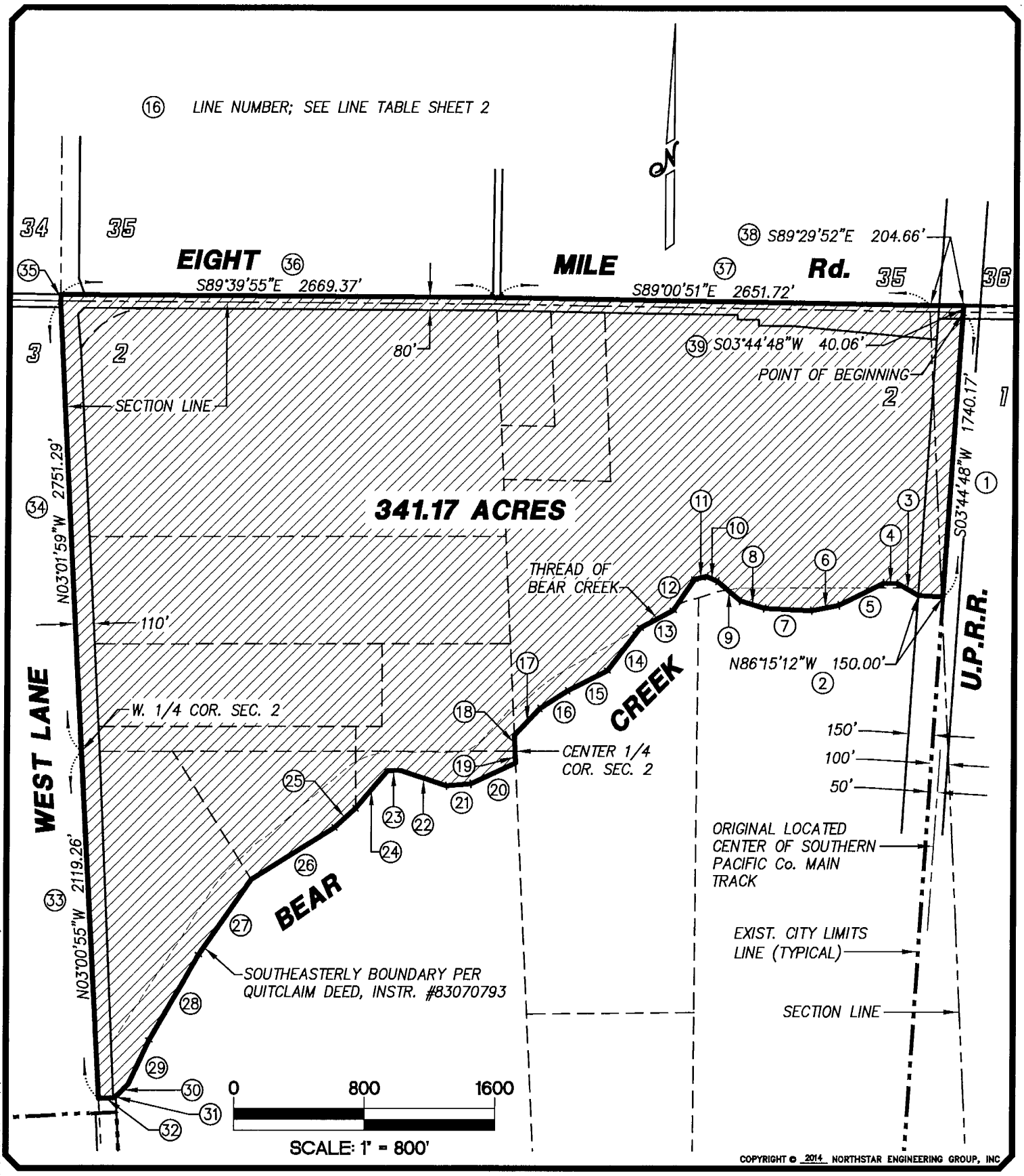
Containing 341.17 acres, more or less.

A grid bearing of North 72°20'31" East between found City of Stockton Monuments "4N-8" and "9N-18" was used as a basis for all bearings.

PROFESSIONAL LAND SURVEYOR
RIEN GROENEWOUD
No. 6946
STATE OF CALIFORNIA

5/4/16

Rien Groenewoud, P.L.S. 6946



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TRA VIGNE
ANNEXATION to the CITY of STOCKTON
EXHIBIT "B"

STOCKTON SAN JOAQUIN Cnty CALIFORNIA

JOB:	J15-1532
DATE:	05/03/16
SCALE:	1"=800'
DRAWN:	RG
DESIGN:	RG
CHK'D:	RG
SHEET	01 OF 02

DWG NAME: K:\J15-1532 Bear Creek East Specific Plan\dwg\Mapping\Exhibits\J15-1532 Bear Creek East Annex Exhibit.dwg

THREAD OF BEAR CREEK		
LINE TABLE		
LINE #	BEARING	LENGTH
3	N 60°51'12" W	146.89'
4	N 88°27'12" W	86.78'
5	S 63°07'48" W	297.56'
6	S 78°46'48" W	173.60'
7	N 87°07'12" W	285.17'
8	N 73°04'12" W	153.97'
9	N 49°51'12" W	187.36'
10	N 66°43'12" W	73.31'
11	S 76°50'48" W	74.27'
12	S 34°25'48" W	231.07'
13	S 61°59'48" W	227.52'
14	S 37°28'48" W	328.76'
15	S 62°58'48" W	272.00'
16	S 57°28'48" W	201.25'
17	S 43°19'48" W	225.40'

LINE TABLE		
LINE #	BEARING	LENGTH
18	S 02°45'07" E	97.52'
19	S 02°45'07" E	70.77'

SOUTHEASTERLY BOUNDARY PER QUITCLAIM DEED, INSTR. #83070793		
LINE TABLE		
LINE #	BEARING	LENGTH
20	S 64°49'23" W	303.19'
21	S 85°34'23" W	150.00'
22	N 71°40'37" W	300.00'
23	S 87°19'23" W	75.00'
24	S 40°24'23" W	300.00'
25	S 47°49'23" W	175.00'
26	S 58°04'23" W	600.00'
27	S 34°54'23" W	560.00'
28	S 29°59'23" W	600.00'
29	S 25°34'23" W	300.00'
30	S 45°04'23" W	100.00'
31	S 58°04'23" W	22.25'
32	S 86°59'05" W	89.89'

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620 12th Street Modesto, CA 95354
(209) 524-3525 Phone (209) 524-3526 Fax

TRA VIGNE
ANNEXATION to the CITY of STOCKTON

EXHIBIT "B"

STOCKTON SAN JOAQUIN Cnty CALIFORNIA

JOB:	J15-1532
DATE:	05/03/16
SCALE:	1"=800'
DRAWN:	RG
DESIGN:	RG
CHK'D:	RG

SHEET 02 OF 02

DWG NAME: K:\J15-1532 Bear Creek East Specific Plan\dwg\Map\Bear Creek East Annex Exhibit.dwg

EXHIBIT "A"

LEGAL DESCRIPTION

BRAGG INVESTMENT COMPANY, INC. ANNEXATION TO THE CITY OF STOCKTON, SAN JOAQUIN COUNTY, CALIFORNIA

ALL that certain real property, being portions of Section 2, Township 2 North, Range 6 East, and Section 35, Township 3 North, Range 6 East, Mount Diablo Meridian, County of San Joaquin, State of California, being more particularly described as follows:

BEGINNING at a point on the North right-of-way line of Eight Mile Road (80 feet wide), from which the common quarter corner of said Sections 35 and 2 bears South 84°07'33" West 334.88 feet;

1. thence along said North right-of-way line South 89°00'51" East, a distance of 329.84 feet;

2. thence leaving said North right-of-way line and proceeding South 00°59'09" West, a distance of 80.00 feet to a point on the South right-of-way line of said Eight Mile Road (80 feet wide), last said point being also the Northeast corner of Parcel "A", as shown on a certain map, filed for record on December 20, 1978 in Book 7 of Parcel Maps, at Page 18, San Joaquin County Records;

3. thence leaving said South right-of-way line and proceeding along the East line of said Parcel "A", South 02°28'08" East, a distance of 1030.09 feet to the Southeast corner of said Parcel "A";

4. thence along the South line of said Parcel "A", North 89°00'45" West, a distance of 654.61 feet to the Southwest corner of said Parcel "A", said Southwest corner being also a point on the North-South centerline of said Section 2;

thence along the West line of said Parcel "A" the following three (3) courses:

5. along said North-South centerline, North 02°45'07" West, a distance of 329.83 feet;

6. thence leaving said North-South centerline and proceeding South 89°02'57" East, a distance of 325.89 feet;

7. thence North 02°25'40" West, a distance of 700.11 feet to the Northwest corner of said Parcel "A", last said corner being also a point on said South right-of-way line;

8. thence North 00°59'09" East, a distance of 80.00 feet to the Point of Beginning.

Containing 10.86 acres, more or less.

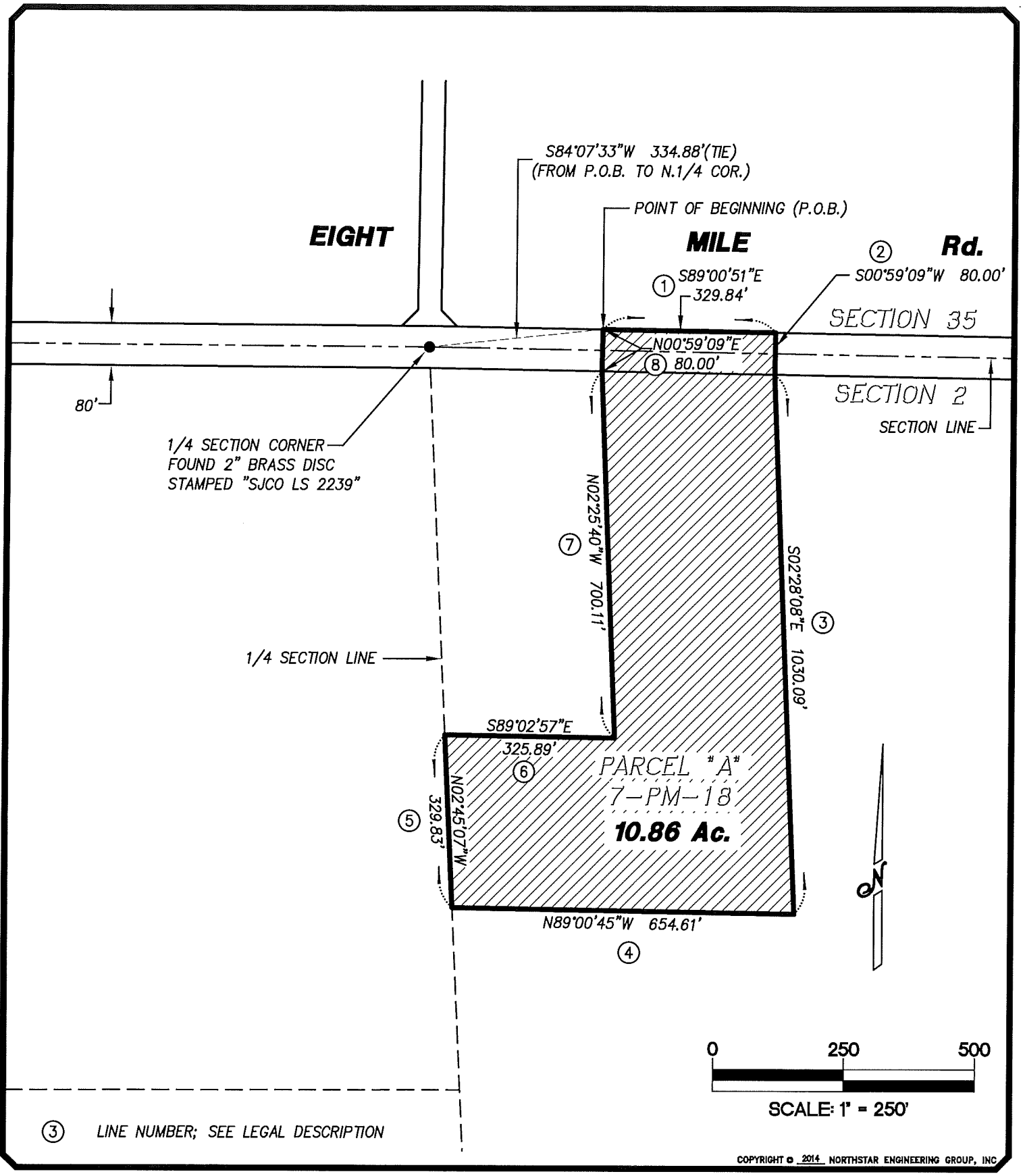
A grid bearing of North 72°20'31" East between found City of Stockton Monuments "4N-8" and "9N-18" was used as a basis for all bearings.

PROFESSIONAL LAND SURVEYOR
RIEN GROENEWOUD
No. 6946
STATE OF CALIFORNIA

5/26/16

R. Groenewoud

Rien Groenewoud, P.L.S. 6946



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620 12th Street Modesto, CA 95354
(209) 524-3525 Phone (209) 524-3526 Fax

BRAGG INVESTMENT Co., Inc. PARCEL ANNEXATION to the CITY of STOCKTON

EXHIBIT "B"

STOCKTON SAN JOAQUIN Cnty CALIFORNIA

JOB:	J15-1532
DATE:	05/26/16
SCALE:	1"=250'
DRAWN:	RG
DESIGN:	RG
CHK'D:	RG
SHEET	01 OF 01

DWG NAME: K:\J15-1532 Bear Creek East Specific Plan\dwg\Mapping\Exhibits\J15-1532 Bragg LAFCO Annex Exhibit.dwg PLOTTED: 05/26/16 09:53

Parcel name: LAFCO Bragg Annex

```
   North: 2208504.9209        East : 6335360.0648
Line  Course: S 89-00-51 E  Length: 329.84
        North: 2208499.2460          East : 6335689.8560
Line  Course: S 00-59-09 W  Length: 80.00
        North: 2208419.2578          East : 6335688.4796
Line  Course: S 02-28-08 E  Length: 1030.09
        North: 2207390.1240          East : 6335732.8527
Line  Course: N 89-00-45 W  Length: 654.61
        North: 2207401.4057          East : 6335078.3399
Line  Course: N 02-45-07 W  Length: 329.83
        North: 2207730.8553          East : 6335062.5041
Line  Course: S 89-02-57 E  Length: 325.89
        North: 2207725.4474          East : 6335388.3492
Line  Course: N 02-25-40 W  Length: 700.11
        North: 2208424.9290          East : 6335358.6925
Line  Course: N 00-59-09 E  Length: 80.00
        North: 2208504.9171          East : 6335360.0689

   Perimeter: 3530.38   Area: 472,905 sq. ft. 10.86 acres

Mapcheck Closure - (Uses listed courses, radii, and deltas)
Error Closure: 0.0056               Course: S 47-21-42 E
  Error North: -0.00380              East : 0.00412
Precision  1: 630,423.21
```

EXHIBIT "A"

LEGAL DESCRIPTION

PACIFIC BELL ANNEXATION
TO THE CITY OF STOCKTON,
SAN JOAQUIN COUNTY, CALIFORNIA

ALL that certain real property, being portions of Section 2, Township 2 North, Range 6 East, and Section 35, Township 3 North, Range 6 East, Mount Diablo Meridian, County of San Joaquin, State of California, being more particularly described as follows:

BEGINNING at a point on the North right-of-way line of Eight Mile Road (80 feet wide), from which the common quarter corner of said Sections 35 and 2 bears South 04°43'26" West 40.09 feet;

1. thence along said North right-of-way line South 89°00'51" East, a distance of 329.87 feet;
2. thence leaving said North right-of-way line and proceeding South 00°59'09" West, a distance of 80.00 feet to a point on the South right-of-way line of said Eight Mile Road (80 feet wide), last said point being also the Northeast corner of Parcel "A", as shown on a certain map, filed for record on June 1st, 1977 in Book 4 of Parcel Maps, at Page 126, San Joaquin County Records;
3. thence leaving said South right-of-way line and proceeding along the East line of said Parcel "A", South 02°25'40" East, a distance of 700.11 feet to the Southeast corner of said Parcel "A";
4. thence along the South line of said Parcel "A", North 89°02'57" West, a distance of 325.89 feet to the Southwest corner of said Parcel "A", said Southwest corner being also a point on the North-South centerline of said Section 2;
5. thence along the West line of said Parcel "A" and said North-South centerline, North 02°45'07" West, a distance of 700.56 feet to the Northwest corner of said Parcel "A", last said corner being also a point on said South right-of-way line;
6. thence North 00°59'09" East, a distance of 80.00 feet to the Point of Beginning.

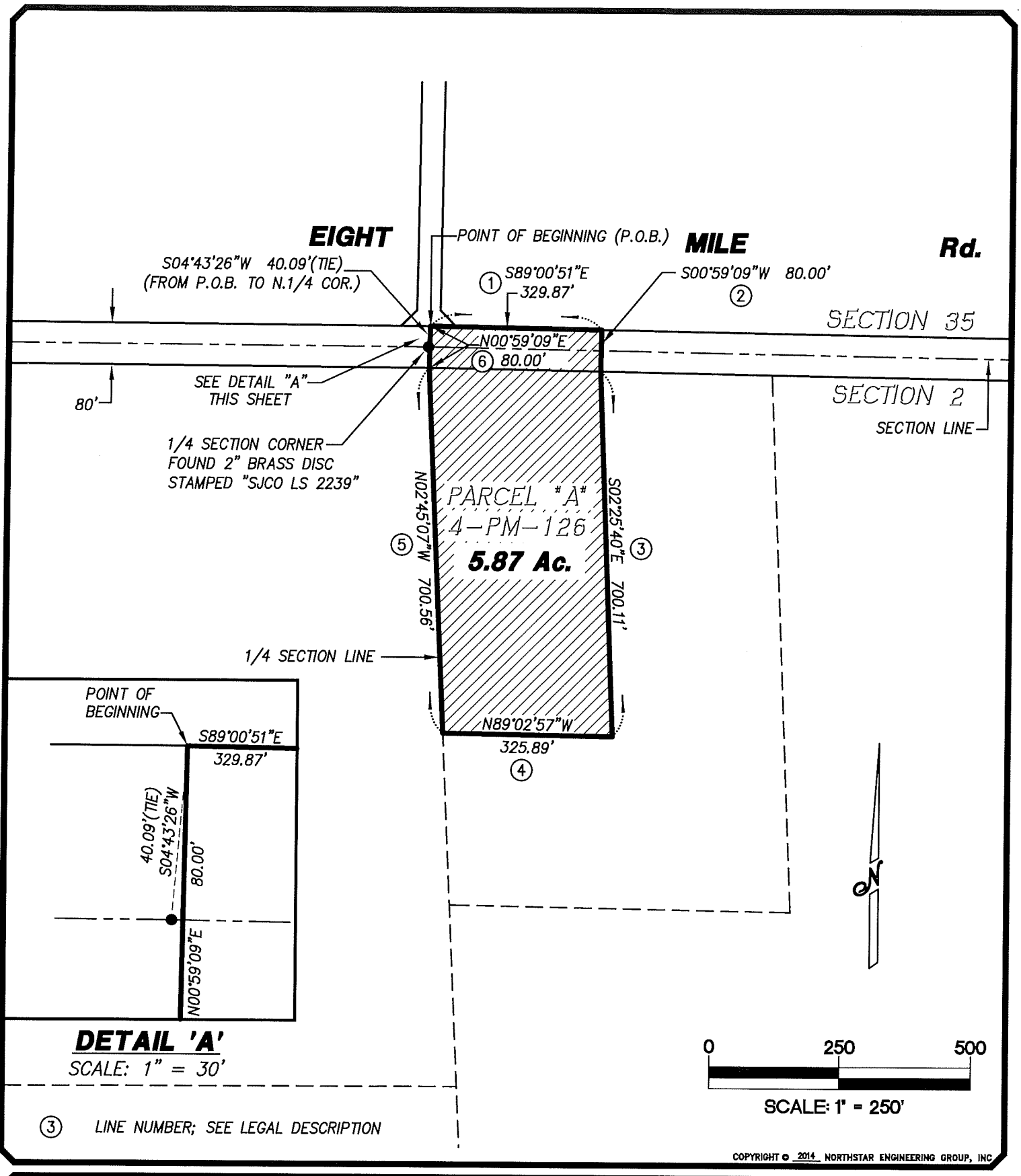
Containing 5.87 acres, more or less.

A grid bearing of North 72°20'31" East between found City of Stockton Monuments "4N-8" and "9N-18" was used as a basis for all bearings.

PROFESSIONAL LAND SURVEYOR
RIEN GROENEWOUD
No. 6946
STATE OF CALIFORNIA

5/26/16

Rien Groenewoud, P.L.S. 6946



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(209) 524-3525 Phone (209) 524-3526 Fax

PACIFIC BELL PARCEL
ANNEXATION to the CITY of STOCKTON
EXHIBIT "B"

STOCKTON SAN JOAQUIN Cnty CALIFORNIA

JOB:	J15-1532
DATE:	05/26/16
SCALE:	1"=250'
DRAWN:	RG
DESIGN:	RG
CHK'D:	RG
SHEET	01 OF 01

DWG NAME: K:\J15-1532 Bear Creek East Specific Plan\dwg\Mapping\Exhibits\J15-1532 PacBell LAFCO Annex Exhibit.dwg PLOTTED: 05/26/16 08:25

Parcel name: PacBell LAFCO Annex

```
   North: 2208510.5970        East : 6335030.2442
Line  Course: S 89-00-51 E  Length: 329.87
        North: 2208504.9215          East : 6335360.0654
Line  Course: S 00-59-09 W  Length: 80.00
        North: 2208424.9333          East : 6335358.6890
Line  Course: S 02-25-40 E  Length: 700.11
        North: 2207725.4517          East : 6335388.3457
Line  Course: N 89-02-57 W  Length: 325.89
        North: 2207730.8597          East : 6335062.5005
Line  Course: N 02-45-07 W  Length: 700.56
        North: 2208430.6118          East : 6335028.8652
Line  Course: N 00-59-09 E  Length: 80.00
        North: 2208510.5999          East : 6335030.2416

   Perimeter: 2216.43   Area: 255,571 sq. ft. 5.87 acres

Mapcheck Closure - (Uses listed courses, radii, and deltas)
Error Closure: 0.0039               Course: N 40-52-41 W
  Error North: 0.00297               East : -0.00257
Precision  1: 568,315.38
```

EXHIBIT "A"

LEGAL DESCRIPTION

UNION PACIFIC RAIL ROAD ANNEXATION TO THE CITY OF STOCKTON, SAN JOAQUIN COUNTY, CALIFORNIA

ALL that certain real property, being portions of Sections 1, and 2, Township 2 North, Range 6 East, and Section 36, Township 3 North, Range 6 East, Mount Diablo Meridian, County of San Joaquin, State of California, being more particularly described as follows:

BEGINNING at a point on the North line of said Section 1, said Point of Beginning being 50.00 feet distant at right angles from the original located center of Southern Pacific Company's main track and being a point on the existing City Limits line of the City of Stockton, also said Point of Beginning bears South 89°29'52" East, 202.56 feet from the Northeast corner of said Section 2;

1. thence along said existing City Limits line, South 03°44'48" West, a distance of 1740.17 feet;
2. thence leaving said existing City Limits line and proceeding North 86°15'12" West, a distance of 150.00 feet to a point on the existing thread of Bear Creek, last said point being 200.00 feet distant at right angles from said original located center of Southern Pacific Company's main track;
3. thence parallel with said original located center of Southern Pacific Company's main track, North 03°44'48" East, a distance of 1771.73 feet to a point on the North right-of-way line of Eight Mile Road (80 feet wide);
4. thence along said North right-of-way line South 89°29'52" East, a distance of 150.24 feet to a point which is 50.00 feet distant at right angles from aforesaid original located center of Southern Pacific Company's main track, being also a point on aforesaid existing City Limits line of the City of Stockton;
5. thence along said existing City Limits line, South 03°44'48" West, a distance of 40.06 feet to the Point of Beginning.

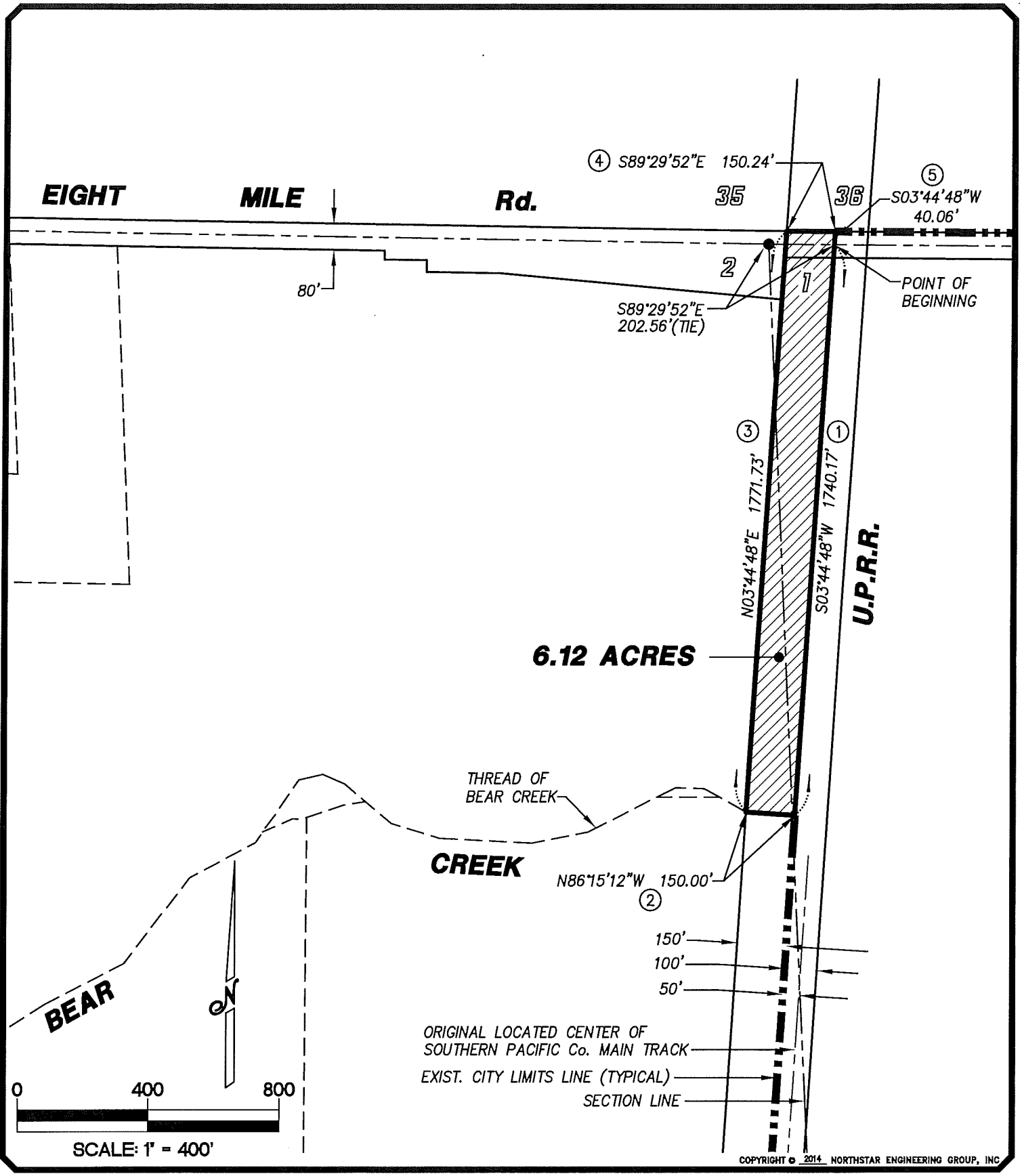
Containing 6.12 acres, more or less.

A grid bearing of North 72°20'31" East between found City of Stockton Monuments "4N-8" and "9N-18" was used as a basis for all bearings.

PROFESSIONAL LAND SURVEYOR
RIEN GROENEWOUD
No. 6946
STATE OF CALIFORNIA

5/26/16

Rien Groenewoud, P.L.S. 6946



DWG NAME: K:\J15-1532 Bear Creek East Specific Plan\dwg\Mapping\Exhibits\J15-1532 LAFCO UPRR Annex Exhibit.dwg PLOTTED: 05/26/16 11:19

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620 12th Street Modesto, CA 95354
(209) 524-3525 Phone (209) 524-3526 Fax

U.P.R.R. PARCEL
ANNEXATION to the CITY of STOCKTON
EXHIBIT "B"

STOCKTON SAN JOAQUIN Cnty CALIFORNIA

JOB:	J15-1532
DATE:	05/26/16
SCALE:	1"=400'
DRAWN:	RG
DESIGN:	RG
CHK'D:	RG
SHEET	01 OF 01

Parcel name: LAFCO UPRR Annex

```
   North: 2208423.2451        East : 6337880.7616
Line  Course: S 03-44-48 W  Length: 1740.17
        North: 2206686.7943          East : 6337767.0501
Line  Course: N 86-15-12 W  Length: 150.00
        North: 2206696.5961          East : 6337617.3707
Line  Course: N 03-44-48 E  Length: 1771.73
        North: 2208464.5394          East : 6337733.1445
Line  Course: S 89-29-52 E  Length: 150.24
        North: 2208463.2225          East : 6337883.3787
Line  Course: S 03-44-48 W  Length: 40.06
        North: 2208423.2481          East : 6337880.7610

   Perimeter: 3852.20   Area: 266,397 sq. ft. 6.12 acres

Mapcheck Closure - (Uses listed courses, radii, and deltas)
Error Closure: 0.0031               Course: N 11-27-48 W
  Error North: 0.00303               East : -0.00061
Precision  1: 1,242,645.16
```

Appendix C

Air Quality and Greenhouse Gas Modeling

Stockton Tra Vigne - Proposed Project - 2020

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	750.00	Student	14.70	62,702.53	0
Apartments Low Rise	340.00	Dwelling Unit	11.70	340,000.00	1078
Single Family Housing	1,163.00	Dwelling Unit	245.99	2,093,400.00	3687
Regional Shopping Center	101.50	1000sqft	10.50	101,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Stockton Tra Vigne - Proposed Project - 2020 - San Joaquin County, Annual

Project Characteristics - CO2 intensty factor as provided by PG&E:
https://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf

Land Use - Proposed GP land uses (10.5 C, 11.7 HDR, 260.69 ac LDR (minus 14.7 ac school). Pop 3.17/unit. Existing 15.57 I and 20.36 acres of OS not included. Assumes 90 units built on the school site--worst case scenario.

Vehicle Trips - Trip gen adjusted per traffic engineer. Trip lengths remain defaults.

Woodstoves -

Energy Use -

Land Use Change - 282.89 acres of initial cropland; 10.18 acres of grassland; 10.18 acres of wetlands

Sequestration - Assumes approx 1 front yard tree per SFR unit. Commercial site plan shows approx 150 trees within landscaping.

Mobile Land Use Mitigation -

Energy Mitigation -

Water Mitigation -

Construction Phase - Construction schedule estimated based on project type and size.

Grading - Maximum acres of grading = 283.68

Construction Off-road Equipment Mitigation - https://www.arb.ca.gov/msprog/ordiesel/faq/tierlifefaq.pdf

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	5
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 2

tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	180.00	20.00
tblConstructionPhase	NumDays	465.00	180.00
tblConstructionPhase	NumDays	4,650.00	1,047.00
tblConstructionPhase	NumDays	330.00	80.00
tblConstructionPhase	NumDays	330.00	1,068.00
tblGrading	AcresOfGrading	450.00	283.68
tblGrading	AcresOfGrading	0.00	283.68
tblLandUse	LotAcreage	1.44	14.70
tblLandUse	LotAcreage	21.25	11.70
tblLandUse	LotAcreage	377.60	245.99
tblLandUse	LotAcreage	2.33	10.50
tblLandUse	Population	3,689.00	3,687.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblSequestration	NumberOfNewTrees	0.00	1,200.00
tblVehicleTrips	ST_TR	7.16	6.39
tblVehicleTrips	SU_TR	6.07	5.86
tblVehicleTrips	WD_TR	6.59	6.42
tblVehicleTrips	WD_TR	42.70	67.56
tblVehicleTrips	WD_TR	9.52	8.63

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	1.1113	7.3157	5.1926	0.0112	1.2660	0.3111	1.5770	0.4951	0.2873	0.7823	0.0000	1,014.2290	1,014.2290	0.2230	0.0000	1,019.8030
2020	6.7585	6.1058	6.4164	0.0200	1.0675	0.1902	1.2577	0.2876	0.1797	0.4673	0.0000	1,819.7701	1,819.7701	0.1459	0.0000	1,823.4185
2021	6.6350	5.3904	5.8509	0.0193	1.0623	0.1508	1.2130	0.2862	0.1425	0.4287	0.0000	1,756.6719	1,756.6719	0.1334	0.0000	1,760.0075
2022	6.5466	4.9503	5.5042	0.0188	1.0582	0.1279	1.1862	0.2851	0.1210	0.4061	0.0000	1,716.7735	1,716.7735	0.1283	0.0000	1,719.9809
2023	6.3568	3.3200	4.1804	0.0147	0.8589	0.0863	0.9452	0.2313	0.0817	0.3130	0.0000	1,340.0778	1,340.0778	0.0906	0.0000	1,342.3433
2024	0.1821	5.9300e-003	0.0186	5.0000e-005	4.5900e-003	2.7000e-004	4.8600e-003	1.2200e-003	2.7000e-004	1.4900e-003	0.0000	4.5007	4.5007	1.3000e-004	0.0000	4.5039
Maximum	**6.7585**	**7.3157**	**6.4164**	**0.0200**	**1.2660**	**0.3111**	**1.5770**	**0.4951**	**0.2873**	**0.7823**	**0.0000**	**1,819.7701**	**1,819.7701**	**0.2230**	**0.0000**	**1,823.4185**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	1.0369	7.6948	5.5649	0.0112	0.6416	0.2924	0.9340	0.2329	0.2747	0.5076	0.0000	1,014.2282	1,014.2282	0.2230	0.0000	1,019.8022
2020	6.6561	6.4886	6.5882	0.0200	1.0675	0.1619	1.2294	0.2876	0.1569	0.4444	0.0000	1,819.7697	1,819.7697	0.1459	0.0000	1,823.4181
2021	6.5542	5.8928	6.0233	0.0193	1.0623	0.1367	1.1990	0.2862	0.1328	0.4190	0.0000	1,756.6715	1,756.6715	0.1334	0.0000	1,760.0071
2022	6.4823	5.6212	5.6933	0.0188	1.0582	0.1263	1.1845	0.2851	0.1231	0.4082	0.0000	1,716.7731	1,716.7731	0.1283	0.0000	1,719.9805
2023	6.3134	3.9678	4.3374	0.0147	0.8589	0.0932	0.9521	0.2313	0.0911	0.3224	0.0000	1,340.0775	1,340.0775	0.0906	0.0000	1,342.3430
2024	0.1818	0.0105	0.0187	5.0000e-005	4.5900e-003	4.1000e-004	5.0000e-003	1.2200e-003	4.1000e-004	1.6300e-003	0.0000	4.5007	4.5007	1.3000e-004	0.0000	4.5039
Maximum	**6.6561**	**7.6948**	**6.5882**	**0.0200**	**1.0675**	**0.2924**	**1.2294**	**0.2876**	**0.2747**	**0.5076**	**0.0000**	**1,819.7697**	**1,819.7697**	**0.2230**	**0.0000**	**1,823.4181**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**1.33**	**-9.55**	**-3.91**	**0.00**	**11.74**	**6.43**	**11.00**	**16.52**	**4.12**	**12.32**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2019**	**3-31-2019**	1.8164	1.8619
2	**4-1-2019**	**6-30-2019**	1.9310	1.9978
3	**7-1-2019**	**9-30-2019**	1.9522	2.0198
4	**10-1-2019**	**12-31-2019**	2.7375	2.8618
5	**1-1-2020**	**3-31-2020**	3.3212	3.4262

6	**4-1-2020**	**6-30-2020**	3.1484	3.2066
7	**7-1-2020**	**9-30-2020**	3.1830	3.2418
8	**10-1-2020**	**12-31-2020**	3.2063	3.2650
9	**1-1-2021**	**3-31-2021**	2.9760	3.0799
10	**4-1-2021**	**6-30-2021**	2.9907	3.0957
11	**7-1-2021**	**9-30-2021**	3.0235	3.1297
12	**10-1-2021**	**12-31-2021**	3.0422	3.1483
13	**1-1-2022**	**3-31-2022**	2.8553	3.0053
14	**4-1-2022**	**6-30-2022**	2.8710	3.0226
15	**7-1-2022**	**9-30-2022**	2.9025	3.0558
16	**10-1-2022**	**12-31-2022**	2.9187	3.0720
17	**1-1-2023**	**3-31-2023**	2.6506	2.8332
18	**4-1-2023**	**6-30-2023**	2.6677	2.8524
19	**7-1-2023**	**9-30-2023**	2.6971	2.8837
20	**10-1-2023**	**12-31-2023**	1.6900	1.7404
21	**1-1-2024**	**3-31-2024**	0.1681	0.1719
		Highest	3.3212	3.4262

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	18.2022	1.4698	59.1366	0.1598		7.8872	7.8872		7.8872	7.8872	1,041.7693	669.3555	1,711.1248	4.9004	0.0119	1,837.1909
Energy	0.1938	1.6613	0.7431	0.0106		0.1339	0.1339		0.1339	0.1339	0.0000	3,614.6198	3,614.6198	0.2064	0.0703	3,640.7198
Mobile	6.6660	45.3543	72.0402	0.2541	18.0315	0.2697	18.3012	4.8355	0.2544	5.0898	0.0000	23,395.5988	23,395.5988	1.2270	0.0000	23,426.2743
Waste						0.0000	0.0000		0.0000	0.0000	350.6019	0.0000	350.6019	20.7200	0.0000	868.6014
Water						0.0000	0.0000		0.0000	0.0000	34.0296	109.0441	143.0737	3.5061	0.0848	255.9913
Total	**25.0620**	**48.4854**	**131.9199**	**0.4244**	**18.0315**	**8.2908**	**26.3224**	**4.8355**	**8.2755**	**13.1110**	**1,426.4008**	**27,788.6182**	**29,215.0190**	**30.5599**	**0.1670**	**30,028.7777**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	12.9506	0.6918	11.4442	4.1800e-003		0.1071	0.1071		0.1071	0.1071	0.0000	669.3555	669.3555	0.0303	0.0119	673.6702
Energy	0.1938	1.6613	0.7431	0.0106		0.1339	0.1339		0.1339	0.1339	0.0000	3,614.6198	3,614.6198	0.2064	0.0703	3,640.7198
Mobile	6.4376	43.1150	66.9100	0.2321	16.2735	0.2464	16.5199	4.3640	0.2324	4.5964	0.0000	21,376.0789	21,376.0789	1.1679	0.0000	21,405.2762
Waste						0.0000	0.0000		0.0000	0.0000	350.6019	0.0000	350.6019	20.7200	0.0000	868.6014
Water						0.0000	0.0000		0.0000	0.0000	27.2237	91.7802	119.0039	2.8053	0.0679	209.3773
Total	**19.5820**	**45.4682**	**79.0973**	**0.2469**	**16.2735**	**0.4873**	**16.7608**	**4.3640**	**0.4733**	**4.8373**	**377.8256**	**25,751.8345**	**26,129.6601**	**24.9299**	**0.1501**	**26,797.6450**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**21.87**	**6.22**	**40.04**	**41.84**	**9.75**	**94.12**	**36.32**	**9.75**	**94.28**	**63.10**	**73.51**	**7.33**	**10.56**	**18.42**	**10.10**	**10.76**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	880.8000
Vegetation Land Change	-1,753.9180
Total	**-873.1180**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2019	1/28/2019	5	20	
2	Grading	Grading	1/29/2019	10/7/2019	5	180	
3	Building Construction	Building Construction	10/8/2019	10/11/2023	5	1047	
4	Paving	Paving	10/8/2019	1/27/2020	5	80	
5	Architectural Coating	Architectural Coating	12/8/2019	1/10/2024	5	1068	

Acres of Grading (Site Preparation Phase): 283.68

Acres of Grading (Grading Phase): 283.68

Acres of Paving: 0

Residential Indoor: 4,927,635; Residential Outdoor: 1,642,545; Non-Residential Indoor: 246,304; Non-Residential Outdoor: 82,101; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	722.00	188.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	144.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3311	0.0000	0.3311	0.1156	0.0000	0.1156	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0434	0.4557	0.2206	3.8000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	34.1687	34.1687	0.0108	0.0000	34.4390
Total	**0.0434**	**0.4557**	**0.2206**	**3.8000e-004**	**0.3311**	**0.0239**	**0.3550**	**0.1156**	**0.0220**	**0.1375**	**0.0000**	**34.1687**	**34.1687**	**0.0108**	**0.0000**	**34.4390**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-004	5.9000e-004	5.7100e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3116	1.3116	4.0000e-005	0.0000	1.3126
Total	**7.9000e-004**	**5.9000e-004**	**5.7100e-003**	**1.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.3116**	**1.3116**	**4.0000e-005**	**0.0000**	**1.3126**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1291	0.0000	0.1291	0.0451	0.0000	0.0451	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0434	0.4557	0.2206	3.8000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	34.1687	34.1687	0.0108	0.0000	34.4389
Total	**0.0434**	**0.4557**	**0.2206**	**3.8000e-004**	**0.1291**	**0.0239**	**0.1530**	**0.0451**	**0.0220**	**0.0671**	**0.0000**	**34.1687**	**34.1687**	**0.0108**	**0.0000**	**34.4389**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-004	5.9000e-004	5.7100e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3116	1.3116	4.0000e-005	0.0000	1.3126
Total	**7.9000e-004**	**5.9000e-004**	**5.7100e-003**	**1.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.3116**	**1.3116**	**4.0000e-005**	**0.0000**	**1.3126**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6924	0.0000	0.6924	0.3142	0.0000	0.3142	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4265	4.9068	3.0039	5.5800e-003		0.2144	0.2144		0.1973	0.1973	0.0000	501.3119	501.3119	0.1586	0.0000	505.2771
Total	**0.4265**	**4.9068**	**3.0039**	**5.5800e-003**	**0.6924**	**0.2144**	**0.9069**	**0.3142**	**0.1973**	**0.5114**	**0.0000**	**501.3119**	**501.3119**	**0.1586**	**0.0000**	**505.2771**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8700e-003	5.8500e-003	0.0571	1.5000e-004	0.0143	1.0000e-004	0.0144	3.8100e-003	9.0000e-005	3.9000e-003	0.0000	13.1164	13.1164	4.0000e-004	0.0000	13.1264
Total	**7.8700e-003**	**5.8500e-003**	**0.0571**	**1.5000e-004**	**0.0143**	**1.0000e-004**	**0.0144**	**3.8100e-003**	**9.0000e-005**	**3.9000e-003**	**0.0000**	**13.1164**	**13.1164**	**4.0000e-004**	**0.0000**	**13.1264**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2700	0.0000	0.2700	0.1225	0.0000	0.1225	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3866	5.1318	3.2728	5.5800e-003		0.2073	0.2073		0.1935	0.1935	0.0000	501.3113	501.3113	0.1586	0.0000	505.2765
Total	**0.3866**	**5.1318**	**3.2728**	**5.5800e-003**	**0.2700**	**0.2073**	**0.4773**	**0.1225**	**0.1935**	**0.3160**	**0.0000**	**501.3113**	**501.3113**	**0.1586**	**0.0000**	**505.2765**

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8700e-003	5.8500e-003	0.0571	1.5000e-004	0.0143	1.0000e-004	0.0144	3.8100e-003	9.0000e-005	3.9000e-003	0.0000	13.1164	13.1164	4.0000e-004	0.0000	13.1264
Total	**7.8700e-003**	**5.8500e-003**	**0.0571**	**1.5000e-004**	**0.0143**	**1.0000e-004**	**0.0144**	**3.8100e-003**	**9.0000e-005**	**3.9000e-003**	**0.0000**	**13.1164**	**13.1164**	**4.0000e-004**	**0.0000**	**13.1264**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0720	0.6429	0.5235	8.2000e-004		0.0393	0.0393		0.0370	0.0370	0.0000	71.7068	71.7068	0.0175	0.0000	72.1435
Total	**0.0720**	**0.6429**	**0.5235**	**8.2000e-004**		**0.0393**	**0.0393**		**0.0370**	**0.0370**	**0.0000**	**71.7068**	**71.7068**	**0.0175**	**0.0000**	**72.1435**

3.4 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0288	0.7462	0.1667	1.6400e-003	0.0379	5.7200e-003	0.0436	0.0110	5.4700e-003	0.0164	0.0000	155.2773	155.2773	0.0104	0.0000	155.5371
Worker	0.0963	0.0716	0.6987	1.7800e-003	0.1754	1.2300e-003	0.1766	0.0466	1.1400e-003	0.0478	0.0000	160.4640	160.4640	4.9200e-003	0.0000	160.5869
Total	**0.1251**	**0.8178**	**0.8654**	**3.4200e-003**	**0.2133**	**6.9500e-003**	**0.2202**	**0.0576**	**6.6100e-003**	**0.0642**	**0.0000**	**315.7412**	**315.7412**	**0.0153**	**0.0000**	**316.1240**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0485	0.6628	0.5515	8.2000e-004		0.0302	0.0302		0.0292	0.0292	0.0000	71.7067	71.7067	0.0175	0.0000	72.1434
Total	**0.0485**	**0.6628**	**0.5515**	**8.2000e-004**		**0.0302**	**0.0302**		**0.0292**	**0.0292**	**0.0000**	**71.7067**	**71.7067**	**0.0175**	**0.0000**	**72.1434**

3.4 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0288	0.7462	0.1667	1.6400e-003	0.0379	5.7200e-003	0.0436	0.0110	5.4700e-003	0.0164	0.0000	155.2773	155.2773	0.0104	0.0000	155.5371
Worker	0.0963	0.0716	0.6987	1.7800e-003	0.1754	1.2300e-003	0.1766	0.0466	1.1400e-003	0.0478	0.0000	160.4640	160.4640	4.9200e-003	0.0000	160.5869
Total	**0.1251**	**0.8178**	**0.8654**	**3.4200e-003**	**0.2133**	**6.9500e-003**	**0.2202**	**0.0576**	**6.6100e-003**	**0.0642**	**0.0000**	**315.7412**	**315.7412**	**0.0153**	**0.0000**	**316.1240**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4091	303.4091	0.0740	0.0000	305.2596
Total	**0.2777**	**2.5134**	**2.2072**	**3.5300e-003**		**0.1463**	**0.1463**		**0.1376**	**0.1376**	**0.0000**	**303.4091**	**303.4091**	**0.0740**	**0.0000**	**305.2596**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0999	2.9126	0.6199	6.9600e-003	0.1627	0.0161	0.1788	0.0470	0.0154	0.0624	0.0000	661.5079	661.5079	0.0411	0.0000	662.5342
Worker	0.3774	0.2711	2.6731	7.3900e-003	0.7534	5.1300e-003	0.7585	0.2003	4.7200e-003	0.2050	0.0000	668.1185	668.1185	0.0184	0.0000	668.5790
Total	**0.4773**	**3.1837**	**3.2930**	**0.0144**	**0.9161**	**0.0212**	**0.9373**	**0.2473**	**0.0201**	**0.2674**	**0.0000**	**1,329.6265**	**1,329.6265**	**0.0595**	**0.0000**	**1,331.1132**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1945	2.7600	2.3554	3.5300e-003		0.1203	0.1203		0.1167	0.1167	0.0000	303.4087	303.4087	0.0740	0.0000	305.2592
Total	**0.1945**	**2.7600**	**2.3554**	**3.5300e-003**		**0.1203**	**0.1203**		**0.1167**	**0.1167**	**0.0000**	**303.4087**	**303.4087**	**0.0740**	**0.0000**	**305.2592**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0999	2.9126	0.6199	6.9600e-003	0.1627	0.0161	0.1788	0.0470	0.0154	0.0624	0.0000	661.5079	661.5079	0.0411	0.0000	662.5342
Worker	0.3774	0.2711	2.6731	7.3900e-003	0.7534	5.1300e-003	0.7585	0.2003	4.7200e-003	0.2050	0.0000	668.1185	668.1185	0.0184	0.0000	668.5790
Total	**0.4773**	**3.1837**	**3.2930**	**0.0144**	**0.9161**	**0.0212**	**0.9373**	**0.2473**	**0.0201**	**0.2674**	**0.0000**	**1,329.6265**	**1,329.6265**	**0.0595**	**0.0000**	**1,331.1132**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2867	302.2867	0.0729	0.0000	304.1099
Total	**0.2481**	**2.2749**	**2.1631**	**3.5100e-003**		**0.1251**	**0.1251**		**0.1176**	**0.1176**	**0.0000**	**302.2867**	**302.2867**	**0.0729**	**0.0000**	**304.1099**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0814	2.6279	0.5418	6.8700e-003	0.1621	7.4700e-003	0.1696	0.0468	7.1400e-003	0.0540	0.0000	652.8545	652.8545	0.0386	0.0000	653.8192
Worker	0.3472	0.2404	2.4252	7.0900e-003	0.7505	4.9200e-003	0.7554	0.1995	4.5300e-003	0.2041	0.0000	640.4713	640.4713	0.0164	0.0000	640.8803
Total	**0.4286**	**2.8683**	**2.9670**	**0.0140**	**0.9126**	**0.0124**	**0.9250**	**0.2464**	**0.0117**	**0.2581**	**0.0000**	**1,293.3258**	**1,293.3258**	**0.0550**	**0.0000**	**1,294.6995**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1810	2.6696	2.3335	3.5100e-003		0.1109	0.1109		0.1078	0.1078	0.0000	302.2863	302.2863	0.0729	0.0000	304.1095
Total	**0.1810**	**2.6696**	**2.3335**	**3.5100e-003**		**0.1109**	**0.1109**		**0.1078**	**0.1078**	**0.0000**	**302.2863**	**302.2863**	**0.0729**	**0.0000**	**304.1095**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0814	2.6279	0.5418	6.8700e-003	0.1621	7.4700e-003	0.1696	0.0468	7.1400e-003	0.0540	0.0000	652.8545	652.8545	0.0386	0.0000	653.8192
Worker	0.3472	0.2404	2.4252	7.0900e-003	0.7505	4.9200e-003	0.7554	0.1995	4.5300e-003	0.2041	0.0000	640.4713	640.4713	0.0164	0.0000	640.8803
Total	**0.4286**	**2.8683**	**2.9670**	**0.0140**	**0.9126**	**0.0124**	**0.9250**	**0.2464**	**0.0117**	**0.2581**	**0.0000**	**1,293.3258**	**1,293.3258**	**0.0550**	**0.0000**	**1,294.6995**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2428	301.2428	0.0722	0.0000	303.0471
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2428**	**301.2428**	**0.0722**	**0.0000**	**303.0471**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0752	2.4802	0.4979	6.7800e-003	0.1615	6.4400e-003	0.1679	0.0467	6.1600e-003	0.0528	0.0000	644.2771	644.2771	0.0365	0.0000	645.1891
Worker	0.3209	0.2142	2.2038	6.8100e-003	0.7476	4.7500e-003	0.7524	0.1988	4.3800e-003	0.2032	0.0000	615.3351	615.3351	0.0146	0.0000	615.6996
Total	**0.3961**	**2.6944**	**2.7017**	**0.0136**	**0.9091**	**0.0112**	**0.9203**	**0.2454**	**0.0105**	**0.2560**	**0.0000**	**1,259.6123**	**1,259.6123**	**0.0511**	**0.0000**	**1,260.8887**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1693	2.5783	2.3139	3.5000e-003		0.1018	0.1018		0.0993	0.0993	0.0000	301.2425	301.2425	0.0722	0.0000	303.0467
Total	**0.1693**	**2.5783**	**2.3139**	**3.5000e-003**		**0.1018**	**0.1018**		**0.0993**	**0.0993**	**0.0000**	**301.2425**	**301.2425**	**0.0722**	**0.0000**	**303.0467**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0752	2.4802	0.4979	6.7800e-003	0.1615	6.4400e-003	0.1679	0.0467	6.1600e-003	0.0528	0.0000	644.2771	644.2771	0.0365	0.0000	645.1891
Worker	0.3209	0.2142	2.2038	6.8100e-003	0.7476	4.7500e-003	0.7524	0.1988	4.3800e-003	0.2032	0.0000	615.3351	615.3351	0.0146	0.0000	615.6996
Total	**0.3961**	**2.6944**	**2.7017**	**0.0136**	**0.9091**	**0.0112**	**0.9203**	**0.2454**	**0.0105**	**0.2560**	**0.0000**	**1,259.6123**	**1,259.6123**	**0.0511**	**0.0000**	**1,260.8887**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1596	1.4601	1.6488	2.7300e-003		0.0710	0.0710		0.0668	0.0668	0.0000	235.2818	235.2818	0.0560	0.0000	236.6811
Total	**0.1596**	**1.4601**	**1.6488**	**2.7300e-003**		**0.0710**	**0.0710**		**0.0668**	**0.0668**	**0.0000**	**235.2818**	**235.2818**	**0.0560**	**0.0000**	**236.6811**

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0417	1.5025	0.3274	5.1700e-003	0.1261	1.5400e-003	0.1276	0.0364	1.4800e-003	0.0379	0.0000	490.8900	490.8900	0.0199	0.0000	491.3877
Worker	0.2329	0.1498	1.5682	5.1100e-003	0.5837	3.6000e-003	0.5873	0.1552	3.3200e-003	0.1585	0.0000	462.5549	462.5549	0.0102	0.0000	462.8090
Total	**0.2746**	**1.6523**	**1.8956**	**0.0103**	**0.7098**	**5.1400e-003**	**0.7149**	**0.1916**	**4.8000e-003**	**0.1964**	**0.0000**	**953.4449**	**953.4449**	**0.0301**	**0.0000**	**954.1967**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1263	1.9715	1.8031	2.7300e-003		0.0748	0.0748		0.0731	0.0731	0.0000	235.2815	235.2815	0.0560	0.0000	236.6808
Total	**0.1263**	**1.9715**	**1.8031**	**2.7300e-003**		**0.0748**	**0.0748**		**0.0731**	**0.0731**	**0.0000**	**235.2815**	**235.2815**	**0.0560**	**0.0000**	**236.6808**

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0417	1.5025	0.3274	5.1700e-003	0.1261	1.5400e-003	0.1276	0.0364	1.4800e-003	0.0379	0.0000	490.8900	490.8900	0.0199	0.0000	491.3877
Worker	0.2329	0.1498	1.5682	5.1100e-003	0.5837	3.6000e-003	0.5873	0.1552	3.3200e-003	0.1585	0.0000	462.5549	462.5549	0.0102	0.0000	462.8090
Total	**0.2746**	**1.6523**	**1.8956**	**0.0103**	**0.7098**	**5.1400e-003**	**0.7149**	**0.1916**	**4.8000e-003**	**0.1964**	**0.0000**	**953.4449**	**953.4449**	**0.0301**	**0.0000**	**954.1967**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0444	0.4649	0.4473	7.0000e-004		0.0252	0.0252		0.0231	0.0231	0.0000	62.4493	62.4493	0.0198	0.0000	62.9433
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0444**	**0.4649**	**0.4473**	**7.0000e-004**		**0.0252**	**0.0252**		**0.0231**	**0.0231**	**0.0000**	**62.4493**	**62.4493**	**0.0198**	**0.0000**	**62.9433**

3.5 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-003	1.4900e-003	0.0145	4.0000e-005	3.6400e-003	3.0000e-005	3.6700e-003	9.7000e-004	2.0000e-005	9.9000e-004	0.0000	3.3337	3.3337	1.0000e-004	0.0000	3.3363
Total	**2.0000e-003**	**1.4900e-003**	**0.0145**	**4.0000e-005**	**3.6400e-003**	**3.0000e-005**	**3.6700e-003**	**9.7000e-004**	**2.0000e-005**	**9.9000e-004**	**0.0000**	**3.3337**	**3.3337**	**1.0000e-004**	**0.0000**	**3.3363**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0347	0.5948	0.5229	7.0000e-004		0.0231	0.0231		0.0223	0.0223	0.0000	62.4492	62.4492	0.0198	0.0000	62.9432
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0347**	**0.5948**	**0.5229**	**7.0000e-004**		**0.0231**	**0.0231**		**0.0223**	**0.0223**	**0.0000**	**62.4492**	**62.4492**	**0.0198**	**0.0000**	**62.9432**

3.5 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-003	1.4900e-003	0.0145	4.0000e-005	3.6400e-003	3.0000e-005	3.6700e-003	9.7000e-004	2.0000e-005	9.9000e-004	0.0000	3.3337	3.3337	1.0000e-004	0.0000	3.3363
Total	**2.0000e-003**	**1.4900e-003**	**0.0145**	**4.0000e-005**	**3.6400e-003**	**3.0000e-005**	**3.6700e-003**	**9.7000e-004**	**2.0000e-005**	**9.9000e-004**	**0.0000**	**3.3337**	**3.3337**	**1.0000e-004**	**0.0000**	**3.3363**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0129	0.1336	0.1392	2.2000e-004		7.1500e-003	7.1500e-003		6.5800e-003	6.5800e-003	0.0000	19.0268	19.0268	6.1500e-003	0.0000	19.1807
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0129**	**0.1336**	**0.1392**	**2.2000e-004**		**7.1500e-003**	**7.1500e-003**		**6.5800e-003**	**6.5800e-003**	**0.0000**	**19.0268**	**19.0268**	**6.1500e-003**	**0.0000**	**19.1807**

3.5 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-004	4.1000e-004	4.0300e-003	1.0000e-005	1.1400e-003	1.0000e-005	1.1400e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	1.0066	1.0066	3.0000e-005	0.0000	1.0073
Total	**5.7000e-004**	**4.1000e-004**	**4.0300e-003**	**1.0000e-005**	**1.1400e-003**	**1.0000e-005**	**1.1400e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**1.0066**	**1.0066**	**3.0000e-005**	**0.0000**	**1.0073**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0105	0.1822	0.1626	2.2000e-004		6.9000e-003	6.9000e-003		6.7000e-003	6.7000e-003	0.0000	19.0268	19.0268	6.1500e-003	0.0000	19.1806
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0105**	**0.1822**	**0.1626**	**2.2000e-004**		**6.9000e-003**	**6.9000e-003**		**6.7000e-003**	**6.7000e-003**	**0.0000**	**19.0268**	**19.0268**	**6.1500e-003**	**0.0000**	**19.1806**

3.5 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-004	4.1000e-004	4.0300e-003	1.0000e-005	1.1400e-003	1.0000e-005	1.1400e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	1.0066	1.0066	3.0000e-005	0.0000	1.0073
Total	**5.7000e-004**	**4.1000e-004**	**4.0300e-003**	**1.0000e-005**	**1.1400e-003**	**1.0000e-005**	**1.1400e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**1.0066**	**1.0066**	**3.0000e-005**	**0.0000**	**1.0073**

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3817					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.2600e-003	0.0156	0.0157	3.0000e-005		1.0900e-003	1.0900e-003		1.0900e-003	1.0900e-003	0.0000	2.1703	2.1703	1.8000e-004	0.0000	2.1749
Total	**0.3840**	**0.0156**	**0.0157**	**3.0000e-005**		**1.0900e-003**	**1.0900e-003**		**1.0900e-003**	**1.0900e-003**	**0.0000**	**2.1703**	**2.1703**	**1.8000e-004**	**0.0000**	**2.1749**

3.6 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3500e-003	3.9800e-003	0.0388	1.0000e-004	9.7500e-003	7.0000e-005	9.8200e-003	2.5900e-003	6.0000e-005	2.6600e-003	0.0000	8.9191	8.9191	2.7000e-004	0.0000	8.9260
Total	**5.3500e-003**	**3.9800e-003**	**0.0388**	**1.0000e-004**	**9.7500e-003**	**7.0000e-005**	**9.8200e-003**	**2.5900e-003**	**6.0000e-005**	**2.6600e-003**	**0.0000**	**8.9191**	**8.9191**	**2.7000e-004**	**0.0000**	**8.9260**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3817					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7000e-004	0.0200	0.0156	3.0000e-005		8.1000e-004	8.1000e-004		8.1000e-004	8.1000e-004	0.0000	2.1703	2.1703	1.8000e-004	0.0000	2.1749
Total	**0.3827**	**0.0200**	**0.0156**	**3.0000e-005**		**8.1000e-004**	**8.1000e-004**		**8.1000e-004**	**8.1000e-004**	**0.0000**	**2.1703**	**2.1703**	**1.8000e-004**	**0.0000**	**2.1749**

3.6 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3500e-003	3.9800e-003	0.0388	1.0000e-004	9.7500e-003	7.0000e-005	9.8200e-003	2.5900e-003	6.0000e-005	2.6600e-003	0.0000	8.9191	8.9191	2.7000e-004	0.0000	8.9260
Total	**5.3500e-003**	**3.9800e-003**	**0.0388**	**1.0000e-004**	**9.7500e-003**	**7.0000e-005**	**9.8200e-003**	**2.5900e-003**	**6.0000e-005**	**2.6600e-003**	**0.0000**	**8.9191**	**8.9191**	**2.7000e-004**	**0.0000**	**8.9260**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.8830					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.2206	0.2399	3.9000e-004		0.0145	0.0145		0.0145	0.0145	0.0000	33.4476	33.4476	2.5900e-003	0.0000	33.5124
Total	**5.9148**	**0.2206**	**0.2399**	**3.9000e-004**		**0.0145**	**0.0145**		**0.0145**	**0.0145**	**0.0000**	**33.4476**	**33.4476**	**2.5900e-003**	**0.0000**	**33.5124**

3.6 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0753	0.0541	0.5331	1.4700e-003	0.1503	1.0200e-003	0.1513	0.0400	9.4000e-004	0.0409	0.0000	133.2536	133.2536	3.6700e-003	0.0000	133.3454
Total	**0.0753**	**0.0541**	**0.5331**	**1.4700e-003**	**0.1503**	**1.0200e-003**	**0.1513**	**0.0400**	**9.4000e-004**	**0.0409**	**0.0000**	**133.2536**	**133.2536**	**3.6700e-003**	**0.0000**	**133.3454**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.8830					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0149	0.3082	0.2401	3.9000e-004		0.0125	0.0125		0.0125	0.0125	0.0000	33.4476	33.4476	2.5900e-003	0.0000	33.5123
Total	**5.8980**	**0.3082**	**0.2401**	**3.9000e-004**		**0.0125**	**0.0125**		**0.0125**	**0.0125**	**0.0000**	**33.4476**	**33.4476**	**2.5900e-003**	**0.0000**	**33.5123**

3.6 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0753	0.0541	0.5331	1.4700e-003	0.1503	1.0200e-003	0.1513	0.0400	9.4000e-004	0.0409	0.0000	133.2536	133.2536	3.6700e-003	0.0000	133.3454
Total	**0.0753**	**0.0541**	**0.5331**	**1.4700e-003**	**0.1503**	**1.0200e-003**	**0.1513**	**0.0400**	**9.4000e-004**	**0.0409**	**0.0000**	**133.2536**	**133.2536**	**3.6700e-003**	**0.0000**	**133.3454**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.8606					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0286	0.1993	0.2372	3.9000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	33.3200	33.3200	2.2900e-003	0.0000	33.3771
Total	**5.8892**	**0.1993**	**0.2372**	**3.9000e-004**		**0.0123**	**0.0123**		**0.0123**	**0.0123**	**0.0000**	**33.3200**	**33.3200**	**2.2900e-003**	**0.0000**	**33.3771**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0692	0.0479	0.4837	1.4100e-003	0.1497	9.8000e-004	0.1507	0.0398	9.0000e-004	0.0407	0.0000	127.7394	127.7394	3.2600e-003	0.0000	127.8210
Total	**0.0692**	**0.0479**	**0.4837**	**1.4100e-003**	**0.1497**	**9.8000e-004**	**0.1507**	**0.0398**	**9.0000e-004**	**0.0407**	**0.0000**	**127.7394**	**127.7394**	**3.2600e-003**	**0.0000**	**127.8210**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.8606					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0149	0.3070	0.2391	3.9000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	33.3199	33.3199	2.2900e-003	0.0000	33.3771
Total	**5.8754**	**0.3070**	**0.2391**	**3.9000e-004**		**0.0124**	**0.0124**		**0.0124**	**0.0124**	**0.0000**	**33.3199**	**33.3199**	**2.2900e-003**	**0.0000**	**33.3771**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0692	0.0479	0.4837	1.4100e-003	0.1497	9.8000e-004	0.1507	0.0398	9.0000e-004	0.0407	0.0000	127.7394	127.7394	3.2600e-003	0.0000	127.8210
Total	**0.0692**	**0.0479**	**0.4837**	**1.4100e-003**	**0.1497**	**9.8000e-004**	**0.1507**	**0.0398**	**9.0000e-004**	**0.0407**	**0.0000**	**127.7394**	**127.7394**	**3.2600e-003**	**0.0000**	**127.8210**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.8381					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.1831	0.2358	3.9000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	33.1923	33.1923	2.1600e-003	0.0000	33.2463
Total	**5.8647**	**0.1831**	**0.2358**	**3.9000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**33.1923**	**33.1923**	**2.1600e-003**	**0.0000**	**33.2463**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0640	0.0427	0.4395	1.3600e-003	0.1491	9.5000e-004	0.1501	0.0396	8.7000e-004	0.0405	0.0000	122.7261	122.7261	2.9100e-003	0.0000	122.7988
Total	**0.0640**	**0.0427**	**0.4395**	**1.3600e-003**	**0.1491**	**9.5000e-004**	**0.1501**	**0.0396**	**8.7000e-004**	**0.0405**	**0.0000**	**122.7261**	**122.7261**	**2.9100e-003**	**0.0000**	**122.7988**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.8381					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0148	0.3058	0.2382	3.9000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	33.1923	33.1923	2.1600e-003	0.0000	33.2463
Total	**5.8529**	**0.3058**	**0.2382**	**3.9000e-004**		**0.0124**	**0.0124**		**0.0124**	**0.0124**	**0.0000**	**33.1923**	**33.1923**	**2.1600e-003**	**0.0000**	**33.2463**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0640	0.0427	0.4395	1.3600e-003	0.1491	9.5000e-004	0.1501	0.0396	8.7000e-004	0.0405	0.0000	122.7261	122.7261	2.9100e-003	0.0000	122.7988
Total	**0.0640**	**0.0427**	**0.4395**	**1.3600e-003**	**0.1491**	**9.5000e-004**	**0.1501**	**0.0396**	**8.7000e-004**	**0.0405**	**0.0000**	**122.7261**	**122.7261**	**2.9100e-003**	**0.0000**	**122.7988**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.8381					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.1694	0.2355	3.9000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419
Total	**5.8630**	**0.1694**	**0.2355**	**3.9000e-004**		**9.2100e-003**	**9.2100e-003**		**9.2100e-003**	**9.2100e-003**	**0.0000**	**33.1923**	**33.1923**	**1.9900e-003**	**0.0000**	**33.2419**

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0595	0.0383	0.4006	1.3100e-003	0.1491	9.2000e-004	0.1500	0.0396	8.5000e-004	0.0405	0.0000	118.1588	118.1588	2.6000e-003	0.0000	118.2237
Total	**0.0595**	**0.0383**	**0.4006**	**1.3100e-003**	**0.1491**	**9.2000e-004**	**0.1500**	**0.0396**	**8.5000e-004**	**0.0405**	**0.0000**	**118.1588**	**118.1588**	**2.6000e-003**	**0.0000**	**118.2237**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.8381					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0148	0.3058	0.2382	3.9000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419
Total	**5.8529**	**0.3058**	**0.2382**	**3.9000e-004**		**0.0124**	**0.0124**		**0.0124**	**0.0124**	**0.0000**	**33.1923**	**33.1923**	**1.9900e-003**	**0.0000**	**33.2419**

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0595	0.0383	0.4006	1.3100e-003	0.1491	9.2000e-004	0.1500	0.0396	8.5000e-004	0.0405	0.0000	118.1588	118.1588	2.6000e-003	0.0000	118.2237
Total	**0.0595**	**0.0383**	**0.4006**	**1.3100e-003**	**0.1491**	**9.2000e-004**	**0.1500**	**0.0396**	**8.5000e-004**	**0.0405**	**0.0000**	**118.1588**	**118.1588**	**2.6000e-003**	**0.0000**	**118.2237**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1796					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2000e-004	4.8800e-003	7.2400e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	1.0213	1.0213	6.0000e-005	0.0000	1.0227
Total	**0.1804**	**4.8800e-003**	**7.2400e-003**	**1.0000e-005**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**1.0213**	**1.0213**	**6.0000e-005**	**0.0000**	**1.0227**

3.6 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7100e-003	1.0600e-003	0.0114	4.0000e-005	4.5900e-003	3.0000e-005	4.6200e-003	1.2200e-003	3.0000e-005	1.2500e-003	0.0000	3.4794	3.4794	7.0000e-005	0.0000	3.4812
Total	**1.7100e-003**	**1.0600e-003**	**0.0114**	**4.0000e-005**	**4.5900e-003**	**3.0000e-005**	**4.6200e-003**	**1.2200e-003**	**3.0000e-005**	**1.2500e-003**	**0.0000**	**3.4794**	**3.4794**	**7.0000e-005**	**0.0000**	**3.4812**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1796					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6000e-004	9.4100e-003	7.3300e-003	1.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	1.0213	1.0213	6.0000e-005	0.0000	1.0227
Total	**0.1801**	**9.4100e-003**	**7.3300e-003**	**1.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**1.0213**	**1.0213**	**6.0000e-005**	**0.0000**	**1.0227**

3.6 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7100e-003	1.0600e-003	0.0114	4.0000e-005	4.5900e-003	3.0000e-005	4.6200e-003	1.2200e-003	3.0000e-005	1.2500e-003	0.0000	3.4794	3.4794	7.0000e-005	0.0000	3.4812
Total	**1.7100e-003**	**1.0600e-003**	**0.0114**	**4.0000e-005**	**4.5900e-003**	**3.0000e-005**	**4.6200e-003**	**1.2200e-003**	**3.0000e-005**	**1.2500e-003**	**0.0000**	**3.4794**	**3.4794**	**7.0000e-005**	**0.0000**	**3.4812**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	6.4376	43.1150	66.9100	0.2321	16.2735	0.2464	16.5199	4.3640	0.2324	4.5964	0.0000	21,376.0789	21,376.0789	1.1679	0.0000	21,405.2762
Unmitigated	6.6660	45.3543	72.0402	0.2541	18.0315	0.2697	18.3012	4.8355	0.2544	5.0898	0.0000	23,395.5988	23,395.5988	1.2270	0.0000	23,426.2743

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	2,182.80	2,172.60	1992.40	6,242,311	5,633,686
Elementary School	967.50	0.00	0.00	1,523,770	1,375,203
Regional Shopping Center	6,857.34	5,071.96	2561.86	10,499,920	9,476,178
Single Family Housing	10,036.69	11,525.33	10025.06	29,695,932	26,800,578
Total	20,044.33	18,769.89	14,579.32	47,961,934	43,285,645

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	45.60	19.00	35.40	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	10.80	7.30	7.50	45.60	19.00	35.40	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931
Elementary School	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931
Regional Shopping Center	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931
Single Family Housing	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,696.6898	1,696.6898	0.1697	0.0351	1,711.3925
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,696.6898	1,696.6898	0.1697	0.0351	1,711.3925
NaturalGas Mitigated	0.1938	1.6613	0.7431	0.0106		0.1339	0.1339		0.1339	0.1339	0.0000	1,917.9301	1,917.9301	0.0368	0.0352	1,929.3274
NaturalGas Unmitigated	0.1938	1.6613	0.7431	0.0106		0.1339	0.1339		0.1339	0.1339	0.0000	1,917.9301	1,917.9301	0.0368	0.0352	1,929.3274

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	4.11356e+006	0.0222	0.1896	0.0807	1.2100e-003		0.0153	0.0153		0.0153	0.0153	0.0000	219.5155	219.5155	4.2100e-003	4.0200e-003	220.8200
Elementary School	593793	3.2000e-003	0.0291	0.0245	1.7000e-004		2.2100e-003	2.2100e-003		2.2100e-003	2.2100e-003	0.0000	31.6871	31.6871	6.1000e-004	5.8000e-004	31.8754
Regional Shopping Center	1.18755e+006	6.4000e-003	0.0582	0.0489	3.5000e-004		4.4200e-003	4.4200e-003		4.4200e-003	4.4200e-003	0.0000	63.3722	63.3722	1.2100e-003	1.1600e-003	63.7488
Single Family Housing	3.00457e+007	0.1620	1.3845	0.5891	8.8400e-003		0.1119	0.1119		0.1119	0.1119	0.0000	1,603.3554	1,603.3554	0.0307	0.0294	1,612.8833
Total		**0.1938**	**1.6613**	**0.7431**	**0.0106**		**0.1339**	**0.1339**		**0.1339**	**0.1339**	**0.0000**	**1,917.9301**	**1,917.9301**	**0.0368**	**0.0352**	**1,929.3274**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	4.11356e+006	0.0222	0.1896	0.0807	1.2100e-003		0.0153	0.0153		0.0153	0.0153	0.0000	219.5155	219.5155	4.2100e-003	4.0200e-003	220.8200
Elementary School	593793	3.2000e-003	0.0291	0.0245	1.7000e-004		2.2100e-003	2.2100e-003		2.2100e-003	2.2100e-003	0.0000	31.6871	31.6871	6.1000e-004	5.8000e-004	31.8754
Regional Shopping Center	1.18755e+006	6.4000e-003	0.0582	0.0489	3.5000e-004		4.4200e-003	4.4200e-003		4.4200e-003	4.4200e-003	0.0000	63.3722	63.3722	1.2100e-003	1.1600e-003	63.7488
Single Family Housing	3.00457e+007	0.1620	1.3845	0.5891	8.8400e-003		0.1119	0.1119		0.1119	0.1119	0.0000	1,603.3554	1,603.3554	0.0307	0.0294	1,612.8833
Total		**0.1938**	**1.6613**	**0.7431**	**0.0106**		**0.1339**	**0.1339**		**0.1339**	**0.1339**	**0.0000**	**1,917.9301**	**1,917.9301**	**0.0368**	**0.0352**	**1,929.3274**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.52804e+006	201.0013	0.0201	4.1600e-003	202.7431
Elementary School	353642	46.5187	4.6500e-003	9.6000e-004	46.9219
Regional Shopping Center	1.19669e+006	157.4141	0.0157	3.2600e-003	158.7782
Single Family Housing	9.82012e+006	1,291.7556	0.1292	0.0267	1,302.9494
Total		**1,696.6898**	**0.1697**	**0.0351**	**1,711.3925**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.52804e+006	201.0013	0.0201	4.1600e-003	202.7431
Elementary School	353642	46.5187	4.6500e-003	9.6000e-004	46.9219
Regional Shopping Center	1.19669e+006	157.4141	0.0157	3.2600e-003	158.7782
Single Family Housing	9.82012e+006	1,291.7556	0.1292	0.0267	1,302.9494
Total		**1,696.6898**	**0.1697**	**0.0351**	**1,711.3925**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	12.9506	0.6918	11.4442	4.1800e-003		0.1071	0.1071		0.1071	0.1071	0.0000	669.3555	669.3555	0.0303	0.0119	673.6702
Unmitigated	18.2022	1.4698	59.1366	0.1598		7.8872	7.8872		7.8872	7.8872	1,041.7693	669.3555	1,711.1248	4.9004	0.0119	1,837.1909

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.3981					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	10.1449					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.3174	1.3402	47.9317	0.1592		7.8256	7.8256		7.8256	7.8256	1,041.7693	651.1107	1,692.8800	4.8825	0.0119	1,818.5007
Landscaping	0.3417	0.1296	11.2049	5.9000e-004		0.0616	0.0616		0.0616	0.0616	0.0000	18.2448	18.2448	0.0178	0.0000	18.6902
Total	**18.2022**	**1.4698**	**59.1366**	**0.1598**		**7.8872**	**7.8872**		**7.8872**	**7.8872**	**1,041.7693**	**669.3555**	**1,711.1248**	**4.9004**	**0.0119**	**1,837.1909**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.3981					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	10.1449					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0658	0.5622	0.2392	3.5900e-003		0.0455	0.0455		0.0455	0.0455	0.0000	651.1107	651.1107	0.0125	0.0119	654.9799
Landscaping	0.3417	0.1296	11.2049	5.9000e-004		0.0616	0.0616		0.0616	0.0616	0.0000	18.2448	18.2448	0.0178	0.0000	18.6902
Total	**12.9506**	**0.6918**	**11.4442**	**4.1800e-003**		**0.1071**	**0.1071**		**0.1071**	**0.1071**	**0.0000**	**669.3555**	**669.3555**	**0.0303**	**0.0119**	**673.6702**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	119.0039	2.8053	0.0679	209.3773
Unmitigated	143.0737	3.5061	0.0848	255.9913

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	22.1524 / 13.9656	29.2251	0.7241	0.0175	52.5425
Elementary School	1.81818 / 4.67532	4.0235	0.0596	1.4700e-003	5.9513
Regional Shopping Center	7.51836 / 4.60803	9.8581	0.2457	5.9400e-003	17.7713
Single Family Housing	75.7741 / 47.7706	99.9670	2.4767	0.0599	179.7261
Total		**143.0737**	**3.5061**	**0.0848**	**255.9913**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	17.7219 / 13.1137	24.2738	0.5793	0.0140	42.9355
Elementary School	1.45454 / 4.39013	3.5180	0.0477	1.1800e-003	5.0629
Regional Shopping Center	6.01469 / 4.32694	8.1814	0.1966	4.7600e-003	14.5145
Single Family Housing	60.6193 / 44.8566	83.0307	1.9817	0.0480	146.8645
Total		**119.0039**	**2.8053**	**0.0679**	**209.3773**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	350.6019	20.7200	0.0000	868.6014
Unmitigated	350.6019	20.7200	0.0000	868.6014

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	156.4	31.7478	1.8762	0.0000	78.6538
Elementary School	136.88	27.7854	1.6421	0.0000	68.8372
Regional Shopping Center	106.58	21.6348	1.2786	0.0000	53.5992
Single Family Housing	1327.32	269.4340	15.9231	0.0000	667.5112
Total		**350.6019**	**20.7200**	**0.0000**	**868.6014**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	156.4	31.7478	1.8762	0.0000	78.6538
Elementary School	136.88	27.7854	1.6421	0.0000	68.8372
Regional Shopping Center	106.58	21.6348	1.2786	0.0000	53.5992
Single Family Housing	1327.32	269.4340	15.9231	0.0000	667.5112
Total		**350.6019**	**20.7200**	**0.0000**	**868.6014**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	-873.1180	0.0000	0.0000	-873.1180

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Cropland	282.89 / 0	-1,753.9180	0.0000	0.0000	-1,753.9180
Grassland	10.18 / 10.18	0.0000	0.0000	0.0000	0.0000
Wetlands	10.18 / 10.18	0.0000	0.0000	0.0000	0.0000
Total		**-1,753.9180**	**0.0000**	**0.0000**	**-1,753.9180**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Mixed Hardwood	1200	880.8000	0.0000	0.0000	880.8000
Total		**880.8000**	**0.0000**	**0.0000**	**880.8000**

Stockton Tra Vigne - General Plan 2035 - 2020

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	340.00	Dwelling Unit	11.70	340,000.00	1078
Single Family Housing	1,066.00	Dwelling Unit	260.69	2,093,400.00	3381
Regional Shopping Center	117.60	1000sqft	9.00	117,612.00	0
General Light Industry	406.90	1000sqft	15.70	406,937.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensty factor as provided by PG&E:
https://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf

Land Use - Proposed GP land uses (9.0 C, 11.7 HDR, 260.69 ac LDR = 245.99 ac LDR. Industrial = 15.7. 20.36 acres of OS not included. Assumes 90 units built on the school site--worst case scenario.

Construction Phase - Based on project size and type.

Grading - Acres of Grading (Grading Phase): 283.68

Vehicle Trips - Trip gen adjusted per traffic engineer. Trip lengths remain defaults.

Woodstoves -

Energy Use -

Land Use Change -

Sequestration - Assumes approx 1 front yard tree per SFR unit. Commercial site plan shows approx 150 trees within landscaping.

Construction Off-road Equipment Mitigation - Tier 2 Engines

Mobile Land Use Mitigation -

Energy Mitigation -

Water Mitigation -

Trips and VMT -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	5
tblConstructionPhase	NumDays	180.00	20.00
tblConstructionPhase	NumDays	465.00	180.00
tblConstructionPhase	NumDays	4,650.00	1,047.00
tblConstructionPhase	NumDays	330.00	80.00
tblConstructionPhase	NumDays	330.00	1,068.00
tblConstructionPhase	PhaseEndDate	9/9/2019	1/28/2019
tblConstructionPhase	PhaseEndDate	6/21/2021	10/7/2019
tblConstructionPhase	PhaseEndDate	4/18/2039	10/11/2023

tblConstructionPhase	PhaseEndDate	7/23/2040	1/27/2020
tblConstructionPhase	PhaseEndDate	10/28/2041	1/10/2024
tblConstructionPhase	PhaseStartDate	9/10/2019	1/29/2019
tblConstructionPhase	PhaseStartDate	6/22/2021	10/8/2019
tblConstructionPhase	PhaseStartDate	4/19/2039	10/8/2019
tblConstructionPhase	PhaseStartDate	7/24/2040	12/8/2019
tblGrading	AcresOfGrading	450.00	283.68
tblGrading	AcresOfGrading	0.00	283.68
tblLandUse	LandUseSquareFeet	1,918,800.00	2,093,400.00
tblLandUse	LandUseSquareFeet	117,600.00	117,612.00
tblLandUse	LandUseSquareFeet	406,900.00	406,937.00
tblLandUse	LotAcreage	21.25	11.70
tblLandUse	LotAcreage	346.10	260.69
tblLandUse	LotAcreage	2.70	9.00
tblLandUse	LotAcreage	9.34	15.70
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblSequestration	NumberOfNewTrees	0.00	1,200.00
tblTripsAndVMT	WorkerTripNumber	837.00	1,247.00
tblTripsAndVMT	WorkerTripNumber	167.00	249.00
tblVehicleTrips	ST_TR	7.16	6.39
tblVehicleTrips	SU_TR	6.07	5.86
tblVehicleTrips	WD_TR	6.59	6.42
tblVehicleTrips	WD_TR	42.70	67.56
tblVehicleTrips	WD_TR	9.52	8.63
tblWoodstoves	NumberCatalytic	260.69	245.99
tblWoodstoves	NumberNoncatalytic	260.69	245.99

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	1.2325	7.5611	5.7715	0.0130	1.4103	0.3135	1.7238	0.5336	0.2896	0.8232	0.0000	1,177.0586	1,177.0586	0.2294	0.0000	1,182.7933
2020	7.7279	7.0860	8.9071	0.0282	1.7664	0.1988	1.9652	0.4744	0.1878	0.6621	0.0000	2,571.6501	2,571.6501	0.1725	0.0000	2,575.9623
2021	7.5710	6.2710	8.1055	0.0272	1.7585	0.1570	1.9155	0.4722	0.1483	0.6205	0.0000	2,482.2182	2,482.2182	0.1576	0.0000	2,486.1569
2022	7.4557	5.7704	7.5543	0.0265	1.7518	0.1337	1.8855	0.4704	0.1264	0.5968	0.0000	2,418.1966	2,418.1966	0.1503	0.0000	2,421.9548
2023	7.1901	3.8405	5.6963	0.0207	1.4243	0.0900	1.5143	0.3823	0.0851	0.4674	0.0000	1,887.9142	1,887.9142	0.1050	0.0000	1,890.5388
2024	0.2021	6.7000e-003	0.0269	8.0000e-005	7.9300e-003	2.9000e-004	8.2200e-003	2.1100e-003	2.9000e-004	2.4000e-003	0.0000	7.0378	7.0378	1.8000e-004	0.0000	7.0423
Maximum	**7.7279**	**7.5611**	**8.9071**	**0.0282**	**1.7664**	**0.3135**	**1.9652**	**0.5336**	**0.2896**	**0.8232**	**0.0000**	**2,571.6501**	**2,571.6501**	**0.2294**	**0.0000**	**2,575.9623**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	1.2325	7.5611	5.7715	0.0130	0.7859	0.3135	1.0994	0.2715	0.2896	0.5611	0.0000	1,177.0578	1,177.0578	0.2294	0.0000	1,182.7925
2020	7.7279	7.0859	8.9071	0.0282	1.7664	0.1988	1.9652	0.4744	0.1878	0.6621	0.0000	2,571.6497	2,571.6497	0.1725	0.0000	2,575.9619
2021	7.5710	6.2710	8.1055	0.0272	1.7585	0.1570	1.9155	0.4722	0.1483	0.6205	0.0000	2,482.2178	2,482.2178	0.1576	0.0000	2,486.1565
2022	7.4557	5.7704	7.5543	0.0265	1.7518	0.1337	1.8855	0.4704	0.1264	0.5968	0.0000	2,418.1962	2,418.1962	0.1503	0.0000	2,421.9544
2023	7.1901	3.8405	5.6963	0.0207	1.4243	0.0900	1.5143	0.3823	0.0851	0.4674	0.0000	1,887.9139	1,887.9139	0.1050	0.0000	1,890.5385
2024	0.2021	6.7000e-003	0.0269	8.0000e-005	7.9300e-003	2.9000e-004	8.2200e-003	2.1100e-003	2.9000e-004	2.4000e-003	0.0000	7.0378	7.0378	1.8000e-004	0.0000	7.0423
Maximum	**7.7279**	**7.5611**	**8.9071**	**0.0282**	**1.7664**	**0.3135**	**1.9652**	**0.4744**	**0.2896**	**0.6621**	**0.0000**	**2,571.6497**	**2,571.6497**	**0.2294**	**0.0000**	**2,575.9619**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**7.69**	**0.00**	**6.93**	**11.23**	**0.00**	**8.26**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2019**	**3-31-2019**	1.8164	1.8164
2	**4-1-2019**	**6-30-2019**	1.9310	1.9310
3	**7-1-2019**	**9-30-2019**	1.9522	1.9522
4	**10-1-2019**	**12-31-2019**	3.1145	3.1145
5	**1-1-2020**	**3-31-2020**	3.8171	3.8171

6	**4-1-2020**	**6-30-2020**	3.6326	3.6326
7	**7-1-2020**	**9-30-2020**	3.6725	3.6725
8	**10-1-2020**	**12-31-2020**	3.7076	3.7076
9	**1-1-2021**	**3-31-2021**	3.4343	3.4343
10	**4-1-2021**	**6-30-2021**	3.4441	3.4441
11	**7-1-2021**	**9-30-2021**	3.4819	3.4819
12	**10-1-2021**	**12-31-2021**	3.5106	3.5106
13	**1-1-2022**	**3-31-2022**	3.2926	3.2926
14	**4-1-2022**	**6-30-2022**	3.3044	3.3044
15	**7-1-2022**	**9-30-2022**	3.3407	3.3407
16	**10-1-2022**	**12-31-2022**	3.3658	3.3658
17	**1-1-2023**	**3-31-2023**	3.0410	3.0410
18	**4-1-2023**	**6-30-2023**	3.0552	3.0552
19	**7-1-2023**	**9-30-2023**	3.0888	3.0888
20	**10-1-2023**	**12-31-2023**	1.8907	1.8907
21	**1-1-2024**	**3-31-2024**	0.1868	0.1868
		Highest	3.8171	3.8171

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	19.8335	1.4251	58.3956	0.1595		7.8803	7.8803		7.8803	7.8803	1,041.7693	626.1521	1,667.9213	4.8984	0.0112	1,793.7087
Energy	0.2190	1.8978	0.9897	0.0120		0.1513	0.1513		0.1513	0.1513	0.0000	4,187.0974	4,187.0974	0.2435	0.0815	4,217.4791
Mobile	7.2077	49.0448	77.9130	0.2748	19.5048	0.2917	19.7965	5.2305	0.2752	5.5057	0.0000	25,305.2908	25,305.2908	1.3269	0.0000	25,338.4622
Waste						0.0000	0.0000		0.0000	0.0000	406.3067	0.0000	406.3067	24.0120	0.0000	1,006.6077
Water						0.0000	0.0000		0.0000	0.0000	61.6783	167.4248	229.1031	6.3517	0.1531	433.5032
Total	**27.2602**	**52.3678**	**137.2982**	**0.4463**	**19.5048**	**8.3233**	**27.8281**	**5.2305**	**8.3068**	**13.5373**	**1,509.7543**	**30,285.9651**	**31,795.7194**	**36.8325**	**0.2457**	**32,789.7607**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	14.5819	0.6471	10.7031	3.9100e-003		0.1001	0.1001		0.1001	0.1001	0.0000	626.1521	626.1521	0.0283	0.0112	630.1879
Energy	0.2190	1.8978	0.9897	0.0120		0.1513	0.1513		0.1513	0.1513	0.0000	4,187.0974	4,187.0974	0.2435	0.0815	4,217.4791
Mobile	6.9607	46.6226	72.3637	0.2511	17.6031	0.2665	17.8696	4.7206	0.2514	4.9719	0.0000	23,120.7696	23,120.7696	1.2629	0.0000	23,152.3419
Waste						0.0000	0.0000		0.0000	0.0000	406.3067	0.0000	406.3067	24.0120	0.0000	1,006.6077
Water						0.0000	0.0000		0.0000	0.0000	49.3427	137.9773	187.3200	5.0818	0.1225	350.8750
Total	**21.7616**	**49.1675**	**84.0565**	**0.2669**	**17.6031**	**0.5180**	**18.1210**	**4.7206**	**0.5028**	**5.2234**	**455.6494**	**28,071.9964**	**28,527.6457**	**30.6285**	**0.2152**	**29,357.4916**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**20.17**	**6.11**	**38.78**	**40.19**	**9.75**	**93.78**	**34.88**	**9.75**	**93.95**	**61.42**	**69.82**	**7.31**	**10.28**	**16.84**	**12.42**	**10.47**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	880.8000
Vegetation Land Change	-1,753.9180
Total	**-873.1180**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2019	1/28/2019	5	20	
2	Grading	Grading	1/29/2019	10/7/2019	5	180	
3	Building Construction	Building Construction	10/8/2019	10/11/2023	5	1047	
4	Paving	Paving	10/8/2019	1/27/2020	5	80	
5	Architectural Coating	Architectural Coating	12/8/2019	1/10/2024	5	1068	

Acres of Grading (Site Preparation Phase): 283.68

Acres of Grading (Grading Phase): 283.68

Acres of Paving: 0

Residential Indoor: 4,927,635; Residential Outdoor: 1,642,545; Non-Residential Indoor: 786,824; Non-Residential Outdoor: 262,275; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	1,247.00	236.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	249.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3311	0.0000	0.3311	0.1156	0.0000	0.1156	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0434	0.4557	0.2206	3.8000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	34.1687	34.1687	0.0108	0.0000	34.4390
Total	**0.0434**	**0.4557**	**0.2206**	**3.8000e-004**	**0.3311**	**0.0239**	**0.3550**	**0.1156**	**0.0220**	**0.1375**	**0.0000**	**34.1687**	**34.1687**	**0.0108**	**0.0000**	**34.4390**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-004	5.9000e-004	5.7100e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3116	1.3116	4.0000e-005	0.0000	1.3126
Total	**7.9000e-004**	**5.9000e-004**	**5.7100e-003**	**1.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.3116**	**1.3116**	**4.0000e-005**	**0.0000**	**1.3126**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1291	0.0000	0.1291	0.0451	0.0000	0.0451	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0434	0.4557	0.2206	3.8000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	34.1687	34.1687	0.0108	0.0000	34.4389
Total	**0.0434**	**0.4557**	**0.2206**	**3.8000e-004**	**0.1291**	**0.0239**	**0.1530**	**0.0451**	**0.0220**	**0.0671**	**0.0000**	**34.1687**	**34.1687**	**0.0108**	**0.0000**	**34.4389**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-004	5.9000e-004	5.7100e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3116	1.3116	4.0000e-005	0.0000	1.3126
Total	**7.9000e-004**	**5.9000e-004**	**5.7100e-003**	**1.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.3116**	**1.3116**	**4.0000e-005**	**0.0000**	**1.3126**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6924	0.0000	0.6924	0.3142	0.0000	0.3142	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4265	4.9068	3.0039	5.5800e-003		0.2144	0.2144		0.1973	0.1973	0.0000	501.3119	501.3119	0.1586	0.0000	505.2771
Total	**0.4265**	**4.9068**	**3.0039**	**5.5800e-003**	**0.6924**	**0.2144**	**0.9069**	**0.3142**	**0.1973**	**0.5114**	**0.0000**	**501.3119**	**501.3119**	**0.1586**	**0.0000**	**505.2771**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8700e-003	5.8500e-003	0.0571	1.5000e-004	0.0143	1.0000e-004	0.0144	3.8100e-003	9.0000e-005	3.9000e-003	0.0000	13.1164	13.1164	4.0000e-004	0.0000	13.1264
Total	**7.8700e-003**	**5.8500e-003**	**0.0571**	**1.5000e-004**	**0.0143**	**1.0000e-004**	**0.0144**	**3.8100e-003**	**9.0000e-005**	**3.9000e-003**	**0.0000**	**13.1164**	**13.1164**	**4.0000e-004**	**0.0000**	**13.1264**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2700	0.0000	0.2700	0.1225	0.0000	0.1225	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4265	4.9068	3.0039	5.5800e-003		0.2144	0.2144		0.1973	0.1973	0.0000	501.3113	501.3113	0.1586	0.0000	505.2765
Total	**0.4265**	**4.9068**	**3.0039**	**5.5800e-003**	**0.2700**	**0.2144**	**0.4845**	**0.1225**	**0.1973**	**0.3198**	**0.0000**	**501.3113**	**501.3113**	**0.1586**	**0.0000**	**505.2765**

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8700e-003	5.8500e-003	0.0571	1.5000e-004	0.0143	1.0000e-004	0.0144	3.8100e-003	9.0000e-005	3.9000e-003	0.0000	13.1164	13.1164	4.0000e-004	0.0000	13.1264
Total	**7.8700e-003**	**5.8500e-003**	**0.0571**	**1.5000e-004**	**0.0143**	**1.0000e-004**	**0.0144**	**3.8100e-003**	**9.0000e-005**	**3.9000e-003**	**0.0000**	**13.1164**	**13.1164**	**4.0000e-004**	**0.0000**	**13.1264**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0720	0.6429	0.5235	8.2000e-004		0.0393	0.0393		0.0370	0.0370	0.0000	71.7068	71.7068	0.0175	0.0000	72.1435
Total	**0.0720**	**0.6429**	**0.5235**	**8.2000e-004**		**0.0393**	**0.0393**		**0.0370**	**0.0370**	**0.0000**	**71.7068**	**71.7068**	**0.0175**	**0.0000**	**72.1435**

3.4 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0361	0.9367	0.2093	2.0500e-003	0.0476	7.1800e-003	0.0547	0.0137	6.8700e-003	0.0206	0.0000	194.9225	194.9225	0.0131	0.0000	195.2487
Worker	0.1664	0.1236	1.2068	3.0700e-003	0.3030	2.1300e-003	0.3051	0.0805	1.9600e-003	0.0825	0.0000	277.1448	277.1448	8.5000e-003	0.0000	277.3572
Total	**0.2025**	**1.0603**	**1.4161**	**5.1200e-003**	**0.3505**	**9.3100e-003**	**0.3598**	**0.0943**	**8.8300e-003**	**0.1031**	**0.0000**	**472.0674**	**472.0674**	**0.0216**	**0.0000**	**472.6059**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0720	0.6429	0.5235	8.2000e-004		0.0393	0.0393		0.0370	0.0370	0.0000	71.7067	71.7067	0.0175	0.0000	72.1434
Total	**0.0720**	**0.6429**	**0.5235**	**8.2000e-004**		**0.0393**	**0.0393**		**0.0370**	**0.0370**	**0.0000**	**71.7067**	**71.7067**	**0.0175**	**0.0000**	**72.1434**

3.4 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0361	0.9367	0.2093	2.0500e-003	0.0476	7.1800e-003	0.0547	0.0137	6.8700e-003	0.0206	0.0000	194.9225	194.9225	0.0131	0.0000	195.2487
Worker	0.1664	0.1236	1.2068	3.0700e-003	0.3030	2.1300e-003	0.3051	0.0805	1.9600e-003	0.0825	0.0000	277.1448	277.1448	8.5000e-003	0.0000	277.3572
Total	**0.2025**	**1.0603**	**1.4161**	**5.1200e-003**	**0.3505**	**9.3100e-003**	**0.3598**	**0.0943**	**8.8300e-003**	**0.1031**	**0.0000**	**472.0674**	**472.0674**	**0.0216**	**0.0000**	**472.6059**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4091	303.4091	0.0740	0.0000	305.2596
Total	**0.2777**	**2.5134**	**2.2072**	**3.5300e-003**		**0.1463**	**0.1463**		**0.1376**	**0.1376**	**0.0000**	**303.4091**	**303.4091**	**0.0740**	**0.0000**	**305.2596**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1253	3.6563	0.7782	8.7400e-003	0.2043	0.0202	0.2244	0.0590	0.0193	0.0783	0.0000	830.4036	830.4036	0.0515	0.0000	831.6919
Worker	0.6519	0.4682	4.6168	0.0128	1.3012	8.8500e-003	1.3101	0.3460	8.1500e-003	0.3541	0.0000	1,153.9388	1,153.9388	0.0318	0.0000	1,154.7341
Total	**0.7772**	**4.1245**	**5.3950**	**0.0215**	**1.5055**	**0.0290**	**1.5345**	**0.4050**	**0.0274**	**0.4324**	**0.0000**	**1,984.3424**	**1,984.3424**	**0.0833**	**0.0000**	**1,986.4260**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4087	303.4087	0.0740	0.0000	305.2592
Total	**0.2777**	**2.5134**	**2.2072**	**3.5300e-003**		**0.1463**	**0.1463**		**0.1376**	**0.1376**	**0.0000**	**303.4087**	**303.4087**	**0.0740**	**0.0000**	**305.2592**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1253	3.6563	0.7782	8.7400e-003	0.2043	0.0202	0.2244	0.0590	0.0193	0.0783	0.0000	830.4036	830.4036	0.0515	0.0000	831.6919
Worker	0.6519	0.4682	4.6168	0.0128	1.3012	8.8500e-003	1.3101	0.3460	8.1500e-003	0.3541	0.0000	1,153.9388	1,153.9388	0.0318	0.0000	1,154.7341
Total	**0.7772**	**4.1245**	**5.3950**	**0.0215**	**1.5055**	**0.0290**	**1.5345**	**0.4050**	**0.0274**	**0.4324**	**0.0000**	**1,984.3424**	**1,984.3424**	**0.0833**	**0.0000**	**1,986.4260**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2867	302.2867	0.0729	0.0000	304.1099
Total	**0.2481**	**2.2749**	**2.1631**	**3.5100e-003**		**0.1251**	**0.1251**		**0.1176**	**0.1176**	**0.0000**	**302.2867**	**302.2867**	**0.0729**	**0.0000**	**304.1099**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1022	3.2989	0.6801	8.6300e-003	0.2035	9.3800e-003	0.2129	0.0588	8.9700e-003	0.0678	0.0000	819.5408	819.5408	0.0484	0.0000	820.7518
Worker	0.5996	0.4151	4.1887	0.0122	1.2962	8.5000e-003	1.3047	0.3446	7.8300e-003	0.3525	0.0000	1,106.1880	1,106.1880	0.0283	0.0000	1,106.8943
Total	**0.7018**	**3.7140**	**4.8688**	**0.0209**	**1.4997**	**0.0179**	**1.5176**	**0.4034**	**0.0168**	**0.4202**	**0.0000**	**1,925.7288**	**1,925.7288**	**0.0767**	**0.0000**	**1,927.6461**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2863	302.2863	0.0729	0.0000	304.1095
Total	**0.2481**	**2.2749**	**2.1631**	**3.5100e-003**		**0.1251**	**0.1251**		**0.1176**	**0.1176**	**0.0000**	**302.2863**	**302.2863**	**0.0729**	**0.0000**	**304.1095**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1022	3.2989	0.6801	8.6300e-003	0.2035	9.3800e-003	0.2129	0.0588	8.9700e-003	0.0678	0.0000	819.5408	819.5408	0.0484	0.0000	820.7518
Worker	0.5996	0.4151	4.1887	0.0122	1.2962	8.5000e-003	1.3047	0.3446	7.8300e-003	0.3525	0.0000	1,106.1880	1,106.1880	0.0283	0.0000	1,106.8943
Total	**0.7018**	**3.7140**	**4.8688**	**0.0209**	**1.4997**	**0.0179**	**1.5176**	**0.4034**	**0.0168**	**0.4202**	**0.0000**	**1,925.7288**	**1,925.7288**	**0.0767**	**0.0000**	**1,927.6461**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2428	301.2428	0.0722	0.0000	303.0471
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2428**	**301.2428**	**0.0722**	**0.0000**	**303.0471**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0944	3.1134	0.6250	8.5100e-003	0.2027	8.0900e-003	0.2108	0.0586	7.7400e-003	0.0663	0.0000	808.7734	808.7734	0.0458	0.0000	809.9183
Worker	0.5542	0.3700	3.8063	0.0118	1.2913	8.2100e-003	1.2995	0.3433	7.5600e-003	0.3509	0.0000	1,062.7741	1,062.7741	0.0252	0.0000	1,063.4035
Total	**0.6486**	**3.4834**	**4.4313**	**0.0203**	**1.4940**	**0.0163**	**1.5103**	**0.4019**	**0.0153**	**0.4172**	**0.0000**	**1,871.5476**	**1,871.5476**	**0.0710**	**0.0000**	**1,873.3218**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2425	301.2425	0.0722	0.0000	303.0467
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2425**	**301.2425**	**0.0722**	**0.0000**	**303.0467**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0944	3.1134	0.6250	8.5100e-003	0.2027	8.0900e-003	0.2108	0.0586	7.7400e-003	0.0663	0.0000	808.7734	808.7734	0.0458	0.0000	809.9183
Worker	0.5542	0.3700	3.8063	0.0118	1.2913	8.2100e-003	1.2995	0.3433	7.5600e-003	0.3509	0.0000	1,062.7741	1,062.7741	0.0252	0.0000	1,063.4035
Total	**0.6486**	**3.4834**	**4.4313**	**0.0203**	**1.4940**	**0.0163**	**1.5103**	**0.4019**	**0.0153**	**0.4172**	**0.0000**	**1,871.5476**	**1,871.5476**	**0.0710**	**0.0000**	**1,873.3218**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1596	1.4601	1.6488	2.7300e-003		0.0710	0.0710		0.0668	0.0668	0.0000	235.2818	235.2818	0.0560	0.0000	236.6811
Total	**0.1596**	**1.4601**	**1.6488**	**2.7300e-003**		**0.0710**	**0.0710**		**0.0668**	**0.0668**	**0.0000**	**235.2818**	**235.2818**	**0.0560**	**0.0000**	**236.6811**

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0523	1.8861	0.4110	6.4900e-003	0.1583	1.9400e-003	0.1602	0.0457	1.8500e-003	0.0476	0.0000	616.2236	616.2236	0.0250	0.0000	616.8484
Worker	0.4023	0.2588	2.7084	8.8300e-003	1.0082	6.2300e-003	1.0144	0.2680	5.7300e-003	0.2738	0.0000	798.9003	798.9003	0.0176	0.0000	799.3390
Total	**0.4546**	**2.1448**	**3.1194**	**0.0153**	**1.1664**	**8.1700e-003**	**1.1746**	**0.3138**	**7.5800e-003**	**0.3214**	**0.0000**	**1,415.1239**	**1,415.1239**	**0.0425**	**0.0000**	**1,416.1874**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1596	1.4601	1.6488	2.7300e-003		0.0710	0.0710		0.0668	0.0668	0.0000	235.2815	235.2815	0.0560	0.0000	236.6808
Total	**0.1596**	**1.4601**	**1.6488**	**2.7300e-003**		**0.0710**	**0.0710**		**0.0668**	**0.0668**	**0.0000**	**235.2815**	**235.2815**	**0.0560**	**0.0000**	**236.6808**

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0523	1.8861	0.4110	6.4900e-003	0.1583	1.9400e-003	0.1602	0.0457	1.8500e-003	0.0476	0.0000	616.2236	616.2236	0.0250	0.0000	616.8484
Worker	0.4023	0.2588	2.7084	8.8300e-003	1.0082	6.2300e-003	1.0144	0.2680	5.7300e-003	0.2738	0.0000	798.9003	798.9003	0.0176	0.0000	799.3390
Total	**0.4546**	**2.1448**	**3.1194**	**0.0153**	**1.1664**	**8.1700e-003**	**1.1746**	**0.3138**	**7.5800e-003**	**0.3214**	**0.0000**	**1,415.1239**	**1,415.1239**	**0.0425**	**0.0000**	**1,416.1874**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0444	0.4649	0.4473	7.0000e-004		0.0252	0.0252		0.0231	0.0231	0.0000	62.4493	62.4493	0.0198	0.0000	62.9433
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0444**	**0.4649**	**0.4473**	**7.0000e-004**		**0.0252**	**0.0252**		**0.0231**	**0.0231**	**0.0000**	**62.4493**	**62.4493**	**0.0198**	**0.0000**	**62.9433**

3.5 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-003	1.4900e-003	0.0145	4.0000e-005	3.6400e-003	3.0000e-005	3.6700e-003	9.7000e-004	2.0000e-005	9.9000e-004	0.0000	3.3337	3.3337	1.0000e-004	0.0000	3.3363
Total	**2.0000e-003**	**1.4900e-003**	**0.0145**	**4.0000e-005**	**3.6400e-003**	**3.0000e-005**	**3.6700e-003**	**9.7000e-004**	**2.0000e-005**	**9.9000e-004**	**0.0000**	**3.3337**	**3.3337**	**1.0000e-004**	**0.0000**	**3.3363**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0444	0.4649	0.4473	7.0000e-004		0.0252	0.0252		0.0231	0.0231	0.0000	62.4492	62.4492	0.0198	0.0000	62.9432
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0444**	**0.4649**	**0.4473**	**7.0000e-004**		**0.0252**	**0.0252**		**0.0231**	**0.0231**	**0.0000**	**62.4492**	**62.4492**	**0.0198**	**0.0000**	**62.9432**

3.5 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-003	1.4900e-003	0.0145	4.0000e-005	3.6400e-003	3.0000e-005	3.6700e-003	9.7000e-004	2.0000e-005	9.9000e-004	0.0000	3.3337	3.3337	1.0000e-004	0.0000	3.3363
Total	**2.0000e-003**	**1.4900e-003**	**0.0145**	**4.0000e-005**	**3.6400e-003**	**3.0000e-005**	**3.6700e-003**	**9.7000e-004**	**2.0000e-005**	**9.9000e-004**	**0.0000**	**3.3337**	**3.3337**	**1.0000e-004**	**0.0000**	**3.3363**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0129	0.1336	0.1392	2.2000e-004		7.1500e-003	7.1500e-003		6.5800e-003	6.5800e-003	0.0000	19.0268	19.0268	6.1500e-003	0.0000	19.1807
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0129**	**0.1336**	**0.1392**	**2.2000e-004**		**7.1500e-003**	**7.1500e-003**		**6.5800e-003**	**6.5800e-003**	**0.0000**	**19.0268**	**19.0268**	**6.1500e-003**	**0.0000**	**19.1807**

3.5 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-004	4.1000e-004	4.0300e-003	1.0000e-005	1.1400e-003	1.0000e-005	1.1400e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	1.0066	1.0066	3.0000e-005	0.0000	1.0073
Total	**5.7000e-004**	**4.1000e-004**	**4.0300e-003**	**1.0000e-005**	**1.1400e-003**	**1.0000e-005**	**1.1400e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**1.0066**	**1.0066**	**3.0000e-005**	**0.0000**	**1.0073**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0129	0.1336	0.1392	2.2000e-004		7.1500e-003	7.1500e-003		6.5800e-003	6.5800e-003	0.0000	19.0268	19.0268	6.1500e-003	0.0000	19.1806
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0129**	**0.1336**	**0.1392**	**2.2000e-004**		**7.1500e-003**	**7.1500e-003**		**6.5800e-003**	**6.5800e-003**	**0.0000**	**19.0268**	**19.0268**	**6.1500e-003**	**0.0000**	**19.1806**

3.5 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-004	4.1000e-004	4.0300e-003	1.0000e-005	1.1400e-003	1.0000e-005	1.1400e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	1.0066	1.0066	3.0000e-005	0.0000	1.0073
Total	**5.7000e-004**	**4.1000e-004**	**4.0300e-003**	**1.0000e-005**	**1.1400e-003**	**1.0000e-005**	**1.1400e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**1.0066**	**1.0066**	**3.0000e-005**	**0.0000**	**1.0073**

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4216					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.2600e-003	0.0156	0.0157	3.0000e-005		1.0900e-003	1.0900e-003		1.0900e-003	1.0900e-003	0.0000	2.1703	2.1703	1.8000e-004	0.0000	2.1749
Total	**0.4239**	**0.0156**	**0.0157**	**3.0000e-005**		**1.0900e-003**	**1.0900e-003**		**1.0900e-003**	**1.0900e-003**	**0.0000**	**2.1703**	**2.1703**	**1.8000e-004**	**0.0000**	**2.1749**

3.6 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.2600e-003	6.8800e-003	0.0672	1.7000e-004	0.0169	1.2000e-004	0.0170	4.4800e-003	1.1000e-004	4.5900e-003	0.0000	15.4226	15.4226	4.7000e-004	0.0000	15.4345
Total	**9.2600e-003**	**6.8800e-003**	**0.0672**	**1.7000e-004**	**0.0169**	**1.2000e-004**	**0.0170**	**4.4800e-003**	**1.1000e-004**	**4.5900e-003**	**0.0000**	**15.4226**	**15.4226**	**4.7000e-004**	**0.0000**	**15.4345**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4216					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.2600e-003	0.0156	0.0157	3.0000e-005		1.0900e-003	1.0900e-003		1.0900e-003	1.0900e-003	0.0000	2.1703	2.1703	1.8000e-004	0.0000	2.1749
Total	**0.4239**	**0.0156**	**0.0157**	**3.0000e-005**		**1.0900e-003**	**1.0900e-003**		**1.0900e-003**	**1.0900e-003**	**0.0000**	**2.1703**	**2.1703**	**1.8000e-004**	**0.0000**	**2.1749**

3.6 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.2600e-003	6.8800e-003	0.0672	1.7000e-004	0.0169	1.2000e-004	0.0170	4.4800e-003	1.1000e-004	4.5900e-003	0.0000	15.4226	15.4226	4.7000e-004	0.0000	15.4345
Total	**9.2600e-003**	**6.8800e-003**	**0.0672**	**1.7000e-004**	**0.0169**	**1.2000e-004**	**0.0170**	**4.4800e-003**	**1.1000e-004**	**4.5900e-003**	**0.0000**	**15.4226**	**15.4226**	**4.7000e-004**	**0.0000**	**15.4345**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	6.4976					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.2206	0.2399	3.9000e-004		0.0145	0.0145		0.0145	0.0145	0.0000	33.4476	33.4476	2.5900e-003	0.0000	33.5124
Total	**6.5294**	**0.2206**	**0.2399**	**3.9000e-004**		**0.0145**	**0.0145**		**0.0145**	**0.0145**	**0.0000**	**33.4476**	**33.4476**	**2.5900e-003**	**0.0000**	**33.5124**

3.6 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1302	0.0935	0.9219	2.5500e-003	0.2598	1.7700e-003	0.2616	0.0691	1.6300e-003	0.0707	0.0000	230.4176	230.4176	6.3500e-003	0.0000	230.5764
Total	**0.1302**	**0.0935**	**0.9219**	**2.5500e-003**	**0.2598**	**1.7700e-003**	**0.2616**	**0.0691**	**1.6300e-003**	**0.0707**	**0.0000**	**230.4176**	**230.4176**	**6.3500e-003**	**0.0000**	**230.5764**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	6.4976					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.2206	0.2399	3.9000e-004		0.0145	0.0145		0.0145	0.0145	0.0000	33.4476	33.4476	2.5900e-003	0.0000	33.5123
Total	**6.5294**	**0.2206**	**0.2399**	**3.9000e-004**		**0.0145**	**0.0145**		**0.0145**	**0.0145**	**0.0000**	**33.4476**	**33.4476**	**2.5900e-003**	**0.0000**	**33.5123**

3.6 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1302	0.0935	0.9219	2.5500e-003	0.2598	1.7700e-003	0.2616	0.0691	1.6300e-003	0.0707	0.0000	230.4176	230.4176	6.3500e-003	0.0000	230.5764
Total	**0.1302**	**0.0935**	**0.9219**	**2.5500e-003**	**0.2598**	**1.7700e-003**	**0.2616**	**0.0691**	**1.6300e-003**	**0.0707**	**0.0000**	**230.4176**	**230.4176**	**6.3500e-003**	**0.0000**	**230.5764**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	6.4728					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0286	0.1993	0.2372	3.9000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	33.3200	33.3200	2.2900e-003	0.0000	33.3771
Total	**6.5014**	**0.1993**	**0.2372**	**3.9000e-004**		**0.0123**	**0.0123**		**0.0123**	**0.0123**	**0.0000**	**33.3200**	**33.3200**	**2.2900e-003**	**0.0000**	**33.3771**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1197	0.0829	0.8364	2.4400e-003	0.2588	1.7000e-003	0.2605	0.0688	1.5600e-003	0.0704	0.0000	220.8828	220.8828	5.6400e-003	0.0000	221.0238
Total	**0.1197**	**0.0829**	**0.8364**	**2.4400e-003**	**0.2588**	**1.7000e-003**	**0.2605**	**0.0688**	**1.5600e-003**	**0.0704**	**0.0000**	**220.8828**	**220.8828**	**5.6400e-003**	**0.0000**	**221.0238**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	6.4728					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0286	0.1993	0.2372	3.9000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	33.3199	33.3199	2.2900e-003	0.0000	33.3771
Total	**6.5014**	**0.1993**	**0.2372**	**3.9000e-004**		**0.0123**	**0.0123**		**0.0123**	**0.0123**	**0.0000**	**33.3199**	**33.3199**	**2.2900e-003**	**0.0000**	**33.3771**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1197	0.0829	0.8364	2.4400e-003	0.2588	1.7000e-003	0.2605	0.0688	1.5600e-003	0.0704	0.0000	220.8828	220.8828	5.6400e-003	0.0000	221.0238
Total	**0.1197**	**0.0829**	**0.8364**	**2.4400e-003**	**0.2588**	**1.7000e-003**	**0.2605**	**0.0688**	**1.5600e-003**	**0.0704**	**0.0000**	**220.8828**	**220.8828**	**5.6400e-003**	**0.0000**	**221.0238**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	6.4480					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.1831	0.2358	3.9000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	33.1923	33.1923	2.1600e-003	0.0000	33.2463
Total	**6.4746**	**0.1831**	**0.2358**	**3.9000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**33.1923**	**33.1923**	**2.1600e-003**	**0.0000**	**33.2463**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1107	0.0739	0.7600	2.3500e-003	0.2578	1.6400e-003	0.2595	0.0686	1.5100e-003	0.0701	0.0000	212.2139	212.2139	5.0300e-003	0.0000	212.3396
Total	**0.1107**	**0.0739**	**0.7600**	**2.3500e-003**	**0.2578**	**1.6400e-003**	**0.2595**	**0.0686**	**1.5100e-003**	**0.0701**	**0.0000**	**212.2139**	**212.2139**	**5.0300e-003**	**0.0000**	**212.3396**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	6.4480					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.1831	0.2358	3.9000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	33.1923	33.1923	2.1600e-003	0.0000	33.2463
Total	**6.4746**	**0.1831**	**0.2358**	**3.9000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**33.1923**	**33.1923**	**2.1600e-003**	**0.0000**	**33.2463**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1107	0.0739	0.7600	2.3500e-003	0.2578	1.6400e-003	0.2595	0.0686	1.5100e-003	0.0701	0.0000	212.2139	212.2139	5.0300e-003	0.0000	212.3396
Total	**0.1107**	**0.0739**	**0.7600**	**2.3500e-003**	**0.2578**	**1.6400e-003**	**0.2595**	**0.0686**	**1.5100e-003**	**0.0701**	**0.0000**	**212.2139**	**212.2139**	**5.0300e-003**	**0.0000**	**212.3396**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	6.4480					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.1694	0.2355	3.9000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419
Total	**6.4730**	**0.1694**	**0.2355**	**3.9000e-004**		**9.2100e-003**	**9.2100e-003**		**9.2100e-003**	**9.2100e-003**	**0.0000**	**33.1923**	**33.1923**	**1.9900e-003**	**0.0000**	**33.2419**

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1029	0.0662	0.6927	2.2600e-003	0.2578	1.5900e-003	0.2594	0.0686	1.4700e-003	0.0700	0.0000	204.3162	204.3162	4.4900e-003	0.0000	204.4284
Total	**0.1029**	**0.0662**	**0.6927**	**2.2600e-003**	**0.2578**	**1.5900e-003**	**0.2594**	**0.0686**	**1.4700e-003**	**0.0700**	**0.0000**	**204.3162**	**204.3162**	**4.4900e-003**	**0.0000**	**204.4284**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	6.4480					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.1694	0.2354	3.9000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419
Total	**6.4730**	**0.1694**	**0.2354**	**3.9000e-004**		**9.2100e-003**	**9.2100e-003**		**9.2100e-003**	**9.2100e-003**	**0.0000**	**33.1923**	**33.1923**	**1.9900e-003**	**0.0000**	**33.2419**

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1029	0.0662	0.6927	2.2600e-003	0.2578	1.5900e-003	0.2594	0.0686	1.4700e-003	0.0700	0.0000	204.3162	204.3162	4.4900e-003	0.0000	204.4284
Total	**0.1029**	**0.0662**	**0.6927**	**2.2600e-003**	**0.2578**	**1.5900e-003**	**0.2594**	**0.0686**	**1.4700e-003**	**0.0700**	**0.0000**	**204.3162**	**204.3162**	**4.4900e-003**	**0.0000**	**204.4284**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1984					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2000e-004	4.8800e-003	7.2400e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	1.0213	1.0213	6.0000e-005	0.0000	1.0227
Total	**0.1991**	**4.8800e-003**	**7.2400e-003**	**1.0000e-005**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**1.0213**	**1.0213**	**6.0000e-005**	**0.0000**	**1.0227**

3.6 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9600e-003	1.8300e-003	0.0196	7.0000e-005	7.9300e-003	5.0000e-005	7.9800e-003	2.1100e-003	4.0000e-005	2.1500e-003	0.0000	6.0165	6.0165	1.2000e-004	0.0000	6.0196
Total	**2.9600e-003**	**1.8300e-003**	**0.0196**	**7.0000e-005**	**7.9300e-003**	**5.0000e-005**	**7.9800e-003**	**2.1100e-003**	**4.0000e-005**	**2.1500e-003**	**0.0000**	**6.0165**	**6.0165**	**1.2000e-004**	**0.0000**	**6.0196**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1984					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2000e-004	4.8800e-003	7.2400e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	1.0213	1.0213	6.0000e-005	0.0000	1.0227
Total	**0.1991**	**4.8800e-003**	**7.2400e-003**	**1.0000e-005**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**1.0213**	**1.0213**	**6.0000e-005**	**0.0000**	**1.0227**

3.6 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9600e-003	1.8300e-003	0.0196	7.0000e-005	7.9300e-003	5.0000e-005	7.9800e-003	2.1100e-003	4.0000e-005	2.1500e-003	0.0000	6.0165	6.0165	1.2000e-004	0.0000	6.0196
Total	**2.9600e-003**	**1.8300e-003**	**0.0196**	**7.0000e-005**	**7.9300e-003**	**5.0000e-005**	**7.9800e-003**	**2.1100e-003**	**4.0000e-005**	**2.1500e-003**	**0.0000**	**6.0165**	**6.0165**	**1.2000e-004**	**0.0000**	**6.0196**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	6.9607	46.6226	72.3637	0.2511	17.6031	0.2665	17.8696	4.7206	0.2514	4.9719	0.0000	23,120.7696	23,120.7696	1.2629	0.0000	23,152.3419
Unmitigated	7.2077	49.0448	77.9130	0.2748	19.5048	0.2917	19.7965	5.2305	0.2752	5.5057	0.0000	25,305.2908	25,305.2908	1.3269	0.0000	25,338.4622

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	2,182.80	2,172.60	1992.40	6,242,311	5,633,686
Regional Shopping Center	7,945.06	5,876.47	2968.22	12,165,425	10,979,296
Single Family Housing	9,199.58	10,564.06	9188.92	27,219,143	24,565,277
General Light Industry	2,836.09	537.11	276.69	6,253,703	5,643,967
Total	22,163.53	19,150.24	14,426.24	51,880,582	46,822,226

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	45.60	19.00	35.40	86	11	3
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	10.80	7.30	7.50	45.60	19.00	35.40	86	11	3
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931
Regional Shopping Center	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931
Single Family Housing	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931
General Light Industry	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,019.7418	2,019.7418	0.2020	0.0418	2,037.2439
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,019.7418	2,019.7418	0.2020	0.0418	2,037.2439
NaturalGas Mitigated	0.2190	1.8978	0.9897	0.0120		0.1513	0.1513		0.1513	0.1513	0.0000	2,167.3556	2,167.3556	0.0415	0.0397	2,180.2351
NaturalGas Unmitigated	0.2190	1.8978	0.9897	0.0120		0.1513	0.1513		0.1513	0.1513	0.0000	2,167.3556	2,167.3556	0.0415	0.0397	2,180.2351

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	4.11356e+006	0.0222	0.1896	0.0807	1.2100e-003		0.0153	0.0153		0.0153	0.0153	0.0000	219.5155	219.5155	4.2100e-003	4.0200e-003	220.8200
General Light Industry	7.58531e+006	0.0409	0.3718	0.3123	2.2300e-003		0.0283	0.0283		0.0283	0.0283	0.0000	404.7808	404.7808	7.7600e-003	7.4200e-003	407.1862
Regional Shopping Center	1.37606e+006	7.4200e-003	0.0675	0.0567	4.0000e-004		5.1300e-003	5.1300e-003		5.1300e-003	5.1300e-003	0.0000	73.4318	73.4318	1.4100e-003	1.3500e-003	73.8682
Single Family Housing	2.75398e+007	0.1485	1.2690	0.5400	8.1000e-003		0.1026	0.1026		0.1026	0.1026	0.0000	1,469.6275	1,469.6275	0.0282	0.0269	1,478.3608
Total		**0.2190**	**1.8978**	**0.9897**	**0.0119**		**0.1513**	**0.1513**		**0.1513**	**0.1513**	**0.0000**	**2,167.3556**	**2,167.3556**	**0.0416**	**0.0397**	**2,180.2351**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	4.11356e+006	0.0222	0.1896	0.0807	1.2100e-003		0.0153	0.0153		0.0153	0.0153	0.0000	219.5155	219.5155	4.2100e-003	4.0200e-003	220.8200
General Light Industry	7.58531e+006	0.0409	0.3718	0.3123	2.2300e-003		0.0283	0.0283		0.0283	0.0283	0.0000	404.7808	404.7808	7.7600e-003	7.4200e-003	407.1862
Regional Shopping Center	1.37606e+006	7.4200e-003	0.0675	0.0567	4.0000e-004		5.1300e-003	5.1300e-003		5.1300e-003	5.1300e-003	0.0000	73.4318	73.4318	1.4100e-003	1.3500e-003	73.8682
Single Family Housing	2.75398e+007	0.1485	1.2690	0.5400	8.1000e-003		0.1026	0.1026		0.1026	0.1026	0.0000	1,469.6275	1,469.6275	0.0282	0.0269	1,478.3608
Total		**0.2190**	**1.8978**	**0.9897**	**0.0119**		**0.1513**	**0.1513**		**0.1513**	**0.1513**	**0.0000**	**2,167.3556**	**2,167.3556**	**0.0416**	**0.0397**	**2,180.2351**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.52804e+006	201.0013	0.0201	4.1600e-003	202.7431
General Light Industry	3.43862e+006	452.3219	0.0452	9.3600e-003	456.2415
Regional Shopping Center	1.38665e+006	182.4018	0.0182	3.7700e-003	183.9824
Single Family Housing	9.00107e+006	1,184.0168	0.1184	0.0245	1,194.2769
Total		**2,019.7418**	**0.2020**	**0.0418**	**2,037.2439**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.52804e+006	201.0013	0.0201	4.1600e-003	202.7431
General Light Industry	3.43862e+006	452.3219	0.0452	9.3600e-003	456.2415
Regional Shopping Center	1.38665e+006	182.4018	0.0182	3.7700e-003	183.9824
Single Family Housing	9.00107e+006	1,184.0168	0.1184	0.0245	1,194.2769
Total		**2,019.7418**	**0.2020**	**0.0418**	**2,037.2439**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	14.5819	0.6471	10.7031	3.9100e-003		0.1001	0.1001		0.1001	0.1001	0.0000	626.1521	626.1521	0.0283	0.0112	630.1879
Unmitigated	19.8335	1.4251	58.3956	0.1595		7.8803	7.8803		7.8803	7.8803	1,041.7693	626.1521	1,667.9213	4.8984	0.0112	1,793.7087

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.6487					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	11.5523					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.3132	1.3040	47.9163	0.1590		7.8227	7.8227		7.8227	7.8227	1,041.7693	609.0896	1,650.8589	4.8817	0.0112	1,776.2299
Landscaping	0.3194	0.1212	10.4793	5.5000e-004		0.0576	0.0576		0.0576	0.0576	0.0000	17.0625	17.0625	0.0167	0.0000	17.4788
Total	**19.8335**	**1.4251**	**58.3955**	**0.1595**		**7.8803**	**7.8803**		**7.8803**	**7.8803**	**1,041.7693**	**626.1521**	**1,667.9213**	**4.8984**	**0.0112**	**1,793.7087**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.6487					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	11.5523					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0616	0.5259	0.2238	3.3600e-003		0.0425	0.0425		0.0425	0.0425	0.0000	609.0896	609.0896	0.0117	0.0112	612.7091
Landscaping	0.3194	0.1212	10.4793	5.5000e-004		0.0576	0.0576		0.0576	0.0576	0.0000	17.0625	17.0625	0.0167	0.0000	17.4788
Total	**14.5819**	**0.6471**	**10.7031**	**3.9100e-003**		**0.1001**	**0.1001**		**0.1001**	**0.1001**	**0.0000**	**626.1521**	**626.1521**	**0.0283**	**0.0112**	**630.1879**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	187.3200	5.0818	0.1225	350.8750
Unmitigated	229.1031	6.3517	0.1531	433.5032

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	22.1524 / 13.9656	29.2251	0.7241	0.0175	52.5425
General Light Industry	94.0956 / 0	96.8269	3.0728	0.0738	195.6344
Regional Shopping Center	8.71093 / 5.33896	11.4218	0.2847	6.8800e-003	20.5902
Single Family Housing	69.4542 / 43.7863	91.6293	2.2701	0.0549	164.7361
Total		**229.1031**	**6.3517**	**0.1530**	**433.5032**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	17.7219 / 13.1137	24.2738	0.5793	0.0140	42.9355
General Light Industry	75.2765 / 0	77.4615	2.4582	0.0590	156.5075
Regional Shopping Center	6.96874 / 5.01328	9.4791	0.2278	5.5100e-003	16.8168
Single Family Housing	55.5634 / 41.1154	76.1055	1.8164	0.0440	134.6153
Total		**187.3200**	**5.0818**	**0.1225**	**350.8750**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	406.3067	24.0120	0.0000	1,006.6077
Unmitigated	406.3067	24.0120	0.0000	1,006.6077

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	156.4	31.7478	1.8762	0.0000	78.6538
General Light Industry	504.56	102.4211	6.0529	0.0000	253.7440
Regional Shopping Center	123.48	25.0653	1.4813	0.0000	62.0983
Single Family Housing	1217.16	247.0725	14.6016	0.0000	612.1116
Total		**406.3067**	**24.0120**	**0.0000**	**1,006.6077**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	156.4	31.7478	1.8762	0.0000	78.6538
General Light Industry	504.56	102.4211	6.0529	0.0000	253.7440
Regional Shopping Center	123.48	25.0653	1.4813	0.0000	62.0983
Single Family Housing	1217.16	247.0725	14.6016	0.0000	612.1116
Total		**406.3067**	**24.0120**	**0.0000**	**1,006.6077**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	-873.1180	0.0000	0.0000	-873.1180

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Cropland	282.89 / 0	-1,753.9180	0.0000	0.0000	-1,753.9180
Grassland	10.18 / 10.18	0.0000	0.0000	0.0000	0.0000
Wetlands	10.18 / 10.18	0.0000	0.0000	0.0000	0.0000
Total		**-1,753.9180**	**0.0000**	**0.0000**	**-1,753.9180**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Mixed Hardwood	1200	880.8000	0.0000	0.0000	880.8000
Total		**880.8000**	**0.0000**	**0.0000**	**880.8000**

Stockton Tra Vigne - Proposed Project - 2005

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	750.00	Student	14.70	62,702.53	0
Apartments Low Rise	309.00	Dwelling Unit	10.67	309,000.00	980
Single Family Housing	1,515.00	Dwelling Unit	248.52	2,727,000.00	4806
Regional Shopping Center	86.99	1000sqft	9.00	86,990.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2005
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	489	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - As provided by PG&E:
https://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf

Land Use - Land Use - Existing GP land uses (9.0 C, 10.67 HDR, 283.58 LDR (minus 20.36 ac of undevelopable LDR along Bear Creek and minus the 14.7 acre school). Existing 15.57 Industrial not included.

Construction Phase - Based on project size and type.

Off-road Equipment -

Grading - Maximum acres of grading = 283.68

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves -

Area Coating -

Energy Use -

Land Use Change - Land Use Change - 282.89 acres of initial cropland; 10.18 acres of grassland; 10.18 acres of wetlands

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Architectural Coating -

Sequestration - Sequestration - Assumes approx 1 front yard tree per SFR unit (1,515 Mixed Hardwood)

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	5
tblConstructionPhase	NumDays	180.00	20.00
tblConstructionPhase	NumDays	465.00	181.00
tblConstructionPhase	NumDays	4,650.00	1,046.00
tblConstructionPhase	NumDays	330.00	80.00
tblConstructionPhase	NumDays	330.00	1,068.00
tblConstructionPhase	PhaseEndDate	9/8/2004	1/28/2004
tblConstructionPhase	PhaseEndDate	6/21/2006	10/7/2004
tblConstructionPhase	PhaseEndDate	4/17/2024	10/10/2008
tblConstructionPhase	PhaseEndDate	7/23/2025	1/27/2005
tblConstructionPhase	PhaseEndDate	10/28/2026	1/9/2009
tblConstructionPhase	PhaseStartDate	9/9/2004	1/29/2004
tblConstructionPhase	PhaseStartDate	6/22/2006	10/8/2004
tblConstructionPhase	PhaseStartDate	4/18/2024	10/8/2004
tblConstructionPhase	PhaseStartDate	7/24/2025	12/8/2004
tblGrading	AcresOfGrading	452.50	283.68
tblLandUse	LotAcreage	1.44	14.70
tblLandUse	LotAcreage	19.31	10.67
tblLandUse	LotAcreage	491.88	248.52
tblLandUse	LotAcreage	2.00	9.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	489
tblSequestration	NumberOfNewTrees	0.00	1,515.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2004	3.8207	18.0291	16.9133	0.1050	1.1514	0.9323	2.0837	0.4893	0.9280	1.4174	0.0000	1,227.5998	1,227.5998	0.2315	0.0000	1,233.3862
2005	15.9528	17.9249	26.4547	0.1313	1.2111	0.8396	2.0507	0.3264	0.8254	1.1518	0.0000	2,291.4140	2,291.4140	0.3770	0.0000	2,300.8382
2006	15.8958	17.5269	26.2638	0.1287	1.2099	0.8145	2.0245	0.3261	0.8003	1.1264	0.0000	2,267.2853	2,267.2853	0.3723	0.0000	2,276.5937
2007	15.9569	17.5943	26.3648	0.1292	1.2146	0.8177	2.0323	0.3273	0.8034	1.1307	0.0000	2,276.0057	2,276.0057	0.3738	0.0000	2,285.3499
2008	15.2362	13.9474	21.3322	0.1023	0.9872	0.6511	1.6384	0.2659	0.6399	0.9058	0.0000	1,827.5397	1,827.5397	0.2988	0.0000	1,835.0097
2009	0.3336	0.0236	0.0875	1.6000e-004	4.5700e-003	1.4500e-003	6.0200e-003	1.2200e-003	1.4400e-003	2.6600e-003	0.0000	5.8646	5.8646	8.0000e-004	0.0000	5.8847
Maximum	**15.9569**	**18.0291**	**26.4547**	**0.1313**	**1.2146**	**0.9323**	**2.0837**	**0.4893**	**0.9280**	**1.4174**	**0.0000**	**2,291.4140**	**2,291.4140**	**0.3770**	**0.0000**	**2,300.8382**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2004	3.8207	18.0291	16.9132	0.1050	1.1514	0.9323	2.0837	0.4893	0.9280	1.4174	0.0000	1,227.5988	1,227.5988	0.2315	0.0000	1,233.3853
2005	15.9528	17.9249	26.4547	0.1313	1.2111	0.8396	2.0507	0.3264	0.8254	1.1518	0.0000	2,291.4135	2,291.4135	0.3770	0.0000	2,300.8377
2006	15.8958	17.5269	26.2638	0.1287	1.2099	0.8145	2.0245	0.3261	0.8003	1.1264	0.0000	2,267.2849	2,267.2849	0.3723	0.0000	2,276.5933
2007	15.9569	17.5943	26.3648	0.1292	1.2146	0.8177	2.0323	0.3273	0.8034	1.1307	0.0000	2,276.0052	2,276.0052	0.3738	0.0000	2,285.3494
2008	15.2362	13.9474	21.3322	0.1023	0.9872	0.6511	1.6384	0.2659	0.6399	0.9058	0.0000	1,827.5394	1,827.5394	0.2988	0.0000	1,835.0093
2009	0.3336	0.0236	0.0875	1.6000e-004	4.5700e-003	1.4500e-003	6.0200e-003	1.2200e-003	1.4400e-003	2.6600e-003	0.0000	5.8646	5.8646	8.0000e-004	0.0000	5.8847
Maximum	**15.9569**	**18.0291**	**26.4547**	**0.1313**	**1.2146**	**0.9323**	**2.0837**	**0.4893**	**0.9280**	**1.4174**	**0.0000**	**2,291.4135**	**2,291.4135**	**0.3770**	**0.0000**	**2,300.8377**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2004**	**3-31-2004**	4.0328	4.0328
2	**4-1-2004**	**6-30-2004**	4.4830	4.4830
3	**7-1-2004**	**9-30-2004**	4.5323	4.5323
4	**10-1-2004**	**12-31-2004**	8.8699	8.8699
5	**1-1-2005**	**3-31-2005**	8.8289	8.8289

6	**4-1-2005**	**6-30-2005**	8.2727	8.2727
7	**7-1-2005**	**9-30-2005**	8.3636	8.3636
8	**10-1-2005**	**12-31-2005**	8.5526	8.5526
9	**1-1-2006**	**3-31-2006**	8.3667	8.3667
10	**4-1-2006**	**6-30-2006**	8.2727	8.2727
11	**7-1-2006**	**9-30-2006**	8.3636	8.3636
12	**10-1-2006**	**12-31-2006**	8.5526	8.5526
13	**1-1-2007**	**3-31-2007**	8.3667	8.3667
14	**4-1-2007**	**6-30-2007**	8.2727	8.2727
15	**7-1-2007**	**9-30-2007**	8.3636	8.3636
16	**10-1-2007**	**12-31-2007**	8.5526	8.5526
17	**1-1-2008**	**3-31-2008**	8.4596	8.4596
18	**4-1-2008**	**6-30-2008**	8.2727	8.2727
19	**7-1-2008**	**9-30-2008**	8.3636	8.3636
20	**10-1-2008**	**12-31-2008**	3.9315	3.9315
21	**1-1-2009**	**3-31-2009**	0.3295	0.3295
		Highest	8.8699	8.8699

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	23.4073	1.6785	63.9774	0.1616		7.9470	7.9470		7.9470	7.9470	1,047.8334	812.3082	1,860.1415	4.9491	0.0145	1,988.1847
Energy	0.3211	2.7501	1.2106	0.0175		0.2219	0.2219		0.2219	0.2219	0.0000	6,381.3027	6,381.3027	0.2509	0.0976	6,416.6501
Mobile	31.6016	146.7350	363.0912	1.0751	20.8153	3.2897	24.1050	5.5939	3.1356	8.7295	0.0000	31,138.9950	31,138.9950	4.3756	0.0000	31,248.3845
Waste						0.0000	0.0000		0.0000	0.0000	426.3866	0.0000	426.3866	25.1987	0.0000	1,056.3547
Water						0.0000	0.0000		0.0000	0.0000	40.3238	217.4069	257.7307	4.1545	0.1005	391.5314
Total	**55.3300**	**151.1635**	**428.2791**	**1.2542**	**20.8153**	**11.4586**	**32.2739**	**5.5939**	**11.3045**	**16.8984**	**1,514.5438**	**38,550.0128**	**40,064.5566**	**38.9288**	**0.2125**	**41,101.1054**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	23.4073	1.6785	63.9774	0.1616		7.9470	7.9470		7.9470	7.9470	1,047.8334	812.3082	1,860.1415	4.9491	0.0145	1,988.1847
Energy	0.3211	2.7501	1.2106	0.0175		0.2219	0.2219		0.2219	0.2219	0.0000	6,381.3027	6,381.3027	0.2509	0.0976	6,416.6501
Mobile	31.6016	146.7350	363.0912	1.0751	20.8153	3.2897	24.1050	5.5939	3.1356	8.7295	0.0000	31,138.9950	31,138.9950	4.3756	0.0000	31,248.3845
Waste						0.0000	0.0000		0.0000	0.0000	426.3866	0.0000	426.3866	25.1987	0.0000	1,056.3547
Water						0.0000	0.0000		0.0000	0.0000	40.3238	213.4505	253.7743	4.1543	0.1004	387.5547
Total	**55.3300**	**151.1635**	**428.2791**	**1.2542**	**20.8153**	**11.4586**	**32.2739**	**5.5939**	**11.3045**	**16.8984**	**1,514.5438**	**38,546.0564**	**40,060.6002**	**38.9285**	**0.2125**	**41,097.1287**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.02**	**0.01**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	1,112.0100
Vegetation Land Change	-1,753.9180
Total	**-641.9080**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2004	1/28/2004	5	20	
2	Grading	Grading	1/29/2004	10/7/2004	5	181	
3	Building Construction	Building Construction	10/8/2004	10/10/2008	5	1046	
4	Paving	Paving	10/8/2004	1/27/2005	5	80	
5	Architectural Coating	Architectural Coating	12/8/2004	1/9/2009	5	1068	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 283.68

Acres of Paving: 0

Residential Indoor: 6,147,900; Residential Outdoor: 2,049,300; Non-Residential Indoor: 224,539; Non-Residential Outdoor: 74,846; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	822.00	220.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	164.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2004

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1121	0.8032	0.3078	4.5000e-003		0.0505	0.0505		0.0505	0.0505	0.0000	40.0046	40.0046	9.1300e-003	0.0000	40.2329
Total	**0.1121**	**0.8032**	**0.3078**	**4.5000e-003**	**0.1807**	**0.0505**	**0.2311**	**0.0993**	**0.0505**	**0.1498**	**0.0000**	**40.0046**	**40.0046**	**9.1300e-003**	**0.0000**	**40.2329**

3.2 Site Preparation - 2004

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4700e-003	5.4300e-003	0.0477	3.0000e-005	1.4300e-003	6.0000e-005	1.4900e-003	3.8000e-004	6.0000e-005	4.4000e-004	0.0000	1.5865	1.5865	2.7000e-004	0.0000	1.5934
Total	**4.4700e-003**	**5.4300e-003**	**0.0477**	**3.0000e-005**	**1.4300e-003**	**6.0000e-005**	**1.4900e-003**	**3.8000e-004**	**6.0000e-005**	**4.4000e-004**	**0.0000**	**1.5865**	**1.5865**	**2.7000e-004**	**0.0000**	**1.5934**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1121	0.8032	0.3078	4.5000e-003		0.0505	0.0505		0.0505	0.0505	0.0000	40.0046	40.0046	9.1300e-003	0.0000	40.2329
Total	**0.1121**	**0.8032**	**0.3078**	**4.5000e-003**	**0.1807**	**0.0505**	**0.2311**	**0.0993**	**0.0505**	**0.1498**	**0.0000**	**40.0046**	**40.0046**	**9.1300e-003**	**0.0000**	**40.2329**

3.2 Site Preparation - 2004

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4700e-003	5.4300e-003	0.0477	3.0000e-005	1.4300e-003	6.0000e-005	1.4900e-003	3.8000e-004	6.0000e-005	4.4000e-004	0.0000	1.5865	1.5865	2.7000e-004	0.0000	1.5934
Total	**4.4700e-003**	**5.4300e-003**	**0.0477**	**3.0000e-005**	**1.4300e-003**	**6.0000e-005**	**1.4900e-003**	**3.8000e-004**	**6.0000e-005**	**4.4000e-004**	**0.0000**	**1.5865**	**1.5865**	**2.7000e-004**	**0.0000**	**1.5934**

3.3 Grading - 2004

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6954	0.0000	0.6954	0.3158	0.0000	0.3158	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3686	11.0187	5.5706	0.0619		0.5811	0.5811		0.5811	0.5811	0.0000	592.1978	592.1978	0.1113	0.0000	594.9794
Total	**1.3686**	**11.0187**	**5.5706**	**0.0619**	**0.6954**	**0.5811**	**1.2765**	**0.3158**	**0.5811**	**0.8969**	**0.0000**	**592.1978**	**592.1978**	**0.1113**	**0.0000**	**594.9794**

3.3 Grading - 2004

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0450	0.0546	0.4792	2.7000e-004	0.0144	6.2000e-004	0.0150	3.8300e-003	5.7000e-004	4.4000e-003	0.0000	15.9535	15.9535	2.7500e-003	0.0000	16.0222
Total	**0.0450**	**0.0546**	**0.4792**	**2.7000e-004**	**0.0144**	**6.2000e-004**	**0.0150**	**3.8300e-003**	**5.7000e-004**	**4.4000e-003**	**0.0000**	**15.9535**	**15.9535**	**2.7500e-003**	**0.0000**	**16.0222**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6954	0.0000	0.6954	0.3158	0.0000	0.3158	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3686	11.0187	5.5706	0.0619		0.5811	0.5811		0.5811	0.5811	0.0000	592.1971	592.1971	0.1113	0.0000	594.9787
Total	**1.3686**	**11.0187**	**5.5706**	**0.0619**	**0.6954**	**0.5811**	**1.2765**	**0.3158**	**0.5811**	**0.8969**	**0.0000**	**592.1971**	**592.1971**	**0.1113**	**0.0000**	**594.9787**

3.3 Grading - 2004

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0450	0.0546	0.4792	2.7000e-004	0.0144	6.2000e-004	0.0150	3.8300e-003	5.7000e-004	4.4000e-003	0.0000	15.9535	15.9535	2.7500e-003	0.0000	16.0222
Total	**0.0450**	**0.0546**	**0.4792**	**2.7000e-004**	**0.0144**	**6.2000e-004**	**0.0150**	**3.8300e-003**	**5.7000e-004**	**4.4000e-003**	**0.0000**	**15.9535**	**15.9535**	**2.7500e-003**	**0.0000**	**16.0222**

3.4 Building Construction - 2004

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2661	1.4720	0.6820	9.2700e-003		0.1157	0.1157		0.1157	0.1157	0.0000	80.1726	80.1726	0.0217	0.0000	80.7144
Total	**0.2661**	**1.4720**	**0.6820**	**9.2700e-003**		**0.1157**	**0.1157**		**0.1157**	**0.1157**	**0.0000**	**80.1726**	**80.1726**	**0.0217**	**0.0000**	**80.7144**

3.4 Building Construction - 2004

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3122	2.3573	2.0642	0.0165	0.0443	0.0828	0.1271	0.0128	0.0792	0.0920	0.0000	183.8641	183.8641	0.0281	0.0000	184.5674
Worker	0.6230	0.7564	6.6380	3.7500e-003	0.1997	8.5300e-003	0.2082	0.0531	7.9100e-003	0.0610	0.0000	220.9773	220.9773	0.0381	0.0000	221.9289
Total	**0.9351**	**3.1137**	**8.7022**	**0.0203**	**0.2440**	**0.0913**	**0.3354**	**0.0659**	**0.0871**	**0.1530**	**0.0000**	**404.8413**	**404.8413**	**0.0662**	**0.0000**	**406.4963**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2661	1.4720	0.6820	9.2700e-003		0.1157	0.1157		0.1157	0.1157	0.0000	80.1725	80.1725	0.0217	0.0000	80.7143
Total	**0.2661**	**1.4720**	**0.6820**	**9.2700e-003**		**0.1157**	**0.1157**		**0.1157**	**0.1157**	**0.0000**	**80.1725**	**80.1725**	**0.0217**	**0.0000**	**80.7143**

3.4 Building Construction - 2004

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3122	2.3573	2.0642	0.0165	0.0443	0.0828	0.1271	0.0128	0.0792	0.0920	0.0000	183.8641	183.8641	0.0281	0.0000	184.5674
Worker	0.6230	0.7564	6.6380	3.7500e-003	0.1997	8.5300e-003	0.2082	0.0531	7.9100e-003	0.0610	0.0000	220.9773	220.9773	0.0381	0.0000	221.9289
Total	**0.9351**	**3.1137**	**8.7022**	**0.0203**	**0.2440**	**0.0913**	**0.3354**	**0.0659**	**0.0871**	**0.1530**	**0.0000**	**404.8413**	**404.8413**	**0.0662**	**0.0000**	**406.4963**

3.4 Building Construction - 2005

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.9770	5.3879	2.6505	0.0395		0.4524	0.4524		0.4524	0.4524	0.0000	341.7193	341.7193	0.0797	0.0000	343.7129
Total	**0.9770**	**5.3879**	**2.6505**	**0.0395**		**0.4524**	**0.4524**		**0.4524**	**0.4524**	**0.0000**	**341.7193**	**341.7193**	**0.0797**	**0.0000**	**343.7129**

3.4 Building Construction - 2005

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.9785	9.6609	5.4230	0.0728	0.1889	0.2879	0.4769	0.0546	0.2755	0.3301	0.0000	782.2982	782.2982	0.1533	0.0000	786.1298
Worker	1.5493	1.6019	14.9396	0.0105	0.8512	0.0203	0.8715	0.2263	0.0188	0.2451	0.0000	925.4382	925.4382	0.1095	0.0000	928.1754
Total	**2.5278**	**11.2628**	**20.3625**	**0.0833**	**1.0401**	**0.3082**	**1.3484**	**0.2809**	**0.2943**	**0.5752**	**0.0000**	**1,707.7364**	**1,707.7364**	**0.2628**	**0.0000**	**1,714.3051**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.9770	5.3878	2.6505	0.0395		0.4524	0.4524		0.4524	0.4524	0.0000	341.7189	341.7189	0.0797	0.0000	343.7124
Total	**0.9770**	**5.3878**	**2.6505**	**0.0395**		**0.4524**	**0.4524**		**0.4524**	**0.4524**	**0.0000**	**341.7189**	**341.7189**	**0.0797**	**0.0000**	**343.7124**

3.4 Building Construction - 2005

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.9785	9.6609	5.4230	0.0728	0.1889	0.2879	0.4769	0.0546	0.2755	0.3301	0.0000	782.2982	782.2982	0.1533	0.0000	786.1298
Worker	1.5493	1.6019	14.9396	0.0105	0.8512	0.0203	0.8715	0.2263	0.0188	0.2451	0.0000	925.4382	925.4382	0.1095	0.0000	928.1754
Total	**2.5278**	**11.2628**	**20.3625**	**0.0833**	**1.0401**	**0.3082**	**1.3484**	**0.2809**	**0.2943**	**0.5752**	**0.0000**	**1,707.7364**	**1,707.7364**	**0.2628**	**0.0000**	**1,714.3051**

3.4 Building Construction - 2006

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.9770	5.3879	2.6505	0.0395		0.4524	0.4524		0.4524	0.4524	0.0000	341.7193	341.7193	0.0797	0.0000	343.7129
Total	**0.9770**	**5.3879**	**2.6505**	**0.0395**		**0.4524**	**0.4524**		**0.4524**	**0.4524**	**0.0000**	**341.7193**	**341.7193**	**0.0797**	**0.0000**	**343.7129**

3.4 Building Construction - 2006

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.9785	9.6609	5.4230	0.0728	0.1889	0.2879	0.4769	0.0546	0.2755	0.3301	0.0000	782.2982	782.2982	0.1533	0.0000	786.1298
Worker	1.5493	1.6019	14.9396	0.0105	0.8512	0.0203	0.8715	0.2263	0.0188	0.2451	0.0000	925.4382	925.4382	0.1095	0.0000	928.1754
Total	**2.5278**	**11.2628**	**20.3625**	**0.0833**	**1.0401**	**0.3082**	**1.3484**	**0.2809**	**0.2943**	**0.5752**	**0.0000**	**1,707.7364**	**1,707.7364**	**0.2628**	**0.0000**	**1,714.3051**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.9770	5.3878	2.6505	0.0395		0.4524	0.4524		0.4524	0.4524	0.0000	341.7189	341.7189	0.0797	0.0000	343.7124
Total	**0.9770**	**5.3878**	**2.6505**	**0.0395**		**0.4524**	**0.4524**		**0.4524**	**0.4524**	**0.0000**	**341.7189**	**341.7189**	**0.0797**	**0.0000**	**343.7124**

3.4 Building Construction - 2006

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.9785	9.6609	5.4230	0.0728	0.1889	0.2879	0.4769	0.0546	0.2755	0.3301	0.0000	782.2982	782.2982	0.1533	0.0000	786.1298
Worker	1.5493	1.6019	14.9396	0.0105	0.8512	0.0203	0.8715	0.2263	0.0188	0.2451	0.0000	925.4382	925.4382	0.1095	0.0000	928.1754
Total	**2.5278**	**11.2628**	**20.3625**	**0.0833**	**1.0401**	**0.3082**	**1.3484**	**0.2809**	**0.2943**	**0.5752**	**0.0000**	**1,707.7364**	**1,707.7364**	**0.2628**	**0.0000**	**1,714.3051**

3.4 Building Construction - 2007

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.9808	5.4086	2.6607	0.0397		0.4541	0.4541		0.4541	0.4541	0.0000	343.0336	343.0336	0.0801	0.0000	345.0348
Total	**0.9808**	**5.4086**	**2.6607**	**0.0397**		**0.4541**	**0.4541**		**0.4541**	**0.4541**	**0.0000**	**343.0336**	**343.0336**	**0.0801**	**0.0000**	**345.0348**

3.4 Building Construction - 2007

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.9823	9.6981	5.4438	0.0731	0.1897	0.2890	0.4787	0.0548	0.2765	0.3313	0.0000	785.3071	785.3071	0.1539	0.0000	789.1533
Worker	1.5552	1.6081	14.9970	0.0105	0.8545	0.0204	0.8748	0.2272	0.0189	0.2461	0.0000	928.9976	928.9976	0.1099	0.0000	931.7453
Total	**2.5375**	**11.3061**	**20.4409**	**0.0836**	**1.0441**	**0.3094**	**1.3535**	**0.2820**	**0.2954**	**0.5774**	**0.0000**	**1,714.3046**	**1,714.3046**	**0.2638**	**0.0000**	**1,720.8986**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.9808	5.4086	2.6607	0.0397		0.4541	0.4541		0.4541	0.4541	0.0000	343.0332	343.0332	0.0801	0.0000	345.0344
Total	**0.9808**	**5.4086**	**2.6607**	**0.0397**		**0.4541**	**0.4541**		**0.4541**	**0.4541**	**0.0000**	**343.0332**	**343.0332**	**0.0801**	**0.0000**	**345.0344**

3.4 Building Construction - 2007

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.9823	9.6981	5.4438	0.0731	0.1897	0.2890	0.4787	0.0548	0.2765	0.3313	0.0000	785.3071	785.3071	0.1539	0.0000	789.1533
Worker	1.5552	1.6081	14.9970	0.0105	0.8545	0.0204	0.8748	0.2272	0.0189	0.2461	0.0000	928.9976	928.9976	0.1099	0.0000	931.7453
Total	**2.5375**	**11.3061**	**20.4409**	**0.0836**	**1.0441**	**0.3094**	**1.3535**	**0.2820**	**0.2954**	**0.5774**	**0.0000**	**1,714.3046**	**1,714.3046**	**0.2638**	**0.0000**	**1,720.8986**

3.4 Building Construction - 2008

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.7666	4.2274	2.0796	0.0310		0.3549	0.3549		0.3549	0.3549	0.0000	268.1182	268.1182	0.0626	0.0000	269.6824
Total	**0.7666**	**4.2274**	**2.0796**	**0.0310**		**0.3549**	**0.3549**		**0.3549**	**0.3549**	**0.0000**	**268.1182**	**268.1182**	**0.0626**	**0.0000**	**269.6824**

3.4 Building Construction - 2008

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7678	7.5801	4.2550	0.0571	0.1482	0.2259	0.3742	0.0428	0.2161	0.2590	0.0000	613.8032	613.8032	0.1203	0.0000	616.8095
Worker	1.2156	1.2569	11.7218	8.2200e-003	0.6679	0.0159	0.6838	0.1776	0.0148	0.1923	0.0000	726.1130	726.1130	0.0859	0.0000	728.2607
Total	**1.9833**	**8.8370**	**15.9768**	**0.0653**	**0.8161**	**0.2419**	**1.0579**	**0.2204**	**0.2309**	**0.4513**	**0.0000**	**1,339.9163**	**1,339.9163**	**0.2062**	**0.0000**	**1,345.0702**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.7666	4.2274	2.0796	0.0310		0.3549	0.3549		0.3549	0.3549	0.0000	268.1179	268.1179	0.0626	0.0000	269.6821
Total	**0.7666**	**4.2274**	**2.0796**	**0.0310**		**0.3549**	**0.3549**		**0.3549**	**0.3549**	**0.0000**	**268.1179**	**268.1179**	**0.0626**	**0.0000**	**269.6821**

3.4 Building Construction - 2008

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7678	7.5801	4.2550	0.0571	0.1482	0.2259	0.3742	0.0428	0.2161	0.2590	0.0000	613.8032	613.8032	0.1203	0.0000	616.8095
Worker	1.2156	1.2569	11.7218	8.2200e-003	0.6679	0.0159	0.6838	0.1776	0.0148	0.1923	0.0000	726.1130	726.1130	0.0859	0.0000	728.2607
Total	**1.9833**	**8.8370**	**15.9768**	**0.0653**	**0.8161**	**0.2419**	**1.0579**	**0.2204**	**0.2309**	**0.4513**	**0.0000**	**1,339.9163**	**1,339.9163**	**0.2062**	**0.0000**	**1,345.0702**

3.5 Paving - 2004

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2037	1.4574	0.5916	8.2200e-003		0.0887	0.0887		0.0887	0.0887	0.0000	73.5035	73.5035	0.0166	0.0000	73.9183
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2037**	**1.4574**	**0.5916**	**8.2200e-003**		**0.0887**	**0.0887**		**0.0887**	**0.0887**	**0.0000**	**73.5035**	**73.5035**	**0.0166**	**0.0000**	**73.9183**

3.5 Paving - 2004

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0114	0.0138	0.1211	7.0000e-005	3.6400e-003	1.6000e-004	3.8000e-003	9.7000e-004	1.4000e-004	1.1100e-003	0.0000	4.0324	4.0324	6.9000e-004	0.0000	4.0498
Total	**0.0114**	**0.0138**	**0.1211**	**7.0000e-005**	**3.6400e-003**	**1.6000e-004**	**3.8000e-003**	**9.7000e-004**	**1.4000e-004**	**1.1100e-003**	**0.0000**	**4.0324**	**4.0324**	**6.9000e-004**	**0.0000**	**4.0498**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2037	1.4574	0.5916	8.2200e-003		0.0887	0.0887		0.0887	0.0887	0.0000	73.5034	73.5034	0.0166	0.0000	73.9182
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2037**	**1.4574**	**0.5916**	**8.2200e-003**		**0.0887**	**0.0887**		**0.0887**	**0.0887**	**0.0000**	**73.5034**	**73.5034**	**0.0166**	**0.0000**	**73.9182**

3.5 Paving - 2004

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0114	0.0138	0.1211	7.0000e-005	3.6400e-003	1.6000e-004	3.8000e-003	9.7000e-004	1.4000e-004	1.1100e-003	0.0000	4.0324	4.0324	6.9000e-004	0.0000	4.0498
Total	**0.0114**	**0.0138**	**0.1211**	**7.0000e-005**	**3.6400e-003**	**1.6000e-004**	**3.8000e-003**	**9.7000e-004**	**1.4000e-004**	**1.1100e-003**	**0.0000**	**4.0324**	**4.0324**	**6.9000e-004**	**0.0000**	**4.0498**

3.5 Paving - 2005

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0550	0.3958	0.1710	2.5600e-003		0.0251	0.0251		0.0251	0.0251	0.0000	22.8945	22.8945	4.4900e-003	0.0000	23.0067
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0550**	**0.3958**	**0.1710**	**2.5600e-003**		**0.0251**	**0.0251**		**0.0251**	**0.0251**	**0.0000**	**22.8945**	**22.8945**	**4.4900e-003**	**0.0000**	**23.0067**

3.5 Paving - 2005

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0700e-003	2.1400e-003	0.0199	1.0000e-005	1.1400e-003	3.0000e-005	1.1600e-003	3.0000e-004	3.0000e-005	3.3000e-004	0.0000	1.2341	1.2341	1.5000e-004	0.0000	1.2377
Total	**2.0700e-003**	**2.1400e-003**	**0.0199**	**1.0000e-005**	**1.1400e-003**	**3.0000e-005**	**1.1600e-003**	**3.0000e-004**	**3.0000e-005**	**3.3000e-004**	**0.0000**	**1.2341**	**1.2341**	**1.5000e-004**	**0.0000**	**1.2377**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0550	0.3958	0.1710	2.5600e-003		0.0251	0.0251		0.0251	0.0251	0.0000	22.8945	22.8945	4.4900e-003	0.0000	23.0067
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0550**	**0.3958**	**0.1710**	**2.5600e-003**		**0.0251**	**0.0251**		**0.0251**	**0.0251**	**0.0000**	**22.8945**	**22.8945**	**4.4900e-003**	**0.0000**	**23.0067**

3.5 Paving - 2005

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0700e-003	2.1400e-003	0.0199	1.0000e-005	1.1400e-003	3.0000e-005	1.1600e-003	3.0000e-004	3.0000e-005	3.3000e-004	0.0000	1.2341	1.2341	1.5000e-004	0.0000	1.2377
Total	**2.0700e-003**	**2.1400e-003**	**0.0199**	**1.0000e-005**	**1.1400e-003**	**3.0000e-005**	**1.1600e-003**	**3.0000e-004**	**3.0000e-005**	**3.3000e-004**	**0.0000**	**1.2341**	**1.2341**	**1.5000e-004**	**0.0000**	**1.2377**

3.6 Architectural Coating - 2004

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8297					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.8900e-003	0.0458	0.0203	2.7000e-004		3.7200e-003	3.7200e-003		3.7200e-003	3.7200e-003	0.0000	2.2979	2.2979	6.4000e-004	0.0000	2.3140
Total	**0.8376**	**0.0458**	**0.0203**	**2.7000e-004**		**3.7200e-003**	**3.7200e-003**		**3.7200e-003**	**3.7200e-003**	**0.0000**	**2.2979**	**2.2979**	**6.4000e-004**	**0.0000**	**2.3140**

3.6 Architectural Coating - 2004

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0367	0.0445	0.3908	2.2000e-004	0.0118	5.0000e-004	0.0123	3.1300e-003	4.7000e-004	3.5900e-003	0.0000	13.0096	13.0096	2.2400e-003	0.0000	13.0656
Total	**0.0367**	**0.0445**	**0.3908**	**2.2000e-004**	**0.0118**	**5.0000e-004**	**0.0123**	**3.1300e-003**	**4.7000e-004**	**3.5900e-003**	**0.0000**	**13.0096**	**13.0096**	**2.2400e-003**	**0.0000**	**13.0656**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8297					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.8900e-003	0.0458	0.0203	2.7000e-004		3.7200e-003	3.7200e-003		3.7200e-003	3.7200e-003	0.0000	2.2979	2.2979	6.4000e-004	0.0000	2.3140
Total	**0.8376**	**0.0458**	**0.0203**	**2.7000e-004**		**3.7200e-003**	**3.7200e-003**		**3.7200e-003**	**3.7200e-003**	**0.0000**	**2.2979**	**2.2979**	**6.4000e-004**	**0.0000**	**2.3140**

3.6 Architectural Coating - 2004

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0367	0.0445	0.3908	2.2000e-004	0.0118	5.0000e-004	0.0123	3.1300e-003	4.7000e-004	3.5900e-003	0.0000	13.0096	13.0096	2.2400e-003	0.0000	13.0656
Total	**0.0367**	**0.0445**	**0.3908**	**2.2000e-004**	**0.0118**	**5.0000e-004**	**0.0123**	**3.1300e-003**	**4.7000e-004**	**3.5900e-003**	**0.0000**	**13.0096**	**13.0096**	**2.2400e-003**	**0.0000**	**13.0656**

3.6 Architectural Coating - 2005

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	11.9841					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0977	0.5567	0.2702	3.8600e-003		0.0499	0.0499		0.0499	0.0499	0.0000	33.1923	33.1923	8.0000e-003	0.0000	33.3923
Total	**12.0819**	**0.5567**	**0.2702**	**3.8600e-003**		**0.0499**	**0.0499**		**0.0499**	**0.0499**	**0.0000**	**33.1923**	**33.1923**	**8.0000e-003**	**0.0000**	**33.3923**

3.6 Architectural Coating - 2005

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3091	0.3196	2.9806	2.0900e-003	0.1698	4.0500e-003	0.1739	0.0452	3.7600e-003	0.0489	0.0000	184.6373	184.6373	0.0218	0.0000	185.1834
Total	**0.3091**	**0.3196**	**2.9806**	**2.0900e-003**	**0.1698**	**4.0500e-003**	**0.1739**	**0.0452**	**3.7600e-003**	**0.0489**	**0.0000**	**184.6373**	**184.6373**	**0.0218**	**0.0000**	**185.1834**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	11.9841					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0977	0.5567	0.2702	3.8600e-003		0.0499	0.0499		0.0499	0.0499	0.0000	33.1923	33.1923	8.0000e-003	0.0000	33.3923
Total	**12.0819**	**0.5567**	**0.2702**	**3.8600e-003**		**0.0499**	**0.0499**		**0.0499**	**0.0499**	**0.0000**	**33.1923**	**33.1923**	**8.0000e-003**	**0.0000**	**33.3923**

3.6 Architectural Coating - 2005

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3091	0.3196	2.9806	2.0900e-003	0.1698	4.0500e-003	0.1739	0.0452	3.7600e-003	0.0489	0.0000	184.6373	184.6373	0.0218	0.0000	185.1834
Total	**0.3091**	**0.3196**	**2.9806**	**2.0900e-003**	**0.1698**	**4.0500e-003**	**0.1739**	**0.0452**	**3.7600e-003**	**0.0489**	**0.0000**	**184.6373**	**184.6373**	**0.0218**	**0.0000**	**185.1834**

3.6 Architectural Coating - 2006

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	11.9841					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0977	0.5567	0.2702	3.8600e-003		0.0499	0.0499		0.0499	0.0499	0.0000	33.1923	33.1923	8.0000e-003	0.0000	33.3923
Total	**12.0819**	**0.5567**	**0.2702**	**3.8600e-003**		**0.0499**	**0.0499**		**0.0499**	**0.0499**	**0.0000**	**33.1923**	**33.1923**	**8.0000e-003**	**0.0000**	**33.3923**

3.6 Architectural Coating - 2006

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3091	0.3196	2.9806	2.0900e-003	0.1698	4.0500e-003	0.1739	0.0452	3.7600e-003	0.0489	0.0000	184.6373	184.6373	0.0218	0.0000	185.1834
Total	**0.3091**	**0.3196**	**2.9806**	**2.0900e-003**	**0.1698**	**4.0500e-003**	**0.1739**	**0.0452**	**3.7600e-003**	**0.0489**	**0.0000**	**184.6373**	**184.6373**	**0.0218**	**0.0000**	**185.1834**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	11.9841					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0977	0.5567	0.2702	3.8600e-003		0.0499	0.0499		0.0499	0.0499	0.0000	33.1923	33.1923	8.0000e-003	0.0000	33.3923
Total	**12.0819**	**0.5567**	**0.2702**	**3.8600e-003**		**0.0499**	**0.0499**		**0.0499**	**0.0499**	**0.0000**	**33.1923**	**33.1923**	**8.0000e-003**	**0.0000**	**33.3923**

3.6 Architectural Coating - 2006

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3091	0.3196	2.9806	2.0900e-003	0.1698	4.0500e-003	0.1739	0.0452	3.7600e-003	0.0489	0.0000	184.6373	184.6373	0.0218	0.0000	185.1834
Total	**0.3091**	**0.3196**	**2.9806**	**2.0900e-003**	**0.1698**	**4.0500e-003**	**0.1739**	**0.0452**	**3.7600e-003**	**0.0489**	**0.0000**	**184.6373**	**184.6373**	**0.0218**	**0.0000**	**185.1834**

3.6 Architectural Coating - 2007

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	12.0302					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0981	0.5588	0.2712	3.8800e-003		0.0501	0.0501		0.0501	0.0501	0.0000	33.3200	33.3200	8.0300e-003	0.0000	33.5208
Total	**12.1283**	**0.5588**	**0.2712**	**3.8800e-003**		**0.0501**	**0.0501**		**0.0501**	**0.0501**	**0.0000**	**33.3200**	**33.3200**	**8.0300e-003**	**0.0000**	**33.5208**

3.6 Architectural Coating - 2007

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3103	0.3208	2.9921	2.1000e-003	0.1705	4.0700e-003	0.1745	0.0453	3.7700e-003	0.0491	0.0000	185.3474	185.3474	0.0219	0.0000	185.8957
Total	**0.3103**	**0.3208**	**2.9921**	**2.1000e-003**	**0.1705**	**4.0700e-003**	**0.1745**	**0.0453**	**3.7700e-003**	**0.0491**	**0.0000**	**185.3474**	**185.3474**	**0.0219**	**0.0000**	**185.8957**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	12.0302					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0981	0.5588	0.2712	3.8800e-003		0.0501	0.0501		0.0501	0.0501	0.0000	33.3199	33.3199	8.0300e-003	0.0000	33.5207
Total	**12.1283**	**0.5588**	**0.2712**	**3.8800e-003**		**0.0501**	**0.0501**		**0.0501**	**0.0501**	**0.0000**	**33.3199**	**33.3199**	**8.0300e-003**	**0.0000**	**33.5207**

3.6 Architectural Coating - 2007

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3103	0.3208	2.9921	2.1000e-003	0.1705	4.0700e-003	0.1745	0.0453	3.7700e-003	0.0491	0.0000	185.3474	185.3474	0.0219	0.0000	185.8957
Total	**0.3103**	**0.3208**	**2.9921**	**2.1000e-003**	**0.1705**	**4.0700e-003**	**0.1745**	**0.0453**	**3.7700e-003**	**0.0491**	**0.0000**	**185.3474**	**185.3474**	**0.0219**	**0.0000**	**185.8957**

3.6 Architectural Coating - 2008

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	12.0763					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0985	0.5609	0.2722	3.8900e-003		0.0503	0.0503		0.0503	0.0503	0.0000	33.4476	33.4476	8.0600e-003	0.0000	33.6492
Total	**12.1748**	**0.5609**	**0.2722**	**3.8900e-003**		**0.0503**	**0.0503**		**0.0503**	**0.0503**	**0.0000**	**33.4476**	**33.4476**	**8.0600e-003**	**0.0000**	**33.6492**

3.6 Architectural Coating - 2008

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3115	0.3221	3.0036	2.1100e-003	0.1711	4.0800e-003	0.1752	0.0455	3.7900e-003	0.0493	0.0000	186.0576	186.0576	0.0220	0.0000	186.6079
Total	**0.3115**	**0.3221**	**3.0036**	**2.1100e-003**	**0.1711**	**4.0800e-003**	**0.1752**	**0.0455**	**3.7900e-003**	**0.0493**	**0.0000**	**186.0576**	**186.0576**	**0.0220**	**0.0000**	**186.6079**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	12.0763					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0985	0.5609	0.2722	3.8900e-003		0.0503	0.0503		0.0503	0.0503	0.0000	33.4476	33.4476	8.0600e-003	0.0000	33.6492
Total	**12.1748**	**0.5609**	**0.2722**	**3.8900e-003**		**0.0503**	**0.0503**		**0.0503**	**0.0503**	**0.0000**	**33.4476**	**33.4476**	**8.0600e-003**	**0.0000**	**33.6492**

3.6 Architectural Coating - 2008

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3115	0.3221	3.0036	2.1100e-003	0.1711	4.0800e-003	0.1752	0.0455	3.7900e-003	0.0493	0.0000	186.0576	186.0576	0.0220	0.0000	186.6079
Total	**0.3115**	**0.3221**	**3.0036**	**2.1100e-003**	**0.1711**	**4.0800e-003**	**0.1752**	**0.0455**	**3.7900e-003**	**0.0493**	**0.0000**	**186.0576**	**186.0576**	**0.0220**	**0.0000**	**186.6079**

3.6 Architectural Coating - 2009

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3227					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6300e-003	0.0150	7.2700e-003	1.0000e-004		1.3400e-003	1.3400e-003		1.3400e-003	1.3400e-003	0.0000	0.8936	0.8936	2.2000e-004	0.0000	0.8990
Total	**0.3253**	**0.0150**	**7.2700e-003**	**1.0000e-004**		**1.3400e-003**	**1.3400e-003**		**1.3400e-003**	**1.3400e-003**	**0.0000**	**0.8936**	**0.8936**	**2.2000e-004**	**0.0000**	**0.8990**

3.6 Architectural Coating - 2009

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.3200e-003	8.6000e-003	0.0803	6.0000e-005	4.5700e-003	1.1000e-004	4.6800e-003	1.2200e-003	1.0000e-004	1.3200e-003	0.0000	4.9710	4.9710	5.9000e-004	0.0000	4.9857
Total	**8.3200e-003**	**8.6000e-003**	**0.0803**	**6.0000e-005**	**4.5700e-003**	**1.1000e-004**	**4.6800e-003**	**1.2200e-003**	**1.0000e-004**	**1.3200e-003**	**0.0000**	**4.9710**	**4.9710**	**5.9000e-004**	**0.0000**	**4.9857**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3227					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6300e-003	0.0150	7.2700e-003	1.0000e-004		1.3400e-003	1.3400e-003		1.3400e-003	1.3400e-003	0.0000	0.8936	0.8936	2.2000e-004	0.0000	0.8990
Total	**0.3253**	**0.0150**	**7.2700e-003**	**1.0000e-004**		**1.3400e-003**	**1.3400e-003**		**1.3400e-003**	**1.3400e-003**	**0.0000**	**0.8936**	**0.8936**	**2.2000e-004**	**0.0000**	**0.8990**

3.6 Architectural Coating - 2009

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.3200e-003	8.6000e-003	0.0803	6.0000e-005	4.5700e-003	1.1000e-004	4.6800e-003	1.2200e-003	1.0000e-004	1.3200e-003	0.0000	4.9710	4.9710	5.9000e-004	0.0000	4.9857
Total	**8.3200e-003**	**8.6000e-003**	**0.0803**	**6.0000e-005**	**4.5700e-003**	**1.1000e-004**	**4.6800e-003**	**1.2200e-003**	**1.0000e-004**	**1.3200e-003**	**0.0000**	**4.9710**	**4.9710**	**5.9000e-004**	**0.0000**	**4.9857**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	31.6016	146.7350	363.0912	1.0751	20.8153	3.2897	24.1050	5.5939	3.1356	8.7295	0.0000	31,138.9950	31,138.9950	4.3756	0.0000	31,248.3845
Unmitigated	31.6016	146.7350	363.0912	1.0751	20.8153	3.2897	24.1050	5.5939	3.1356	8.7295	0.0000	31,138.9950	31,138.9950	4.3756	0.0000	31,248.3845

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	2,036.31	2,212.44	1875.63	5,907,249	5,907,249
Elementary School	967.50	0.00	0.00	1,523,770	1,523,770
Regional Shopping Center	3,714.47	4,346.89	2195.63	6,290,578	6,290,578
Single Family Housing	14,422.80	15,013.65	13059.30	41,474,774	41,474,774
Total	21,141.08	21,572.98	17,130.56	55,196,372	55,196,372

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	45.60	19.00	35.40	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	10.80	7.30	7.50	45.60	19.00	35.40	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.469017	0.066969	0.162053	0.179952	0.040904	0.005926	0.016959	0.047547	0.000870	0.001968	0.005212	0.000584	0.002038
Elementary School	0.469017	0.066969	0.162053	0.179952	0.040904	0.005926	0.016959	0.047547	0.000870	0.001968	0.005212	0.000584	0.002038
Regional Shopping Center	0.469017	0.066969	0.162053	0.179952	0.040904	0.005926	0.016959	0.047547	0.000870	0.001968	0.005212	0.000584	0.002038
Single Family Housing	0.469017	0.066969	0.162053	0.179952	0.040904	0.005926	0.016959	0.047547	0.000870	0.001968	0.005212	0.000584	0.002038

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3,203.1639	3,203.1639	0.1900	0.0393	3,219.6251
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3,203.1639	3,203.1639	0.1900	0.0393	3,219.6251
NaturalGas Mitigated	0.3211	2.7501	1.2106	0.0175		0.2219	0.2219		0.2219	0.2219	0.0000	3,178.1388	3,178.1388	0.0609	0.0583	3,197.0249
NaturalGas Unmitigated	0.3211	2.7501	1.2106	0.0175		0.2219	0.2219		0.2219	0.2219	0.0000	3,178.1388	3,178.1388	0.0609	0.0583	3,197.0249

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	4.44933e+006	0.0240	0.2050	0.0872	1.3100e-003		0.0166	0.0166		0.0166	0.0166	0.0000	237.4334	237.4334	4.5500e-003	4.3500e-003	238.8444
Elementary School	722960	3.9000e-003	0.0354	0.0298	2.1000e-004		2.6900e-003	2.6900e-003		2.6900e-003	2.6900e-003	0.0000	38.5799	38.5799	7.4000e-004	7.1000e-004	38.8092
Regional Shopping Center	1.26049e+006	6.8000e-003	0.0618	0.0519	3.7000e-004		4.7000e-003	4.7000e-003		4.7000e-003	4.7000e-003	0.0000	67.2643	67.2643	1.2900e-003	1.2300e-003	67.6640
Single Family Housing	5.31233e+007	0.2865	2.4478	1.0416	0.0156		0.1979	0.1979		0.1979	0.1979	0.0000	2,834.8612	2,834.8612	0.0543	0.0520	2,851.7074
Total		**0.3211**	**2.7501**	**1.2105**	**0.0175**		**0.2219**	**0.2219**		**0.2219**	**0.2219**	**0.0000**	**3,178.1389**	**3,178.1389**	**0.0609**	**0.0583**	**3,197.0249**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	4.44933e+006	0.0240	0.2050	0.0872	1.3100e-003		0.0166	0.0166		0.0166	0.0166	0.0000	237.4334	237.4334	4.5500e-003	4.3500e-003	238.8444
Elementary School	722960	3.9000e-003	0.0354	0.0298	2.1000e-004		2.6900e-003	2.6900e-003		2.6900e-003	2.6900e-003	0.0000	38.5799	38.5799	7.4000e-004	7.1000e-004	38.8092
Regional Shopping Center	1.26049e+006	6.8000e-003	0.0618	0.0519	3.7000e-004		4.7000e-003	4.7000e-003		4.7000e-003	4.7000e-003	0.0000	67.2643	67.2643	1.2900e-003	1.2300e-003	67.6640
Single Family Housing	5.31233e+007	0.2865	2.4478	1.0416	0.0156		0.1979	0.1979		0.1979	0.1979	0.0000	2,834.8612	2,834.8612	0.0543	0.0520	2,851.7074
Total		**0.3211**	**2.7501**	**1.2105**	**0.0175**		**0.2219**	**0.2219**		**0.2219**	**0.2219**	**0.0000**	**3,178.1389**	**3,178.1389**	**0.0609**	**0.0583**	**3,197.0249**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.19759e+006	265.6331	0.0158	3.2600e-003	266.9982
Elementary School	423242	93.8779	5.5700e-003	1.1500e-003	94.3604
Regional Shopping Center	1.2283e+006	272.4449	0.0162	3.3400e-003	273.8450
Single Family Housing	1.15921e+007	2,571.2081	0.1525	0.0316	2,584.4217
Total		**3,203.1639**	**0.1900**	**0.0393**	**3,219.6252**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.19759e+006	265.6331	0.0158	3.2600e-003	266.9982
Elementary School	423242	93.8779	5.5700e-003	1.1500e-003	94.3604
Regional Shopping Center	1.2283e+006	272.4449	0.0162	3.3400e-003	273.8450
Single Family Housing	1.15921e+007	2,571.2081	0.1525	0.0316	2,584.4217
Total		**3,203.1639**	**0.1900**	**0.0393**	**3,219.6252**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	23.4073	1.6785	63.9774	0.1616		7.9470	7.9470		7.9470	7.9470	1,047.8334	812.3082	1,860.1415	4.9491	0.0145	1,988.1847
Unmitigated	23.4073	1.6785	63.9774	0.1616		7.9470	7.9470		7.9470	7.9470	1,047.8334	812.3082	1,860.1415	4.9491	0.0145	1,988.1847

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.9227					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	12.4417					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.3620	1.4648	48.2604	0.1609		7.8806	7.8806		7.8806	7.8806	1,047.8334	790.1703	1,838.0036	4.9136	0.0145	1,965.1594
Landscaping	0.6808	0.2137	15.7170	7.2000e-004		0.0664	0.0664		0.0664	0.0664	0.0000	22.1379	22.1379	0.0355	0.0000	23.0253
Total	**23.4073**	**1.6785**	**63.9774**	**0.1616**		**7.9470**	**7.9470**		**7.9470**	**7.9470**	**1,047.8334**	**812.3082**	**1,860.1415**	**4.9491**	**0.0145**	**1,988.1847**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.9227					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	12.4417					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.3620	1.4648	48.2604	0.1609		7.8806	7.8806		7.8806	7.8806	1,047.8334	790.1703	1,838.0036	4.9136	0.0145	1,965.1594
Landscaping	0.6808	0.2137	15.7170	7.2000e-004		0.0664	0.0664		0.0664	0.0664	0.0000	22.1379	22.1379	0.0355	0.0000	23.0253
Total	**23.4073**	**1.6785**	**63.9774**	**0.1616**		**7.9470**	**7.9470**		**7.9470**	**7.9470**	**1,047.8334**	**812.3082**	**1,860.1415**	**4.9491**	**0.0145**	**1,988.1847**

7.0 Water Detail

7.1 Mitigation Measures Water

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	253.7743	4.1543	0.1004	387.5547
Unmitigated	257.7307	4.1545	0.1005	391.5314

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	20.1326 / 12.6923	40.4035	0.6580	0.0159	61.5949
Elementary School	1.81818 / 4.67532	6.3886	0.0596	1.4700e-003	8.3164
Regional Shopping Center	6.44357 / 3.94928	12.8437	0.2106	5.0900e-003	19.6257
Single Family Housing	98.7083 / 62.2292	198.0949	3.2263	0.0780	301.9944
Total		**257.7307**	**4.1545**	**0.1005**	**391.5314**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	20.1326 / 11.9181	39.8025	0.6580	0.0159	60.9908
Elementary School	1.81818 / 4.39013	6.1672	0.0596	1.4700e-003	8.0939
Regional Shopping Center	6.44357 / 3.70838	12.6567	0.2106	5.0900e-003	19.4377
Single Family Housing	98.7083 / 58.4332	195.1480	3.2261	0.0780	299.0323
Total		**253.7743**	**4.1543**	**0.1004**	**387.5547**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	426.3866	25.1987	0.0000	1,056.3547
Unmitigated	426.3866	25.1987	0.0000	1,056.3547

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	142.14	28.8531	1.7052	0.0000	71.4824
Elementary School	136.88	27.7854	1.6421	0.0000	68.8372
Regional Shopping Center	91.34	18.5412	1.0958	0.0000	45.9350
Single Family Housing	1730.16	351.2068	20.7557	0.0000	870.1001
Total		**426.3866**	**25.1987**	**0.0000**	**1,056.3547**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	142.14	28.8531	1.7052	0.0000	71.4824
Elementary School	136.88	27.7854	1.6421	0.0000	68.8372
Regional Shopping Center	91.34	18.5412	1.0958	0.0000	45.9350
Single Family Housing	1730.16	351.2068	20.7557	0.0000	870.1001
Total		**426.3866**	**25.1987**	**0.0000**	**1,056.3547**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	-641.9080	0.0000	0.0000	-641.9080

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Cropland	282.89 / 0	-1,753.9180	0.0000	0.0000	-1,753.9180
Grassland	10.18 / 10.18	0.0000	0.0000	0.0000	0.0000
Wetlands	10.18 / 10.18	0.0000	0.0000	0.0000	0.0000
Total		**-1,753.9180**	**0.0000**	**0.0000**	**-1,753.9180**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Mixed Hardwood	1515	1,112.0100	0.0000	0.0000	1,112.0100
Total		**1,112.0100**	**0.0000**	**0.0000**	**1,112.0100**

Stockton Tra Vigne - Reduced Intensity/Density Alternative - 2020

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	750.00	Student	14.70	62,702.53	0
Apartments Low Rise	272.00	Dwelling Unit	11.70	340,000.00	863
Single Family Housing	930.00	Dwelling Unit	245.99	2,093,400.00	2950

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Stockton Tra Vigne - Reduced Intensity/Density Alternative - 2020 - San Joaquin County, Annual

Project Characteristics - CO2 intensty factor as provided by PG&E:
https://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf

Land Use - Proposed GP land uses (11.7 HDR, 260.69 ac LDR (minus 14.7 ac school). Pop 3.17/unit. Existing 15.57 I and 20.36 acres of OS not included. Assumes 90 units built on the school site--worst case scenario.

Construction Phase - Based on project size and type.

Grading - Acres of Grading (Grading Phase): 283.68

Vehicle Trips - Trip gen adjusted per traffic engineer. Trip lengths remain defaults.

Woodstoves -

Energy Use -

Land Use Change -

Sequestration - Assumes approx 1 front yard tree per SFR unit. Commercial site plan shows approx 150 trees within landscaping.

Construction Off-road Equipment Mitigation - Tier 2 Engines

Mobile Land Use Mitigation -

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	5
tblConstructionPhase	NumDays	180.00	20.00
tblConstructionPhase	NumDays	465.00	180.00
tblConstructionPhase	NumDays	4,650.00	1,047.00
tblConstructionPhase	NumDays	330.00	80.00
tblConstructionPhase	NumDays	330.00	1,068.00
tblConstructionPhase	PhaseEndDate	9/9/2019	1/28/2019
tblConstructionPhase	PhaseEndDate	6/21/2021	10/7/2019
tblConstructionPhase	PhaseEndDate	4/18/2039	10/11/2023
tblConstructionPhase	PhaseEndDate	7/23/2040	1/27/2020

tblConstructionPhase	PhaseEndDate	10/28/2041	1/10/2024
tblConstructionPhase	PhaseStartDate	9/10/2019	1/29/2019
tblConstructionPhase	PhaseStartDate	6/22/2021	10/8/2019
tblConstructionPhase	PhaseStartDate	4/19/2039	10/8/2019
tblConstructionPhase	PhaseStartDate	7/24/2040	12/8/2019
tblGrading	AcresOfGrading	450.00	283.68
tblGrading	AcresOfGrading	0.00	283.68
tblLandUse	LandUseSquareFeet	272,000.00	340,000.00
tblLandUse	LandUseSquareFeet	1,674,000.00	2,093,400.00
tblLandUse	LotAcreage	1.44	14.70
tblLandUse	LotAcreage	17.00	11.70
tblLandUse	LotAcreage	301.95	245.99
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblSequestration	NumberOfNewTrees	0.00	1,200.00
tblVehicleTrips	ST_TR	7.16	6.39
tblVehicleTrips	SU_TR	6.07	5.86
tblVehicleTrips	WD_TR	6.59	6.42
tblVehicleTrips	WD_TR	9.52	8.63

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	1.0694	7.1039	4.9805	0.0104	1.2138	0.3093	1.5231	0.4809	0.2856	0.7665	0.0000	935.0427	935.0427	0.2191	0.0000	940.5193
2020	6.4558	5.2723	5.5218	0.0161	0.8185	0.1846	1.0031	0.2204	0.1744	0.3948	0.0000	1,464.1322	1,464.1322	0.1302	0.0000	1,467.3868
2021	6.3461	4.6395	5.0447	0.0155	0.8142	0.1475	0.9617	0.2192	0.1394	0.3586	0.0000	1,410.8713	1,410.8713	0.1189	0.0000	1,413.8433
2022	6.2672	4.2451	4.7701	0.0152	0.8111	0.1250	0.9361	0.2184	0.1182	0.3366	0.0000	1,380.1018	1,380.1018	0.1148	0.0000	1,382.9715
2023	6.1073	2.8854	3.6449	0.0119	0.6585	0.0849	0.7433	0.1772	0.0803	0.2576	0.0000	1,079.3465	1,079.3465	0.0825	0.0000	1,081.4094
2024	0.1764	5.6900e-003	0.0160	4.0000e-005	3.5400e-003	2.6000e-004	3.8000e-003	9.4000e-004	2.6000e-004	1.2000e-003	0.0000	3.7034	3.7034	1.1000e-004	0.0000	3.7062
Maximum	**6.4558**	**7.1039**	**5.5218**	**0.0161**	**1.2138**	**0.3093**	**1.5231**	**0.4809**	**0.2856**	**0.7665**	**0.0000**	**1,464.1322**	**1,464.1322**	**0.2191**	**0.0000**	**1,467.3868**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	1.0694	7.1039	4.9805	0.0104	0.5894	0.3093	0.8987	0.2188	0.2856	0.5044	0.0000	935.0419	935.0419	0.2191	0.0000	940.5185
2020	6.4558	5.2723	5.5218	0.0161	0.8185	0.1846	1.0031	0.2204	0.1744	0.3948	0.0000	1,464.1318	1,464.1318	0.1302	0.0000	1,467.3864
2021	6.3461	4.6395	5.0446	0.0155	0.8142	0.1475	0.9617	0.2192	0.1394	0.3586	0.0000	1,410.8709	1,410.8709	0.1189	0.0000	1,413.8429
2022	6.2672	4.2451	4.7701	0.0152	0.8111	0.1250	0.9361	0.2184	0.1182	0.3366	0.0000	1,380.1014	1,380.1014	0.1148	0.0000	1,382.9711
2023	6.1073	2.8854	3.6449	0.0119	0.6585	0.0849	0.7433	0.1772	0.0803	0.2576	0.0000	1,079.3462	1,079.3462	0.0825	0.0000	1,081.4090
2024	0.1764	5.6900e-003	0.0160	4.0000e-005	3.5400e-003	2.6000e-004	3.8000e-003	9.4000e-004	2.6000e-004	1.2000e-003	0.0000	3.7033	3.7033	1.1000e-004	0.0000	3.7062
Maximum	**6.4558**	**7.1039**	**5.5218**	**0.0161**	**0.8185**	**0.3093**	**1.0031**	**0.2204**	**0.2856**	**0.5044**	**0.0000**	**1,464.1318**	**1,464.1318**	**0.2191**	**0.0000**	**1,467.3864**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**14.45**	**0.00**	**12.07**	**19.90**	**0.00**	**12.39**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2019**	**3-31-2019**	1.8164	1.8164
2	**4-1-2019**	**6-30-2019**	1.9310	1.9310
3	**7-1-2019**	**9-30-2019**	1.9522	1.9522
4	**10-1-2019**	**12-31-2019**	2.4812	2.4812
5	**1-1-2020**	**3-31-2020**	3.0356	3.0356

6	**4-1-2020**	**6-30-2020**	2.8684	2.8684
7	**7-1-2020**	**9-30-2020**	2.8999	2.8999
8	**10-1-2020**	**12-31-2020**	2.9175	2.9175
9	**1-1-2021**	**3-31-2021**	2.7167	2.7167
10	**4-1-2021**	**6-30-2021**	2.7330	2.7330
11	**7-1-2021**	**9-30-2021**	2.7630	2.7630
12	**10-1-2021**	**12-31-2021**	2.7771	2.7771
13	**1-1-2022**	**3-31-2022**	2.6090	2.6090
14	**4-1-2022**	**6-30-2022**	2.6258	2.6258
15	**7-1-2022**	**9-30-2022**	2.6547	2.6547
16	**10-1-2022**	**12-31-2022**	2.6670	2.6670
17	**1-1-2023**	**3-31-2023**	2.4447	2.4447
18	**4-1-2023**	**6-30-2023**	2.4625	2.4625
19	**7-1-2023**	**9-30-2023**	2.4896	2.4896
20	**10-1-2023**	**12-31-2023**	1.6212	1.6212
21	**1-1-2024**	**3-31-2024**	0.1627	0.1627
		Highest	3.0356	3.0356

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	17.6537	1.3313	56.8454	0.1590		7.8658	7.8658		7.8658	7.8658	1,041.7693	535.3075	1,577.0768	4.8943	9.5500e-003	1,702.2789
Energy	0.1505	1.2878	0.5601	8.2100e-003		0.1040	0.1040		0.1040	0.1040	0.0000	2,729.7123	2,729.7123	0.1526	0.0530	2,749.3109
Mobile	3.8819	26.9392	44.0004	0.1582	11.3780	0.1679	11.5459	3.0512	0.1584	3.2096	0.0000	14,561.4575	14,561.4575	0.7277	0.0000	14,579.6500
Waste						0.0000	0.0000		0.0000	0.0000	268.7600	0.0000	268.7600	15.8833	0.0000	665.8416
Water						0.0000	0.0000		0.0000	0.0000	25.4226	81.9202	107.3428	2.6193	0.0634	191.7044
Total	**21.6860**	**29.5583**	**101.4059**	**0.3253**	**11.3780**	**8.1377**	**19.5156**	**3.0512**	**8.1281**	**11.1793**	**1,335.9519**	**17,908.3975**	**19,244.3494**	**24.2772**	**0.1259**	**19,888.7858**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	12.4020	0.5533	9.1529	3.3400e-003		0.0856	0.0856		0.0856	0.0856	0.0000	535.3075	535.3075	0.0242	9.5500e-003	538.7582
Energy	0.1505	1.2878	0.5601	8.2100e-003		0.1040	0.1040		0.1040	0.1040	0.0000	2,729.7123	2,729.7123	0.1526	0.0530	2,749.3109
Mobile	3.7378	25.5262	40.7633	0.1443	10.2686	0.1532	10.4218	2.7537	0.1445	2.8982	0.0000	13,287.1333	13,287.1333	0.6904	0.0000	13,304.3930
Waste						0.0000	0.0000		0.0000	0.0000	268.7600	0.0000	268.7600	15.8833	0.0000	665.8416
Water						0.0000	0.0000		0.0000	0.0000	20.3381	68.9949	89.3330	2.0958	0.0508	156.8523
Total	**16.2903**	**27.3673**	**50.4763**	**0.1559**	**10.2686**	**0.3428**	**10.6114**	**2.7537**	**0.3341**	**3.0878**	**289.0981**	**16,621.1480**	**16,910.2461**	**18.8463**	**0.1133**	**17,415.1559**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**24.88**	**7.41**	**50.22**	**52.09**	**9.75**	**95.79**	**45.63**	**9.75**	**95.89**	**72.38**	**78.36**	**7.19**	**12.13**	**22.37**	**10.01**	**12.44**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	880.8000
Vegetation Land Change	-1,753.9180
Total	**-873.1180**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2019	1/28/2019	5	20	
2	Grading	Grading	1/29/2019	10/7/2019	5	180	
3	Building Construction	Building Construction	10/8/2019	10/11/2023	5	1047	
4	Paving	Paving	10/8/2019	1/27/2020	5	80	
5	Architectural Coating	Architectural Coating	12/8/2019	1/10/2024	5	1068	

Acres of Grading (Site Preparation Phase): 283.68

Acres of Grading (Grading Phase): 283.68

Acres of Paving: 0

Residential Indoor: 4,927,635; Residential Outdoor: 1,642,545; Non-Residential Indoor: 94,054; Non-Residential Outdoor: 31,351; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	557.00	139.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	111.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3311	0.0000	0.3311	0.1156	0.0000	0.1156	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0434	0.4557	0.2206	3.8000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	34.1687	34.1687	0.0108	0.0000	34.4390
Total	**0.0434**	**0.4557**	**0.2206**	**3.8000e-004**	**0.3311**	**0.0239**	**0.3550**	**0.1156**	**0.0220**	**0.1375**	**0.0000**	**34.1687**	**34.1687**	**0.0108**	**0.0000**	**34.4390**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-004	5.9000e-004	5.7100e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3116	1.3116	4.0000e-005	0.0000	1.3126
Total	**7.9000e-004**	**5.9000e-004**	**5.7100e-003**	**1.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.3116**	**1.3116**	**4.0000e-005**	**0.0000**	**1.3126**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1291	0.0000	0.1291	0.0451	0.0000	0.0451	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0434	0.4557	0.2206	3.8000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	34.1687	34.1687	0.0108	0.0000	34.4389
Total	**0.0434**	**0.4557**	**0.2206**	**3.8000e-004**	**0.1291**	**0.0239**	**0.1530**	**0.0451**	**0.0220**	**0.0671**	**0.0000**	**34.1687**	**34.1687**	**0.0108**	**0.0000**	**34.4389**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-004	5.9000e-004	5.7100e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3116	1.3116	4.0000e-005	0.0000	1.3126
Total	**7.9000e-004**	**5.9000e-004**	**5.7100e-003**	**1.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.3116**	**1.3116**	**4.0000e-005**	**0.0000**	**1.3126**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6924	0.0000	0.6924	0.3142	0.0000	0.3142	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4265	4.9068	3.0039	5.5800e-003		0.2144	0.2144		0.1973	0.1973	0.0000	501.3119	501.3119	0.1586	0.0000	505.2771
Total	**0.4265**	**4.9068**	**3.0039**	**5.5800e-003**	**0.6924**	**0.2144**	**0.9069**	**0.3142**	**0.1973**	**0.5114**	**0.0000**	**501.3119**	**501.3119**	**0.1586**	**0.0000**	**505.2771**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8700e-003	5.8500e-003	0.0571	1.5000e-004	0.0143	1.0000e-004	0.0144	3.8100e-003	9.0000e-005	3.9000e-003	0.0000	13.1164	13.1164	4.0000e-004	0.0000	13.1264
Total	**7.8700e-003**	**5.8500e-003**	**0.0571**	**1.5000e-004**	**0.0143**	**1.0000e-004**	**0.0144**	**3.8100e-003**	**9.0000e-005**	**3.9000e-003**	**0.0000**	**13.1164**	**13.1164**	**4.0000e-004**	**0.0000**	**13.1264**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2700	0.0000	0.2700	0.1225	0.0000	0.1225	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4265	4.9068	3.0039	5.5800e-003		0.2144	0.2144		0.1973	0.1973	0.0000	501.3113	501.3113	0.1586	0.0000	505.2765
Total	**0.4265**	**4.9068**	**3.0039**	**5.5800e-003**	**0.2700**	**0.2144**	**0.4845**	**0.1225**	**0.1973**	**0.3198**	**0.0000**	**501.3113**	**501.3113**	**0.1586**	**0.0000**	**505.2765**

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8700e-003	5.8500e-003	0.0571	1.5000e-004	0.0143	1.0000e-004	0.0144	3.8100e-003	9.0000e-005	3.9000e-003	0.0000	13.1164	13.1164	4.0000e-004	0.0000	13.1264
Total	**7.8700e-003**	**5.8500e-003**	**0.0571**	**1.5000e-004**	**0.0143**	**1.0000e-004**	**0.0144**	**3.8100e-003**	**9.0000e-005**	**3.9000e-003**	**0.0000**	**13.1164**	**13.1164**	**4.0000e-004**	**0.0000**	**13.1264**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0720	0.6429	0.5235	8.2000e-004		0.0393	0.0393		0.0370	0.0370	0.0000	71.7068	71.7068	0.0175	0.0000	72.1435
Total	**0.0720**	**0.6429**	**0.5235**	**8.2000e-004**		**0.0393**	**0.0393**		**0.0370**	**0.0370**	**0.0000**	**71.7068**	**71.7068**	**0.0175**	**0.0000**	**72.1435**

3.4 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0213	0.5517	0.1233	1.2100e-003	0.0280	4.2300e-003	0.0322	8.0900e-003	4.0500e-003	0.0121	0.0000	114.8061	114.8061	7.6800e-003	0.0000	114.9982
Worker	0.0743	0.0552	0.5391	1.3700e-003	0.1353	9.5000e-004	0.1363	0.0360	8.8000e-004	0.0369	0.0000	123.7928	123.7928	3.7900e-003	0.0000	123.8877
Total	**0.0956**	**0.6069**	**0.6623**	**2.5800e-003**	**0.1633**	**5.1800e-003**	**0.1685**	**0.0441**	**4.9300e-003**	**0.0490**	**0.0000**	**238.5989**	**238.5989**	**0.0115**	**0.0000**	**238.8859**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0720	0.6429	0.5235	8.2000e-004		0.0393	0.0393		0.0370	0.0370	0.0000	71.7067	71.7067	0.0175	0.0000	72.1434
Total	**0.0720**	**0.6429**	**0.5235**	**8.2000e-004**		**0.0393**	**0.0393**		**0.0370**	**0.0370**	**0.0000**	**71.7067**	**71.7067**	**0.0175**	**0.0000**	**72.1434**

3.4 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0213	0.5517	0.1233	1.2100e-003	0.0280	4.2300e-003	0.0322	8.0900e-003	4.0500e-003	0.0121	0.0000	114.8061	114.8061	7.6800e-003	0.0000	114.9982
Worker	0.0743	0.0552	0.5391	1.3700e-003	0.1353	9.5000e-004	0.1363	0.0360	8.8000e-004	0.0369	0.0000	123.7928	123.7928	3.7900e-003	0.0000	123.8877
Total	**0.0956**	**0.6069**	**0.6623**	**2.5800e-003**	**0.1633**	**5.1800e-003**	**0.1685**	**0.0441**	**4.9300e-003**	**0.0490**	**0.0000**	**238.5989**	**238.5989**	**0.0115**	**0.0000**	**238.8859**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4091	303.4091	0.0740	0.0000	305.2596
Total	**0.2777**	**2.5134**	**2.2072**	**3.5300e-003**		**0.1463**	**0.1463**		**0.1376**	**0.1376**	**0.0000**	**303.4091**	**303.4091**	**0.0740**	**0.0000**	**305.2596**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0738	2.1535	0.4583	5.1500e-003	0.1203	0.0119	0.1322	0.0348	0.0114	0.0461	0.0000	489.0936	489.0936	0.0304	0.0000	489.8524
Worker	0.2912	0.2091	2.0622	5.7000e-003	0.5812	3.9500e-003	0.5852	0.1545	3.6400e-003	0.1582	0.0000	515.4322	515.4322	0.0142	0.0000	515.7874
Total	**0.3650**	**2.3626**	**2.5205**	**0.0109**	**0.7015**	**0.0158**	**0.7173**	**0.1893**	**0.0150**	**0.2043**	**0.0000**	**1,004.5258**	**1,004.5258**	**0.0446**	**0.0000**	**1,005.6398**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4087	303.4087	0.0740	0.0000	305.2592
Total	**0.2777**	**2.5134**	**2.2072**	**3.5300e-003**		**0.1463**	**0.1463**		**0.1376**	**0.1376**	**0.0000**	**303.4087**	**303.4087**	**0.0740**	**0.0000**	**305.2592**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0738	2.1535	0.4583	5.1500e-003	0.1203	0.0119	0.1322	0.0348	0.0114	0.0461	0.0000	489.0936	489.0936	0.0304	0.0000	489.8524
Worker	0.2912	0.2091	2.0622	5.7000e-003	0.5812	3.9500e-003	0.5852	0.1545	3.6400e-003	0.1582	0.0000	515.4322	515.4322	0.0142	0.0000	515.7874
Total	**0.3650**	**2.3626**	**2.5205**	**0.0109**	**0.7015**	**0.0158**	**0.7173**	**0.1893**	**0.0150**	**0.2043**	**0.0000**	**1,004.5258**	**1,004.5258**	**0.0446**	**0.0000**	**1,005.6398**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2867	302.2867	0.0729	0.0000	304.1099
Total	**0.2481**	**2.2749**	**2.1631**	**3.5100e-003**		**0.1251**	**0.1251**		**0.1176**	**0.1176**	**0.0000**	**302.2867**	**302.2867**	**0.0729**	**0.0000**	**304.1099**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0602	1.9430	0.4006	5.0800e-003	0.1198	5.5200e-003	0.1254	0.0346	5.2800e-003	0.0399	0.0000	482.6956	482.6956	0.0285	0.0000	483.4089
Worker	0.2678	0.1854	1.8710	5.4700e-003	0.5790	3.8000e-003	0.5828	0.1539	3.5000e-003	0.1574	0.0000	494.1032	494.1032	0.0126	0.0000	494.4187
Total	**0.3280**	**2.1284**	**2.2716**	**0.0106**	**0.6988**	**9.3200e-003**	**0.7082**	**0.1886**	**8.7800e-003**	**0.1974**	**0.0000**	**976.7989**	**976.7989**	**0.0412**	**0.0000**	**977.8276**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2863	302.2863	0.0729	0.0000	304.1095
Total	**0.2481**	**2.2749**	**2.1631**	**3.5100e-003**		**0.1251**	**0.1251**		**0.1176**	**0.1176**	**0.0000**	**302.2863**	**302.2863**	**0.0729**	**0.0000**	**304.1095**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0602	1.9430	0.4006	5.0800e-003	0.1198	5.5200e-003	0.1254	0.0346	5.2800e-003	0.0399	0.0000	482.6956	482.6956	0.0285	0.0000	483.4089
Worker	0.2678	0.1854	1.8710	5.4700e-003	0.5790	3.8000e-003	0.5828	0.1539	3.5000e-003	0.1574	0.0000	494.1032	494.1032	0.0126	0.0000	494.4187
Total	**0.3280**	**2.1284**	**2.2716**	**0.0106**	**0.6988**	**9.3200e-003**	**0.7082**	**0.1886**	**8.7800e-003**	**0.1974**	**0.0000**	**976.7989**	**976.7989**	**0.0412**	**0.0000**	**977.8276**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2428	301.2428	0.0722	0.0000	303.0471
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2428**	**301.2428**	**0.0722**	**0.0000**	**303.0471**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0556	1.8337	0.3681	5.0100e-003	0.1194	4.7600e-003	0.1242	0.0345	4.5600e-003	0.0391	0.0000	476.3539	476.3539	0.0270	0.0000	477.0281
Worker	0.2475	0.1653	1.7002	5.2500e-003	0.5768	3.6700e-003	0.5804	0.1533	3.3800e-003	0.1567	0.0000	474.7115	474.7115	0.0113	0.0000	474.9926
Total	**0.3032**	**1.9990**	**2.0683**	**0.0103**	**0.6962**	**8.4300e-003**	**0.7046**	**0.1878**	**7.9400e-003**	**0.1958**	**0.0000**	**951.0653**	**951.0653**	**0.0382**	**0.0000**	**952.0207**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2425	301.2425	0.0722	0.0000	303.0467
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2425**	**301.2425**	**0.0722**	**0.0000**	**303.0467**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0556	1.8337	0.3681	5.0100e-003	0.1194	4.7600e-003	0.1242	0.0345	4.5600e-003	0.0391	0.0000	476.3539	476.3539	0.0270	0.0000	477.0281
Worker	0.2475	0.1653	1.7002	5.2500e-003	0.5768	3.6700e-003	0.5804	0.1533	3.3800e-003	0.1567	0.0000	474.7115	474.7115	0.0113	0.0000	474.9926
Total	**0.3032**	**1.9990**	**2.0683**	**0.0103**	**0.6962**	**8.4300e-003**	**0.7046**	**0.1878**	**7.9400e-003**	**0.1958**	**0.0000**	**951.0653**	**951.0653**	**0.0382**	**0.0000**	**952.0207**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1596	1.4601	1.6488	2.7300e-003		0.0710	0.0710		0.0668	0.0668	0.0000	235.2818	235.2818	0.0560	0.0000	236.6811
Total	**0.1596**	**1.4601**	**1.6488**	**2.7300e-003**		**0.0710**	**0.0710**		**0.0668**	**0.0668**	**0.0000**	**235.2818**	**235.2818**	**0.0560**	**0.0000**	**236.6811**

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0308	1.1109	0.2421	3.8200e-003	0.0932	1.1400e-003	0.0944	0.0269	1.0900e-003	0.0280	0.0000	362.9453	362.9453	0.0147	0.0000	363.3133
Worker	0.1797	0.1156	1.2098	3.9500e-003	0.4503	2.7800e-003	0.4531	0.1197	2.5600e-003	0.1223	0.0000	356.8464	356.8464	7.8400e-003	0.0000	357.0424
Total	**0.2105**	**1.2265**	**1.4519**	**7.7700e-003**	**0.5435**	**3.9200e-003**	**0.5475**	**0.1467**	**3.6500e-003**	**0.1503**	**0.0000**	**719.7917**	**719.7917**	**0.0226**	**0.0000**	**720.3556**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1596	1.4601	1.6488	2.7300e-003		0.0710	0.0710		0.0668	0.0668	0.0000	235.2815	235.2815	0.0560	0.0000	236.6808
Total	**0.1596**	**1.4601**	**1.6488**	**2.7300e-003**		**0.0710**	**0.0710**		**0.0668**	**0.0668**	**0.0000**	**235.2815**	**235.2815**	**0.0560**	**0.0000**	**236.6808**

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0308	1.1109	0.2421	3.8200e-003	0.0932	1.1400e-003	0.0944	0.0269	1.0900e-003	0.0280	0.0000	362.9453	362.9453	0.0147	0.0000	363.3133
Worker	0.1797	0.1156	1.2098	3.9500e-003	0.4503	2.7800e-003	0.4531	0.1197	2.5600e-003	0.1223	0.0000	356.8464	356.8464	7.8400e-003	0.0000	357.0424
Total	**0.2105**	**1.2265**	**1.4519**	**7.7700e-003**	**0.5435**	**3.9200e-003**	**0.5475**	**0.1467**	**3.6500e-003**	**0.1503**	**0.0000**	**719.7917**	**719.7917**	**0.0226**	**0.0000**	**720.3556**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0444	0.4649	0.4473	7.0000e-004		0.0252	0.0252		0.0231	0.0231	0.0000	62.4493	62.4493	0.0198	0.0000	62.9433
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0444**	**0.4649**	**0.4473**	**7.0000e-004**		**0.0252**	**0.0252**		**0.0231**	**0.0231**	**0.0000**	**62.4493**	**62.4493**	**0.0198**	**0.0000**	**62.9433**

3.5 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-003	1.4900e-003	0.0145	4.0000e-005	3.6400e-003	3.0000e-005	3.6700e-003	9.7000e-004	2.0000e-005	9.9000e-004	0.0000	3.3337	3.3337	1.0000e-004	0.0000	3.3363
Total	**2.0000e-003**	**1.4900e-003**	**0.0145**	**4.0000e-005**	**3.6400e-003**	**3.0000e-005**	**3.6700e-003**	**9.7000e-004**	**2.0000e-005**	**9.9000e-004**	**0.0000**	**3.3337**	**3.3337**	**1.0000e-004**	**0.0000**	**3.3363**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0444	0.4649	0.4473	7.0000e-004		0.0252	0.0252		0.0231	0.0231	0.0000	62.4492	62.4492	0.0198	0.0000	62.9432
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0444**	**0.4649**	**0.4473**	**7.0000e-004**		**0.0252**	**0.0252**		**0.0231**	**0.0231**	**0.0000**	**62.4492**	**62.4492**	**0.0198**	**0.0000**	**62.9432**

3.5 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-003	1.4900e-003	0.0145	4.0000e-005	3.6400e-003	3.0000e-005	3.6700e-003	9.7000e-004	2.0000e-005	9.9000e-004	0.0000	3.3337	3.3337	1.0000e-004	0.0000	3.3363
Total	**2.0000e-003**	**1.4900e-003**	**0.0145**	**4.0000e-005**	**3.6400e-003**	**3.0000e-005**	**3.6700e-003**	**9.7000e-004**	**2.0000e-005**	**9.9000e-004**	**0.0000**	**3.3337**	**3.3337**	**1.0000e-004**	**0.0000**	**3.3363**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0129	0.1336	0.1392	2.2000e-004		7.1500e-003	7.1500e-003		6.5800e-003	6.5800e-003	0.0000	19.0268	19.0268	6.1500e-003	0.0000	19.1807
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0129**	**0.1336**	**0.1392**	**2.2000e-004**		**7.1500e-003**	**7.1500e-003**		**6.5800e-003**	**6.5800e-003**	**0.0000**	**19.0268**	**19.0268**	**6.1500e-003**	**0.0000**	**19.1807**

3.5 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-004	4.1000e-004	4.0300e-003	1.0000e-005	1.1400e-003	1.0000e-005	1.1400e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	1.0066	1.0066	3.0000e-005	0.0000	1.0073
Total	**5.7000e-004**	**4.1000e-004**	**4.0300e-003**	**1.0000e-005**	**1.1400e-003**	**1.0000e-005**	**1.1400e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**1.0066**	**1.0066**	**3.0000e-005**	**0.0000**	**1.0073**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0129	0.1336	0.1392	2.2000e-004		7.1500e-003	7.1500e-003		6.5800e-003	6.5800e-003	0.0000	19.0268	19.0268	6.1500e-003	0.0000	19.1806
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0129**	**0.1336**	**0.1392**	**2.2000e-004**		**7.1500e-003**	**7.1500e-003**		**6.5800e-003**	**6.5800e-003**	**0.0000**	**19.0268**	**19.0268**	**6.1500e-003**	**0.0000**	**19.1806**

3.5 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-004	4.1000e-004	4.0300e-003	1.0000e-005	1.1400e-003	1.0000e-005	1.1400e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	1.0066	1.0066	3.0000e-005	0.0000	1.0073
Total	**5.7000e-004**	**4.1000e-004**	**4.0300e-003**	**1.0000e-005**	**1.1400e-003**	**1.0000e-005**	**1.1400e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**1.0066**	**1.0066**	**3.0000e-005**	**0.0000**	**1.0073**

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3705					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.2600e-003	0.0156	0.0157	3.0000e-005		1.0900e-003	1.0900e-003		1.0900e-003	1.0900e-003	0.0000	2.1703	2.1703	1.8000e-004	0.0000	2.1749
Total	**0.3728**	**0.0156**	**0.0157**	**3.0000e-005**		**1.0900e-003**	**1.0900e-003**		**1.0900e-003**	**1.0900e-003**	**0.0000**	**2.1703**	**2.1703**	**1.8000e-004**	**0.0000**	**2.1749**

3.6 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1300e-003	3.0700e-003	0.0299	8.0000e-005	7.5200e-003	5.0000e-005	7.5700e-003	2.0000e-003	5.0000e-005	2.0500e-003	0.0000	6.8752	6.8752	2.1000e-004	0.0000	6.8804
Total	**4.1300e-003**	**3.0700e-003**	**0.0299**	**8.0000e-005**	**7.5200e-003**	**5.0000e-005**	**7.5700e-003**	**2.0000e-003**	**5.0000e-005**	**2.0500e-003**	**0.0000**	**6.8752**	**6.8752**	**2.1000e-004**	**0.0000**	**6.8804**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3705					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.2600e-003	0.0156	0.0157	3.0000e-005		1.0900e-003	1.0900e-003		1.0900e-003	1.0900e-003	0.0000	2.1703	2.1703	1.8000e-004	0.0000	2.1749
Total	**0.3728**	**0.0156**	**0.0157**	**3.0000e-005**		**1.0900e-003**	**1.0900e-003**		**1.0900e-003**	**1.0900e-003**	**0.0000**	**2.1703**	**2.1703**	**1.8000e-004**	**0.0000**	**2.1749**

3.6 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1300e-003	3.0700e-003	0.0299	8.0000e-005	7.5200e-003	5.0000e-005	7.5700e-003	2.0000e-003	5.0000e-005	2.0500e-003	0.0000	6.8752	6.8752	2.1000e-004	0.0000	6.8804
Total	**4.1300e-003**	**3.0700e-003**	**0.0299**	**8.0000e-005**	**7.5200e-003**	**5.0000e-005**	**7.5700e-003**	**2.0000e-003**	**5.0000e-005**	**2.0500e-003**	**0.0000**	**6.8752**	**6.8752**	**2.1000e-004**	**0.0000**	**6.8804**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.7099					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.2206	0.2399	3.9000e-004		0.0145	0.0145		0.0145	0.0145	0.0000	33.4476	33.4476	2.5900e-003	0.0000	33.5124
Total	**5.7416**	**0.2206**	**0.2399**	**3.9000e-004**		**0.0145**	**0.0145**		**0.0145**	**0.0145**	**0.0000**	**33.4476**	**33.4476**	**2.5900e-003**	**0.0000**	**33.5124**

3.6 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0580	0.0417	0.4110	1.1400e-003	0.1158	7.9000e-004	0.1166	0.0308	7.3000e-004	0.0315	0.0000	102.7163	102.7163	2.8300e-003	0.0000	102.7871
Total	**0.0580**	**0.0417**	**0.4110**	**1.1400e-003**	**0.1158**	**7.9000e-004**	**0.1166**	**0.0308**	**7.3000e-004**	**0.0315**	**0.0000**	**102.7163**	**102.7163**	**2.8300e-003**	**0.0000**	**102.7871**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.7099					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.2206	0.2399	3.9000e-004		0.0145	0.0145		0.0145	0.0145	0.0000	33.4476	33.4476	2.5900e-003	0.0000	33.5123
Total	**5.7416**	**0.2206**	**0.2399**	**3.9000e-004**		**0.0145**	**0.0145**		**0.0145**	**0.0145**	**0.0000**	**33.4476**	**33.4476**	**2.5900e-003**	**0.0000**	**33.5123**

3.6 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0580	0.0417	0.4110	1.1400e-003	0.1158	7.9000e-004	0.1166	0.0308	7.3000e-004	0.0315	0.0000	102.7163	102.7163	2.8300e-003	0.0000	102.7871
Total	**0.0580**	**0.0417**	**0.4110**	**1.1400e-003**	**0.1158**	**7.9000e-004**	**0.1166**	**0.0308**	**7.3000e-004**	**0.0315**	**0.0000**	**102.7163**	**102.7163**	**2.8300e-003**	**0.0000**	**102.7871**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.6881					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0286	0.1993	0.2372	3.9000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	33.3200	33.3200	2.2900e-003	0.0000	33.3771
Total	**5.7167**	**0.1993**	**0.2372**	**3.9000e-004**		**0.0123**	**0.0123**		**0.0123**	**0.0123**	**0.0000**	**33.3200**	**33.3200**	**2.2900e-003**	**0.0000**	**33.3771**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0534	0.0370	0.3729	1.0900e-003	0.1154	7.6000e-004	0.1161	0.0307	7.0000e-004	0.0314	0.0000	98.4658	98.4658	2.5100e-003	0.0000	98.5287
Total	**0.0534**	**0.0370**	**0.3729**	**1.0900e-003**	**0.1154**	**7.6000e-004**	**0.1161**	**0.0307**	**7.0000e-004**	**0.0314**	**0.0000**	**98.4658**	**98.4658**	**2.5100e-003**	**0.0000**	**98.5287**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.6881					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0286	0.1993	0.2372	3.9000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	33.3199	33.3199	2.2900e-003	0.0000	33.3771
Total	**5.7167**	**0.1993**	**0.2372**	**3.9000e-004**		**0.0123**	**0.0123**		**0.0123**	**0.0123**	**0.0000**	**33.3199**	**33.3199**	**2.2900e-003**	**0.0000**	**33.3771**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0534	0.0370	0.3729	1.0900e-003	0.1154	7.6000e-004	0.1161	0.0307	7.0000e-004	0.0314	0.0000	98.4658	98.4658	2.5100e-003	0.0000	98.5287
Total	**0.0534**	**0.0370**	**0.3729**	**1.0900e-003**	**0.1154**	**7.6000e-004**	**0.1161**	**0.0307**	**7.0000e-004**	**0.0314**	**0.0000**	**98.4658**	**98.4658**	**2.5100e-003**	**0.0000**	**98.5287**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.6663					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.1831	0.2358	3.9000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	33.1923	33.1923	2.1600e-003	0.0000	33.2463
Total	**5.6929**	**0.1831**	**0.2358**	**3.9000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**33.1923**	**33.1923**	**2.1600e-003**	**0.0000**	**33.2463**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0493	0.0329	0.3388	1.0500e-003	0.1149	7.3000e-004	0.1157	0.0306	6.7000e-004	0.0312	0.0000	94.6014	94.6014	2.2400e-003	0.0000	94.6574
Total	**0.0493**	**0.0329**	**0.3388**	**1.0500e-003**	**0.1149**	**7.3000e-004**	**0.1157**	**0.0306**	**6.7000e-004**	**0.0312**	**0.0000**	**94.6014**	**94.6014**	**2.2400e-003**	**0.0000**	**94.6574**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.6663					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.1831	0.2358	3.9000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	33.1923	33.1923	2.1600e-003	0.0000	33.2463
Total	**5.6929**	**0.1831**	**0.2358**	**3.9000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**33.1923**	**33.1923**	**2.1600e-003**	**0.0000**	**33.2463**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0493	0.0329	0.3388	1.0500e-003	0.1149	7.3000e-004	0.1157	0.0306	6.7000e-004	0.0312	0.0000	94.6014	94.6014	2.2400e-003	0.0000	94.6574
Total	**0.0493**	**0.0329**	**0.3388**	**1.0500e-003**	**0.1149**	**7.3000e-004**	**0.1157**	**0.0306**	**6.7000e-004**	**0.0312**	**0.0000**	**94.6014**	**94.6014**	**2.2400e-003**	**0.0000**	**94.6574**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.6663					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.1694	0.2355	3.9000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419
Total	**5.6913**	**0.1694**	**0.2355**	**3.9000e-004**		**9.2100e-003**	**9.2100e-003**		**9.2100e-003**	**9.2100e-003**	**0.0000**	**33.1923**	**33.1923**	**1.9900e-003**	**0.0000**	**33.2419**

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0295	0.3088	1.0100e-003	0.1149	7.1000e-004	0.1157	0.0306	6.5000e-004	0.0312	0.0000	91.0807	91.0807	2.0000e-003	0.0000	91.1307
Total	**0.0459**	**0.0295**	**0.3088**	**1.0100e-003**	**0.1149**	**7.1000e-004**	**0.1157**	**0.0306**	**6.5000e-004**	**0.0312**	**0.0000**	**91.0807**	**91.0807**	**2.0000e-003**	**0.0000**	**91.1307**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.6663					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.1694	0.2354	3.9000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419
Total	**5.6913**	**0.1694**	**0.2354**	**3.9000e-004**		**9.2100e-003**	**9.2100e-003**		**9.2100e-003**	**9.2100e-003**	**0.0000**	**33.1923**	**33.1923**	**1.9900e-003**	**0.0000**	**33.2419**

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0295	0.3088	1.0100e-003	0.1149	7.1000e-004	0.1157	0.0306	6.5000e-004	0.0312	0.0000	91.0807	91.0807	2.0000e-003	0.0000	91.1307
Total	**0.0459**	**0.0295**	**0.3088**	**1.0100e-003**	**0.1149**	**7.1000e-004**	**0.1157**	**0.0306**	**6.5000e-004**	**0.0312**	**0.0000**	**91.0807**	**91.0807**	**2.0000e-003**	**0.0000**	**91.1307**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1744					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2000e-004	4.8800e-003	7.2400e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	1.0213	1.0213	6.0000e-005	0.0000	1.0227
Total	**0.1751**	**4.8800e-003**	**7.2400e-003**	**1.0000e-005**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**1.0213**	**1.0213**	**6.0000e-005**	**0.0000**	**1.0227**

3.6 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3200e-003	8.2000e-004	8.7500e-003	3.0000e-005	3.5400e-003	2.0000e-005	3.5600e-003	9.4000e-004	2.0000e-005	9.6000e-004	0.0000	2.6820	2.6820	6.0000e-005	0.0000	2.6834
Total	**1.3200e-003**	**8.2000e-004**	**8.7500e-003**	**3.0000e-005**	**3.5400e-003**	**2.0000e-005**	**3.5600e-003**	**9.4000e-004**	**2.0000e-005**	**9.6000e-004**	**0.0000**	**2.6820**	**2.6820**	**6.0000e-005**	**0.0000**	**2.6834**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1744					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2000e-004	4.8800e-003	7.2400e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	1.0213	1.0213	6.0000e-005	0.0000	1.0227
Total	**0.1751**	**4.8800e-003**	**7.2400e-003**	**1.0000e-005**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**1.0213**	**1.0213**	**6.0000e-005**	**0.0000**	**1.0227**

3.6 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3200e-003	8.2000e-004	8.7500e-003	3.0000e-005	3.5400e-003	2.0000e-005	3.5600e-003	9.4000e-004	2.0000e-005	9.6000e-004	0.0000	2.6820	2.6820	6.0000e-005	0.0000	2.6834
Total	**1.3200e-003**	**8.2000e-004**	**8.7500e-003**	**3.0000e-005**	**3.5400e-003**	**2.0000e-005**	**3.5600e-003**	**9.4000e-004**	**2.0000e-005**	**9.6000e-004**	**0.0000**	**2.6820**	**2.6820**	**6.0000e-005**	**0.0000**	**2.6834**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.7378	25.5262	40.7633	0.1443	10.2686	0.1532	10.4218	2.7537	0.1445	2.8982	0.0000	13,287.1333	13,287.1333	0.6904	0.0000	13,304.3930
Unmitigated	3.8819	26.9392	44.0004	0.1582	11.3780	0.1679	11.5459	3.0512	0.1584	3.2096	0.0000	14,561.4575	14,561.4575	0.7277	0.0000	14,579.6500

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,746.24	1,738.08	1593.92	4,993,849	4,506,949
Elementary School	967.50	0.00	0.00	1,523,770	1,375,203
Single Family Housing	8,025.90	9,216.30	8016.60	23,746,532	21,431,245
Total	10,739.64	10,954.38	9,610.52	30,264,151	27,313,397

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	45.60	19.00	35.40	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
Single Family Housing	10.80	7.30	7.50	45.60	19.00	35.40	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931
Elementary School	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931
Single Family Housing	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,240.2800	1,240.2800	0.1240	0.0257	1,251.0277
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,240.2800	1,240.2800	0.1240	0.0257	1,251.0277
NaturalGas Mitigated	0.1505	1.2878	0.5601	8.2100e-003		0.1040	0.1040		0.1040	0.1040	0.0000	1,489.4323	1,489.4323	0.0286	0.0273	1,498.2832
NaturalGas Unmitigated	0.1505	1.2878	0.5601	8.2100e-003		0.1040	0.1040		0.1040	0.1040	0.0000	1,489.4323	1,489.4323	0.0286	0.0273	1,498.2832

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	3.29085e+006	0.0177	0.1516	0.0645	9.7000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	175.6124	175.6124	3.3700e-003	3.2200e-003	176.6560
Elementary School	593793	3.2000e-003	0.0291	0.0245	1.7000e-004		2.2100e-003	2.2100e-003		2.2100e-003	2.2100e-003	0.0000	31.6871	31.6871	6.1000e-004	5.8000e-004	31.8754
Single Family Housing	2.40263e+007	0.1296	1.1071	0.4711	7.0700e-003		0.0895	0.0895		0.0895	0.0895	0.0000	1,282.1328	1,282.1328	0.0246	0.0235	1,289.7519
Total		**0.1505**	**1.2878**	**0.5601**	**8.2100e-003**		**0.1040**	**0.1040**		**0.1040**	**0.1040**	**0.0000**	**1,489.4323**	**1,489.4323**	**0.0286**	**0.0273**	**1,498.2832**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	3.29085e+006	0.0177	0.1516	0.0645	9.7000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	175.6124	175.6124	3.3700e-003	3.2200e-003	176.6560
Elementary School	593793	3.2000e-003	0.0291	0.0245	1.7000e-004		2.2100e-003	2.2100e-003		2.2100e-003	2.2100e-003	0.0000	31.6871	31.6871	6.1000e-004	5.8000e-004	31.8754
Single Family Housing	2.40263e+007	0.1296	1.1071	0.4711	7.0700e-003		0.0895	0.0895		0.0895	0.0895	0.0000	1,282.1328	1,282.1328	0.0246	0.0235	1,289.7519
Total		**0.1505**	**1.2878**	**0.5601**	**8.2100e-003**		**0.1040**	**0.1040**		**0.1040**	**0.1040**	**0.0000**	**1,489.4323**	**1,489.4323**	**0.0286**	**0.0273**	**1,498.2832**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.22243e+006	160.8011	0.0161	3.3300e-003	162.1945
Elementary School	353642	46.5187	4.6500e-003	9.6000e-004	46.9219
Single Family Housing	7.85272e+006	1,032.9602	0.1033	0.0214	1,041.9114
Total		**1,240.2800**	**0.1240**	**0.0257**	**1,251.0277**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.22243e+006	160.8011	0.0161	3.3300e-003	162.1945
Elementary School	353642	46.5187	4.6500e-003	9.6000e-004	46.9219
Single Family Housing	7.85272e+006	1,032.9602	0.1033	0.0214	1,041.9114
Total		**1,240.2800**	**0.1240**	**0.0257**	**1,251.0277**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	12.4020	0.5533	9.1529	3.3400e-003		0.0856	0.0856		0.0856	0.0856	0.0000	535.3075	535.3075	0.0242	9.5500e-003	538.7582
Unmitigated	17.6537	1.3313	56.8454	0.1590		7.8658	7.8658		7.8658	7.8658	1,041.7693	535.3075	1,577.0768	4.8943	9.5500e-003	1,702.2789

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.3276					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	9.7485					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.3042	1.2276	47.8838	0.1585		7.8165	7.8165		7.8165	7.8165	1,041.7693	520.7153	1,562.4846	4.8800	9.5500e-003	1,687.3304
Landscaping	0.2733	0.1036	8.9616	4.7000e-004		0.0493	0.0493		0.0493	0.0493	0.0000	14.5922	14.5922	0.0143	0.0000	14.9485
Total	**17.6536**	**1.3313**	**56.8454**	**0.1589**		**7.8658**	**7.8658**		**7.8658**	**7.8658**	**1,041.7693**	**535.3075**	**1,577.0768**	**4.8943**	**9.5500e-003**	**1,702.2789**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.3276					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	9.7485					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0526	0.4496	0.1913	2.8700e-003		0.0364	0.0364		0.0364	0.0364	0.0000	520.7153	520.7153	9.9800e-003	9.5500e-003	523.8096
Landscaping	0.2733	0.1036	8.9616	4.7000e-004		0.0493	0.0493		0.0493	0.0493	0.0000	14.5922	14.5922	0.0143	0.0000	14.9485
Total	**12.4020**	**0.5533**	**9.1529**	**3.3400e-003**		**0.0856**	**0.0856**		**0.0856**	**0.0856**	**0.0000**	**535.3075**	**535.3075**	**0.0242**	**9.5500e-003**	**538.7582**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	89.3330	2.0958	0.0508	156.8523
Unmitigated	107.3428	2.6193	0.0634	191.7044

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	17.7219 / 11.1725	23.3801	0.5792	0.0140	42.0340
Elementary School	1.81818 / 4.67532	4.0235	0.0596	1.4700e-003	5.9513
Single Family Housing	60.5932 / 38.2001	79.9392	1.9805	0.0479	143.7191
Total		**107.3428**	**2.6193**	**0.0634**	**191.7044**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	14.1775 / 10.491	19.4191	0.4635	0.0112	34.3484
Elementary School	1.45454 / 4.39013	3.5180	0.0477	1.1800e-003	5.0629
Single Family Housing	48.4746 / 35.8699	66.3960	1.5847	0.0384	117.4411
Total		**89.3330**	**2.0958**	**0.0508**	**156.8523**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	268.7600	15.8833	0.0000	665.8416
Unmitigated	268.7600	15.8833	0.0000	665.8416

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	125.12	25.3982	1.5010	0.0000	62.9230
Elementary School	136.88	27.7854	1.6421	0.0000	68.8372
Single Family Housing	1062	215.5764	12.7402	0.0000	534.0814
Total		**268.7600**	**15.8833**	**0.0000**	**665.8416**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	125.12	25.3982	1.5010	0.0000	62.9230
Elementary School	136.88	27.7854	1.6421	0.0000	68.8372
Single Family Housing	1062	215.5764	12.7402	0.0000	534.0814
Total		**268.7600**	**15.8833**	**0.0000**	**665.8416**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	-873.1180	0.0000	0.0000	-873.1180

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Cropland	282.89 / 0	-1,753.9180	0.0000	0.0000	-1,753.9180
Grassland	10.18 / 10.18	0.0000	0.0000	0.0000	0.0000
Wetlands	10.18 / 10.18	0.0000	0.0000	0.0000	0.0000
Total		**-1,753.9180**	**0.0000**	**0.0000**	**-1,753.9180**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Mixed Hardwood	1200	880.8000	0.0000	0.0000	880.8000
Total		**880.8000**	**0.0000**	**0.0000**	**880.8000**

Stockton Tra Vigne - Reduced Project Alternative - 2020

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	226.00	Dwelling Unit	7.90	226,000.00	717
Single Family Housing	805.00	Dwelling Unit	167.00	1,449,000.00	2553
Elementary School	750.00	Student	14.70	62,702.53	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Stockton Tra Vigne - Reduced Project Alternative - 2020 - San Joaquin County, Annual

Project Characteristics - CO2 intensty factor as provided by PG&E:
https://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf

Land Use - Total of 1,031 units [805 LDR and 226 HDR] under this variation." Proposed GP land uses (7.9 HDR, 167 ac LDR., 14.7 School). Existing 15.57 I and 20.36 acres of OS not included. Assumes 90 units built on the school site--worst case scenario.

Construction Phase - Based on project size and type.

Grading - Acres of Grading (Grading Phase): 200.15

Vehicle Trips - Trip gen adjusted per traffic engineer. Trip lengths remain defaults.

Woodstoves -

Energy Use -

Land Use Change -

Sequestration - Assumes approx 1 front yard tree per SFR unit. Commercial site plan shows approx 150 trees within landscaping.

Construction Off-road Equipment Mitigation - Tier 2 Engines

Mobile Land Use Mitigation -

Energy Mitigation -

Water Mitigation -

Trips and VMT -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	5
tblConstructionPhase	NumDays	120.00	20.00
tblConstructionPhase	NumDays	310.00	180.00
tblConstructionPhase	NumDays	3,100.00	1,047.00
tblConstructionPhase	NumDays	220.00	80.00
tblConstructionPhase	NumDays	220.00	1,068.00
tblConstructionPhase	PhaseEndDate	6/17/2019	1/28/2019
tblConstructionPhase	PhaseEndDate	8/24/2020	10/7/2019
tblConstructionPhase	PhaseEndDate	7/12/2032	10/11/2023

tblConstructionPhase	PhaseEndDate	5/16/2033	1/27/2020
tblConstructionPhase	PhaseEndDate	3/20/2034	1/10/2024
tblConstructionPhase	PhaseStartDate	6/18/2019	1/29/2019
tblConstructionPhase	PhaseStartDate	8/25/2020	10/8/2019
tblConstructionPhase	PhaseStartDate	7/13/2032	10/8/2019
tblConstructionPhase	PhaseStartDate	5/17/2033	12/8/2019
tblGrading	AcresOfGrading	450.00	200.15
tblGrading	AcresOfGrading	0.00	200.15
tblLandUse	LotAcreage	14.13	7.90
tblLandUse	LotAcreage	261.36	167.00
tblLandUse	LotAcreage	1.44	14.70
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblSequestration	NumberOfNewTrees	0.00	1,031.00
tblVehicleTrips	ST_TR	7.16	6.39
tblVehicleTrips	SU_TR	6.07	5.86
tblVehicleTrips	WD_TR	6.59	6.42
tblVehicleTrips	WD_TR	9.52	8.63

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.9422	7.0203	4.8842	9.9900e-003	1.1014	0.3086	1.4100	0.4650	0.2849	0.7499	0.0000	901.0853	901.0853	0.2175	0.0000	906.5216
2020	4.6509	4.9430	5.1148	0.0145	0.7050	0.1824	0.8873	0.1898	0.1723	0.3621	0.0000	1,311.2181	1,311.2181	0.1237	0.0000	1,314.3097
2021	4.5536	4.3430	4.6775	0.0139	0.7012	0.1461	0.8472	0.1888	0.1381	0.3269	0.0000	1,262.3929	1,262.3929	0.1129	0.0000	1,265.2147
2022	4.4854	3.9668	4.4359	0.0136	0.6985	0.1237	0.8222	0.1881	0.1170	0.3051	0.0000	1,235.7281	1,235.7281	0.1092	0.0000	1,238.4587
2023	4.3388	2.7134	3.4006	0.0107	0.5671	0.0842	0.6514	0.1527	0.0798	0.2324	0.0000	967.4558	967.4558	0.0791	0.0000	969.4341
2024	0.1229	5.5800e-003	0.0148	4.0000e-005	3.0600e-003	2.6000e-004	3.3200e-003	8.1000e-004	2.6000e-004	1.0700e-003	0.0000	3.3409	3.3409	1.1000e-004	0.0000	3.3435
Maximum	**4.6509**	**7.0203**	**5.1148**	**0.0145**	**1.1014**	**0.3086**	**1.4100**	**0.4650**	**0.2849**	**0.7499**	**0.0000**	**1,311.2181**	**1,311.2181**	**0.2175**	**0.0000**	**1,314.3097**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.9422	7.0203	4.8842	9.9900e-003	0.5311	0.3086	0.8397	0.2087	0.2849	0.4936	0.0000	901.0845	901.0845	0.2175	0.0000	906.5208
2020	4.6509	4.9430	5.1148	0.0145	0.7050	0.1824	0.8873	0.1898	0.1723	0.3621	0.0000	1,311.2177	1,311.2177	0.1237	0.0000	1,314.3093
2021	4.5536	4.3430	4.6775	0.0139	0.7012	0.1461	0.8472	0.1888	0.1381	0.3269	0.0000	1,262.3925	1,262.3925	0.1129	0.0000	1,265.2143
2022	4.4854	3.9668	4.4359	0.0136	0.6985	0.1237	0.8222	0.1881	0.1170	0.3051	0.0000	1,235.7277	1,235.7277	0.1092	0.0000	1,238.4583
2023	4.3388	2.7134	3.4006	0.0107	0.5671	0.0842	0.6514	0.1527	0.0798	0.2324	0.0000	967.4554	967.4554	0.0791	0.0000	969.4338
2024	0.1229	5.5800e-003	0.0148	4.0000e-005	3.0600e-003	2.6000e-004	3.3200e-003	8.1000e-004	2.6000e-004	1.0700e-003	0.0000	3.3409	3.3409	1.1000e-004	0.0000	3.3435
Maximum	**4.6509**	**7.0203**	**5.1148**	**0.0145**	**0.7050**	**0.3086**	**0.8873**	**0.2087**	**0.2849**	**0.4936**	**0.0000**	**1,311.2177**	**1,311.2177**	**0.2175**	**0.0000**	**1,314.3093**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**15.10**	**0.00**	**12.34**	**21.63**	**0.00**	**12.96**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2019**	**3-31-2019**	1.8164	1.8164
2	**4-1-2019**	**6-30-2019**	1.9310	1.9310
3	**7-1-2019**	**9-30-2019**	1.9522	1.9522
4	**10-1-2019**	**12-31-2019**	2.2682	2.2682
5	**1-1-2020**	**3-31-2020**	2.5043	2.5043

6	**4-1-2020**	**6-30-2020**	2.3396	2.3396
7	**7-1-2020**	**9-30-2020**	2.3653	2.3653
8	**10-1-2020**	**12-31-2020**	2.3804	2.3804
9	**1-1-2021**	**3-31-2021**	2.2007	2.2007
10	**4-1-2021**	**6-30-2021**	2.2131	2.2131
11	**7-1-2021**	**9-30-2021**	2.2374	2.2374
12	**10-1-2021**	**12-31-2021**	2.2496	2.2496
13	**1-1-2022**	**3-31-2022**	2.0983	2.0983
14	**4-1-2022**	**6-30-2022**	2.1111	2.1111
15	**7-1-2022**	**9-30-2022**	2.1343	2.1343
16	**10-1-2022**	**12-31-2022**	2.1449	2.1449
17	**1-1-2023**	**3-31-2023**	1.9500	1.9500
18	**4-1-2023**	**6-30-2023**	1.9636	1.9636
19	**7-1-2023**	**9-30-2023**	1.9852	1.9852
20	**10-1-2023**	**12-31-2023**	1.1726	1.1726
21	**1-1-2024**	**3-31-2024**	0.1149	0.1149
		Highest	2.5043	2.5043

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	12.2464	1.0026	40.2218	0.1085		5.3540	5.3540		5.3540	5.3540	707.0722	459.1550	1,166.2273	3.3262	8.1900e-003	1,251.8226
Energy	0.1301	1.1134	0.4859	7.1000e-003		0.0899	0.0899		0.0899	0.0899	0.0000	2,361.6504	2,361.6504	0.1321	0.0458	2,378.6097
Mobile	3.3692	23.3722	38.1546	0.1371	9.8605	0.1455	10.0060	2.6443	0.1373	2.7815	0.0000	12,622.5151	12,622.5151	0.6314	0.0000	12,638.2992
Waste						0.0000	0.0000		0.0000	0.0000	235.4533	0.0000	235.4533	13.9149	0.0000	583.3255
Water						0.0000	0.0000		0.0000	0.0000	21.8880	70.7563	92.6443	2.2552	0.0546	165.2786
Total	**15.7456**	**25.4882**	**78.8622**	**0.2527**	**9.8605**	**5.5894**	**15.4499**	**2.6443**	**5.5812**	**8.2254**	**964.4135**	**15,514.0768**	**16,478.4903**	**20.2597**	**0.1086**	**17,017.3356**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.6820	0.4746	7.8518	2.8700e-003		0.0734	0.0734		0.0734	0.0734	0.0000	459.1550	459.1550	0.0208	8.1900e-003	462.1149
Energy	0.1301	1.1134	0.4859	7.1000e-003		0.0899	0.0899		0.0899	0.0899	0.0000	2,361.6504	2,361.6504	0.1321	0.0458	2,378.6097
Mobile	3.2443	22.1477	35.3492	0.1251	8.8991	0.1328	9.0319	2.3864	0.1252	2.5117	0.0000	11,518.1457	11,518.1457	0.5990	0.0000	11,533.1214
Waste						0.0000	0.0000		0.0000	0.0000	235.4533	0.0000	235.4533	13.9149	0.0000	583.3255
Water						0.0000	0.0000		0.0000	0.0000	17.5104	59.6143	77.1247	1.8045	0.0437	135.2583
Total	**12.0564**	**23.7356**	**43.6868**	**0.1351**	**8.8991**	**0.2961**	**9.1952**	**2.3864**	**0.2886**	**2.6750**	**252.9637**	**14,398.5654**	**14,651.5291**	**16.4713**	**0.0977**	**15,092.4298**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**23.43**	**6.88**	**44.60**	**46.55**	**9.75**	**94.70**	**40.48**	**9.75**	**94.83**	**67.48**	**73.77**	**7.19**	**11.09**	**18.70**	**9.99**	**11.31**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	756.7540
Vegetation Land Change	-1,240.9300
Total	**-484.1760**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2019	1/28/2019	5	20	
2	Grading	Grading	1/29/2019	10/7/2019	5	180	
3	Building Construction	Building Construction	10/8/2019	10/11/2023	5	1047	
4	Paving	Paving	10/8/2019	1/27/2020	5	80	
5	Architectural Coating	Architectural Coating	12/8/2019	1/10/2024	5	1068	

Acres of Grading (Site Preparation Phase): 200.15

Acres of Grading (Grading Phase): 200.15

Acres of Paving: 0

Residential Indoor: 3,391,875; Residential Outdoor: 1,130,625; Non-Residential Indoor: 94,054; Non-Residential Outdoor: 31,351; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	479.00	120.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	96.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2868	0.0000	0.2868	0.1108	0.0000	0.1108	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0434	0.4557	0.2206	3.8000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	34.1687	34.1687	0.0108	0.0000	34.4390
Total	**0.0434**	**0.4557**	**0.2206**	**3.8000e-004**	**0.2868**	**0.0239**	**0.3107**	**0.1108**	**0.0220**	**0.1328**	**0.0000**	**34.1687**	**34.1687**	**0.0108**	**0.0000**	**34.4390**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-004	5.9000e-004	5.7100e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3116	1.3116	4.0000e-005	0.0000	1.3126
Total	**7.9000e-004**	**5.9000e-004**	**5.7100e-003**	**1.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.3116**	**1.3116**	**4.0000e-005**	**0.0000**	**1.3126**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1119	0.0000	0.1119	0.0432	0.0000	0.0432	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0434	0.4557	0.2206	3.8000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	34.1687	34.1687	0.0108	0.0000	34.4389
Total	**0.0434**	**0.4557**	**0.2206**	**3.8000e-004**	**0.1119**	**0.0239**	**0.1358**	**0.0432**	**0.0220**	**0.0652**	**0.0000**	**34.1687**	**34.1687**	**0.0108**	**0.0000**	**34.4389**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-004	5.9000e-004	5.7100e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3116	1.3116	4.0000e-005	0.0000	1.3126
Total	**7.9000e-004**	**5.9000e-004**	**5.7100e-003**	**1.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.3116**	**1.3116**	**4.0000e-005**	**0.0000**	**1.3126**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6481	0.0000	0.6481	0.3094	0.0000	0.3094	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4265	4.9068	3.0039	5.5800e-003		0.2144	0.2144		0.1973	0.1973	0.0000	501.3119	501.3119	0.1586	0.0000	505.2771
Total	**0.4265**	**4.9068**	**3.0039**	**5.5800e-003**	**0.6481**	**0.2144**	**0.8626**	**0.3094**	**0.1973**	**0.5067**	**0.0000**	**501.3119**	**501.3119**	**0.1586**	**0.0000**	**505.2771**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8700e-003	5.8500e-003	0.0571	1.5000e-004	0.0143	1.0000e-004	0.0144	3.8100e-003	9.0000e-005	3.9000e-003	0.0000	13.1164	13.1164	4.0000e-004	0.0000	13.1264
Total	**7.8700e-003**	**5.8500e-003**	**0.0571**	**1.5000e-004**	**0.0143**	**1.0000e-004**	**0.0144**	**3.8100e-003**	**9.0000e-005**	**3.9000e-003**	**0.0000**	**13.1164**	**13.1164**	**4.0000e-004**	**0.0000**	**13.1264**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2528	0.0000	0.2528	0.1207	0.0000	0.1207	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4265	4.9068	3.0039	5.5800e-003		0.2144	0.2144		0.1973	0.1973	0.0000	501.3113	501.3113	0.1586	0.0000	505.2765
Total	**0.4265**	**4.9068**	**3.0039**	**5.5800e-003**	**0.2528**	**0.2144**	**0.4672**	**0.1207**	**0.1973**	**0.3179**	**0.0000**	**501.3113**	**501.3113**	**0.1586**	**0.0000**	**505.2765**

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8700e-003	5.8500e-003	0.0571	1.5000e-004	0.0143	1.0000e-004	0.0144	3.8100e-003	9.0000e-005	3.9000e-003	0.0000	13.1164	13.1164	4.0000e-004	0.0000	13.1264
Total	**7.8700e-003**	**5.8500e-003**	**0.0571**	**1.5000e-004**	**0.0143**	**1.0000e-004**	**0.0144**	**3.8100e-003**	**9.0000e-005**	**3.9000e-003**	**0.0000**	**13.1164**	**13.1164**	**4.0000e-004**	**0.0000**	**13.1264**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0720	0.6429	0.5235	8.2000e-004		0.0393	0.0393		0.0370	0.0370	0.0000	71.7068	71.7068	0.0175	0.0000	72.1435
Total	**0.0720**	**0.6429**	**0.5235**	**8.2000e-004**		**0.0393**	**0.0393**		**0.0370**	**0.0370**	**0.0000**	**71.7068**	**71.7068**	**0.0175**	**0.0000**	**72.1435**

3.4 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0184	0.4763	0.1064	1.0400e-003	0.0242	3.6500e-003	0.0278	6.9900e-003	3.4900e-003	0.0105	0.0000	99.1132	99.1132	6.6300e-003	0.0000	99.2790
Worker	0.0639	0.0475	0.4636	1.1800e-003	0.1164	8.2000e-004	0.1172	0.0309	7.5000e-004	0.0317	0.0000	106.4574	106.4574	3.2600e-003	0.0000	106.5390
Total	**0.0823**	**0.5238**	**0.5700**	**2.2200e-003**	**0.1406**	**4.4700e-003**	**0.1450**	**0.0379**	**4.2400e-003**	**0.0422**	**0.0000**	**205.5706**	**205.5706**	**9.8900e-003**	**0.0000**	**205.8180**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0720	0.6429	0.5235	8.2000e-004		0.0393	0.0393		0.0370	0.0370	0.0000	71.7067	71.7067	0.0175	0.0000	72.1434
Total	**0.0720**	**0.6429**	**0.5235**	**8.2000e-004**		**0.0393**	**0.0393**		**0.0370**	**0.0370**	**0.0000**	**71.7067**	**71.7067**	**0.0175**	**0.0000**	**72.1434**

3.4 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0184	0.4763	0.1064	1.0400e-003	0.0242	3.6500e-003	0.0278	6.9900e-003	3.4900e-003	0.0105	0.0000	99.1132	99.1132	6.6300e-003	0.0000	99.2790
Worker	0.0639	0.0475	0.4636	1.1800e-003	0.1164	8.2000e-004	0.1172	0.0309	7.5000e-004	0.0317	0.0000	106.4574	106.4574	3.2600e-003	0.0000	106.5390
Total	**0.0823**	**0.5238**	**0.5700**	**2.2200e-003**	**0.1406**	**4.4700e-003**	**0.1450**	**0.0379**	**4.2400e-003**	**0.0422**	**0.0000**	**205.5706**	**205.5706**	**9.8900e-003**	**0.0000**	**205.8180**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4091	303.4091	0.0740	0.0000	305.2596
Total	**0.2777**	**2.5134**	**2.2072**	**3.5300e-003**		**0.1463**	**0.1463**		**0.1376**	**0.1376**	**0.0000**	**303.4091**	**303.4091**	**0.0740**	**0.0000**	**305.2596**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0637	1.8591	0.3957	4.4500e-003	0.1039	0.0103	0.1141	0.0300	9.8100e-003	0.0398	0.0000	422.2391	422.2391	0.0262	0.0000	422.8942
Worker	0.2504	0.1798	1.7734	4.9100e-003	0.4998	3.4000e-003	0.5032	0.1329	3.1300e-003	0.1360	0.0000	443.2532	443.2532	0.0122	0.0000	443.5586
Total	**0.3141**	**2.0390**	**2.1691**	**9.3600e-003**	**0.6037**	**0.0137**	**0.6173**	**0.1629**	**0.0129**	**0.1758**	**0.0000**	**865.4923**	**865.4923**	**0.0384**	**0.0000**	**866.4528**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4087	303.4087	0.0740	0.0000	305.2592
Total	**0.2777**	**2.5134**	**2.2072**	**3.5300e-003**		**0.1463**	**0.1463**		**0.1376**	**0.1376**	**0.0000**	**303.4087**	**303.4087**	**0.0740**	**0.0000**	**305.2592**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0637	1.8591	0.3957	4.4500e-003	0.1039	0.0103	0.1141	0.0300	9.8100e-003	0.0398	0.0000	422.2391	422.2391	0.0262	0.0000	422.8942
Worker	0.2504	0.1798	1.7734	4.9100e-003	0.4998	3.4000e-003	0.5032	0.1329	3.1300e-003	0.1360	0.0000	443.2532	443.2532	0.0122	0.0000	443.5586
Total	**0.3141**	**2.0390**	**2.1691**	**9.3600e-003**	**0.6037**	**0.0137**	**0.6173**	**0.1629**	**0.0129**	**0.1758**	**0.0000**	**865.4923**	**865.4923**	**0.0384**	**0.0000**	**866.4528**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2867	302.2867	0.0729	0.0000	304.1099
Total	**0.2481**	**2.2749**	**2.1631**	**3.5100e-003**		**0.1251**	**0.1251**		**0.1176**	**0.1176**	**0.0000**	**302.2867**	**302.2867**	**0.0729**	**0.0000**	**304.1099**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0520	1.6774	0.3458	4.3900e-003	0.1035	4.7700e-003	0.1082	0.0299	4.5600e-003	0.0345	0.0000	416.7157	416.7157	0.0246	0.0000	417.3314
Worker	0.2303	0.1595	1.6090	4.7000e-003	0.4979	3.2700e-003	0.5012	0.1324	3.0100e-003	0.1354	0.0000	424.9110	424.9110	0.0109	0.0000	425.1823
Total	**0.2823**	**1.8369**	**1.9548**	**9.0900e-003**	**0.6014**	**8.0400e-003**	**0.6094**	**0.1623**	**7.5700e-003**	**0.1699**	**0.0000**	**841.6267**	**841.6267**	**0.0355**	**0.0000**	**842.5138**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2863	302.2863	0.0729	0.0000	304.1095
Total	**0.2481**	**2.2749**	**2.1631**	**3.5100e-003**		**0.1251**	**0.1251**		**0.1176**	**0.1176**	**0.0000**	**302.2863**	**302.2863**	**0.0729**	**0.0000**	**304.1095**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0520	1.6774	0.3458	4.3900e-003	0.1035	4.7700e-003	0.1082	0.0299	4.5600e-003	0.0345	0.0000	416.7157	416.7157	0.0246	0.0000	417.3314
Worker	0.2303	0.1595	1.6090	4.7000e-003	0.4979	3.2700e-003	0.5012	0.1324	3.0100e-003	0.1354	0.0000	424.9110	424.9110	0.0109	0.0000	425.1823
Total	**0.2823**	**1.8369**	**1.9548**	**9.0900e-003**	**0.6014**	**8.0400e-003**	**0.6094**	**0.1623**	**7.5700e-003**	**0.1699**	**0.0000**	**841.6267**	**841.6267**	**0.0355**	**0.0000**	**842.5138**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2428	301.2428	0.0722	0.0000	303.0471
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2428**	**301.2428**	**0.0722**	**0.0000**	**303.0471**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0480	1.5831	0.3178	4.3300e-003	0.1031	4.1100e-003	0.1072	0.0298	3.9300e-003	0.0337	0.0000	411.2407	411.2407	0.0233	0.0000	411.8229
Worker	0.2129	0.1421	1.4621	4.5200e-003	0.4960	3.1500e-003	0.4992	0.1319	2.9000e-003	0.1348	0.0000	408.2348	408.2348	9.6700e-003	0.0000	408.4766
Total	**0.2609**	**1.7252**	**1.7799**	**8.8500e-003**	**0.5991**	**7.2600e-003**	**0.6063**	**0.1617**	**6.8300e-003**	**0.1685**	**0.0000**	**819.4755**	**819.4755**	**0.0330**	**0.0000**	**820.2994**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2425	301.2425	0.0722	0.0000	303.0467
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2425**	**301.2425**	**0.0722**	**0.0000**	**303.0467**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0480	1.5831	0.3178	4.3300e-003	0.1031	4.1100e-003	0.1072	0.0298	3.9300e-003	0.0337	0.0000	411.2407	411.2407	0.0233	0.0000	411.8229
Worker	0.2129	0.1421	1.4621	4.5200e-003	0.4960	3.1500e-003	0.4992	0.1319	2.9000e-003	0.1348	0.0000	408.2348	408.2348	9.6700e-003	0.0000	408.4766
Total	**0.2609**	**1.7252**	**1.7799**	**8.8500e-003**	**0.5991**	**7.2600e-003**	**0.6063**	**0.1617**	**6.8300e-003**	**0.1685**	**0.0000**	**819.4755**	**819.4755**	**0.0330**	**0.0000**	**820.2994**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1596	1.4601	1.6488	2.7300e-003		0.0710	0.0710		0.0668	0.0668	0.0000	235.2818	235.2818	0.0560	0.0000	236.6811
Total	**0.1596**	**1.4601**	**1.6488**	**2.7300e-003**		**0.0710**	**0.0710**		**0.0668**	**0.0668**	**0.0000**	**235.2818**	**235.2818**	**0.0560**	**0.0000**	**236.6811**

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0266	0.9590	0.2090	3.3000e-003	0.0805	9.9000e-004	0.0815	0.0233	9.4000e-004	0.0242	0.0000	313.3340	313.3340	0.0127	0.0000	313.6517
Worker	0.1545	0.0994	1.0404	3.3900e-003	0.3873	2.3900e-003	0.3897	0.1030	2.2000e-003	0.1052	0.0000	306.8751	306.8751	6.7400e-003	0.0000	307.0436
Total	**0.1811**	**1.0584**	**1.2494**	**6.6900e-003**	**0.4677**	**3.3800e-003**	**0.4711**	**0.1262**	**3.1400e-003**	**0.1294**	**0.0000**	**620.2091**	**620.2091**	**0.0195**	**0.0000**	**620.6954**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1596	1.4601	1.6488	2.7300e-003		0.0710	0.0710		0.0668	0.0668	0.0000	235.2815	235.2815	0.0560	0.0000	236.6808
Total	**0.1596**	**1.4601**	**1.6488**	**2.7300e-003**		**0.0710**	**0.0710**		**0.0668**	**0.0668**	**0.0000**	**235.2815**	**235.2815**	**0.0560**	**0.0000**	**236.6808**

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0266	0.9590	0.2090	3.3000e-003	0.0805	9.9000e-004	0.0815	0.0233	9.4000e-004	0.0242	0.0000	313.3340	313.3340	0.0127	0.0000	313.6517
Worker	0.1545	0.0994	1.0404	3.3900e-003	0.3873	2.3900e-003	0.3897	0.1030	2.2000e-003	0.1052	0.0000	306.8751	306.8751	6.7400e-003	0.0000	307.0436
Total	**0.1811**	**1.0584**	**1.2494**	**6.6900e-003**	**0.4677**	**3.3800e-003**	**0.4711**	**0.1262**	**3.1400e-003**	**0.1294**	**0.0000**	**620.2091**	**620.2091**	**0.0195**	**0.0000**	**620.6954**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0444	0.4649	0.4473	7.0000e-004		0.0252	0.0252		0.0231	0.0231	0.0000	62.4493	62.4493	0.0198	0.0000	62.9433
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0444**	**0.4649**	**0.4473**	**7.0000e-004**		**0.0252**	**0.0252**		**0.0231**	**0.0231**	**0.0000**	**62.4493**	**62.4493**	**0.0198**	**0.0000**	**62.9433**

3.5 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-003	1.4900e-003	0.0145	4.0000e-005	3.6400e-003	3.0000e-005	3.6700e-003	9.7000e-004	2.0000e-005	9.9000e-004	0.0000	3.3337	3.3337	1.0000e-004	0.0000	3.3363
Total	**2.0000e-003**	**1.4900e-003**	**0.0145**	**4.0000e-005**	**3.6400e-003**	**3.0000e-005**	**3.6700e-003**	**9.7000e-004**	**2.0000e-005**	**9.9000e-004**	**0.0000**	**3.3337**	**3.3337**	**1.0000e-004**	**0.0000**	**3.3363**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0444	0.4649	0.4473	7.0000e-004		0.0252	0.0252		0.0231	0.0231	0.0000	62.4492	62.4492	0.0198	0.0000	62.9432
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0444**	**0.4649**	**0.4473**	**7.0000e-004**		**0.0252**	**0.0252**		**0.0231**	**0.0231**	**0.0000**	**62.4492**	**62.4492**	**0.0198**	**0.0000**	**62.9432**

3.5 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-003	1.4900e-003	0.0145	4.0000e-005	3.6400e-003	3.0000e-005	3.6700e-003	9.7000e-004	2.0000e-005	9.9000e-004	0.0000	3.3337	3.3337	1.0000e-004	0.0000	3.3363
Total	**2.0000e-003**	**1.4900e-003**	**0.0145**	**4.0000e-005**	**3.6400e-003**	**3.0000e-005**	**3.6700e-003**	**9.7000e-004**	**2.0000e-005**	**9.9000e-004**	**0.0000**	**3.3337**	**3.3337**	**1.0000e-004**	**0.0000**	**3.3363**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0129	0.1336	0.1392	2.2000e-004		7.1500e-003	7.1500e-003		6.5800e-003	6.5800e-003	0.0000	19.0268	19.0268	6.1500e-003	0.0000	19.1807
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0129**	**0.1336**	**0.1392**	**2.2000e-004**		**7.1500e-003**	**7.1500e-003**		**6.5800e-003**	**6.5800e-003**	**0.0000**	**19.0268**	**19.0268**	**6.1500e-003**	**0.0000**	**19.1807**

3.5 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-004	4.1000e-004	4.0300e-003	1.0000e-005	1.1400e-003	1.0000e-005	1.1400e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	1.0066	1.0066	3.0000e-005	0.0000	1.0073
Total	**5.7000e-004**	**4.1000e-004**	**4.0300e-003**	**1.0000e-005**	**1.1400e-003**	**1.0000e-005**	**1.1400e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**1.0066**	**1.0066**	**3.0000e-005**	**0.0000**	**1.0073**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0129	0.1336	0.1392	2.2000e-004		7.1500e-003	7.1500e-003		6.5800e-003	6.5800e-003	0.0000	19.0268	19.0268	6.1500e-003	0.0000	19.1806
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0129**	**0.1336**	**0.1392**	**2.2000e-004**		**7.1500e-003**	**7.1500e-003**		**6.5800e-003**	**6.5800e-003**	**0.0000**	**19.0268**	**19.0268**	**6.1500e-003**	**0.0000**	**19.1806**

3.5 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-004	4.1000e-004	4.0300e-003	1.0000e-005	1.1400e-003	1.0000e-005	1.1400e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	1.0066	1.0066	3.0000e-005	0.0000	1.0073
Total	**5.7000e-004**	**4.1000e-004**	**4.0300e-003**	**1.0000e-005**	**1.1400e-003**	**1.0000e-005**	**1.1400e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**1.0066**	**1.0066**	**3.0000e-005**	**0.0000**	**1.0073**

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2572					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.2600e-003	0.0156	0.0157	3.0000e-005		1.0900e-003	1.0900e-003		1.0900e-003	1.0900e-003	0.0000	2.1703	2.1703	1.8000e-004	0.0000	2.1749
Total	**0.2595**	**0.0156**	**0.0157**	**3.0000e-005**		**1.0900e-003**	**1.0900e-003**		**1.0900e-003**	**1.0900e-003**	**0.0000**	**2.1703**	**2.1703**	**1.8000e-004**	**0.0000**	**2.1749**

3.6 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5700e-003	2.6500e-003	0.0259	7.0000e-005	6.5000e-003	5.0000e-005	6.5500e-003	1.7300e-003	4.0000e-005	1.7700e-003	0.0000	5.9461	5.9461	1.8000e-004	0.0000	5.9506
Total	**3.5700e-003**	**2.6500e-003**	**0.0259**	**7.0000e-005**	**6.5000e-003**	**5.0000e-005**	**6.5500e-003**	**1.7300e-003**	**4.0000e-005**	**1.7700e-003**	**0.0000**	**5.9461**	**5.9461**	**1.8000e-004**	**0.0000**	**5.9506**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2572					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.2600e-003	0.0156	0.0157	3.0000e-005		1.0900e-003	1.0900e-003		1.0900e-003	1.0900e-003	0.0000	2.1703	2.1703	1.8000e-004	0.0000	2.1749
Total	**0.2595**	**0.0156**	**0.0157**	**3.0000e-005**		**1.0900e-003**	**1.0900e-003**		**1.0900e-003**	**1.0900e-003**	**0.0000**	**2.1703**	**2.1703**	**1.8000e-004**	**0.0000**	**2.1749**

3.6 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5700e-003	2.6500e-003	0.0259	7.0000e-005	6.5000e-003	5.0000e-005	6.5500e-003	1.7300e-003	4.0000e-005	1.7700e-003	0.0000	5.9461	5.9461	1.8000e-004	0.0000	5.9506
Total	**3.5700e-003**	**2.6500e-003**	**0.0259**	**7.0000e-005**	**6.5000e-003**	**5.0000e-005**	**6.5500e-003**	**1.7300e-003**	**4.0000e-005**	**1.7700e-003**	**0.0000**	**5.9461**	**5.9461**	**1.8000e-004**	**0.0000**	**5.9506**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.9637					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.2206	0.2399	3.9000e-004		0.0145	0.0145		0.0145	0.0145	0.0000	33.4476	33.4476	2.5900e-003	0.0000	33.5124
Total	**3.9954**	**0.2206**	**0.2399**	**3.9000e-004**		**0.0145**	**0.0145**		**0.0145**	**0.0145**	**0.0000**	**33.4476**	**33.4476**	**2.5900e-003**	**0.0000**	**33.5124**

3.6 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0502	0.0360	0.3554	9.8000e-004	0.1002	6.8000e-004	0.1009	0.0266	6.3000e-004	0.0273	0.0000	88.8357	88.8357	2.4500e-003	0.0000	88.8969
Total	**0.0502**	**0.0360**	**0.3554**	**9.8000e-004**	**0.1002**	**6.8000e-004**	**0.1009**	**0.0266**	**6.3000e-004**	**0.0273**	**0.0000**	**88.8357**	**88.8357**	**2.4500e-003**	**0.0000**	**88.8969**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.9637					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.2206	0.2399	3.9000e-004		0.0145	0.0145		0.0145	0.0145	0.0000	33.4476	33.4476	2.5900e-003	0.0000	33.5123
Total	**3.9954**	**0.2206**	**0.2399**	**3.9000e-004**		**0.0145**	**0.0145**		**0.0145**	**0.0145**	**0.0000**	**33.4476**	**33.4476**	**2.5900e-003**	**0.0000**	**33.5123**

3.6 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0502	0.0360	0.3554	9.8000e-004	0.1002	6.8000e-004	0.1009	0.0266	6.3000e-004	0.0273	0.0000	88.8357	88.8357	2.4500e-003	0.0000	88.8969
Total	**0.0502**	**0.0360**	**0.3554**	**9.8000e-004**	**0.1002**	**6.8000e-004**	**0.1009**	**0.0266**	**6.3000e-004**	**0.0273**	**0.0000**	**88.8357**	**88.8357**	**2.4500e-003**	**0.0000**	**88.8969**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.9486					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0286	0.1993	0.2372	3.9000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	33.3200	33.3200	2.2900e-003	0.0000	33.3771
Total	**3.9771**	**0.1993**	**0.2372**	**3.9000e-004**		**0.0123**	**0.0123**		**0.0123**	**0.0123**	**0.0000**	**33.3200**	**33.3200**	**2.2900e-003**	**0.0000**	**33.3771**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0462	0.0320	0.3225	9.4000e-004	0.0998	6.5000e-004	0.1004	0.0265	6.0000e-004	0.0271	0.0000	85.1596	85.1596	2.1700e-003	0.0000	85.2140
Total	**0.0462**	**0.0320**	**0.3225**	**9.4000e-004**	**0.0998**	**6.5000e-004**	**0.1004**	**0.0265**	**6.0000e-004**	**0.0271**	**0.0000**	**85.1596**	**85.1596**	**2.1700e-003**	**0.0000**	**85.2140**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.9486					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0286	0.1993	0.2372	3.9000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	33.3199	33.3199	2.2900e-003	0.0000	33.3771
Total	**3.9771**	**0.1993**	**0.2372**	**3.9000e-004**		**0.0123**	**0.0123**		**0.0123**	**0.0123**	**0.0000**	**33.3199**	**33.3199**	**2.2900e-003**	**0.0000**	**33.3771**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0462	0.0320	0.3225	9.4000e-004	0.0998	6.5000e-004	0.1004	0.0265	6.0000e-004	0.0271	0.0000	85.1596	85.1596	2.1700e-003	0.0000	85.2140
Total	**0.0462**	**0.0320**	**0.3225**	**9.4000e-004**	**0.0998**	**6.5000e-004**	**0.1004**	**0.0265**	**6.0000e-004**	**0.0271**	**0.0000**	**85.1596**	**85.1596**	**2.1700e-003**	**0.0000**	**85.2140**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.9334					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.1831	0.2358	3.9000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	33.1923	33.1923	2.1600e-003	0.0000	33.2463
Total	**3.9600**	**0.1831**	**0.2358**	**3.9000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**33.1923**	**33.1923**	**2.1600e-003**	**0.0000**	**33.2463**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0427	0.0285	0.2930	9.0000e-004	0.0994	6.3000e-004	0.1000	0.0264	5.8000e-004	0.0270	0.0000	81.8174	81.8174	1.9400e-003	0.0000	81.8659
Total	**0.0427**	**0.0285**	**0.2930**	**9.0000e-004**	**0.0994**	**6.3000e-004**	**0.1000**	**0.0264**	**5.8000e-004**	**0.0270**	**0.0000**	**81.8174**	**81.8174**	**1.9400e-003**	**0.0000**	**81.8659**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.9334					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.1831	0.2358	3.9000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	33.1923	33.1923	2.1600e-003	0.0000	33.2463
Total	**3.9600**	**0.1831**	**0.2358**	**3.9000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**33.1923**	**33.1923**	**2.1600e-003**	**0.0000**	**33.2463**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0427	0.0285	0.2930	9.0000e-004	0.0994	6.3000e-004	0.1000	0.0264	5.8000e-004	0.0270	0.0000	81.8174	81.8174	1.9400e-003	0.0000	81.8659
Total	**0.0427**	**0.0285**	**0.2930**	**9.0000e-004**	**0.0994**	**6.3000e-004**	**0.1000**	**0.0264**	**5.8000e-004**	**0.0270**	**0.0000**	**81.8174**	**81.8174**	**1.9400e-003**	**0.0000**	**81.8659**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.9334					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.1694	0.2355	3.9000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419
Total	**3.9583**	**0.1694**	**0.2355**	**3.9000e-004**		**9.2100e-003**	**9.2100e-003**		**9.2100e-003**	**9.2100e-003**	**0.0000**	**33.1923**	**33.1923**	**1.9900e-003**	**0.0000**	**33.2419**

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0397	0.0255	0.2671	8.7000e-004	0.0994	6.1000e-004	0.1000	0.0264	5.7000e-004	0.0270	0.0000	78.7725	78.7725	1.7300e-003	0.0000	78.8158
Total	**0.0397**	**0.0255**	**0.2671**	**8.7000e-004**	**0.0994**	**6.1000e-004**	**0.1000**	**0.0264**	**5.7000e-004**	**0.0270**	**0.0000**	**78.7725**	**78.7725**	**1.7300e-003**	**0.0000**	**78.8158**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.9334					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.1694	0.2354	3.9000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419
Total	**3.9583**	**0.1694**	**0.2354**	**3.9000e-004**		**9.2100e-003**	**9.2100e-003**		**9.2100e-003**	**9.2100e-003**	**0.0000**	**33.1923**	**33.1923**	**1.9900e-003**	**0.0000**	**33.2419**

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0397	0.0255	0.2671	8.7000e-004	0.0994	6.1000e-004	0.1000	0.0264	5.7000e-004	0.0270	0.0000	78.7725	78.7725	1.7300e-003	0.0000	78.8158
Total	**0.0397**	**0.0255**	**0.2671**	**8.7000e-004**	**0.0994**	**6.1000e-004**	**0.1000**	**0.0264**	**5.7000e-004**	**0.0270**	**0.0000**	**78.7725**	**78.7725**	**1.7300e-003**	**0.0000**	**78.8158**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1210					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2000e-004	4.8800e-003	7.2400e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	1.0213	1.0213	6.0000e-005	0.0000	1.0227
Total	**0.1218**	**4.8800e-003**	**7.2400e-003**	**1.0000e-005**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**1.0213**	**1.0213**	**6.0000e-005**	**0.0000**	**1.0227**

3.6 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1400e-003	7.1000e-004	7.5700e-003	3.0000e-005	3.0600e-003	2.0000e-005	3.0800e-003	8.1000e-004	2.0000e-005	8.3000e-004	0.0000	2.3196	2.3196	5.0000e-005	0.0000	2.3208
Total	**1.1400e-003**	**7.1000e-004**	**7.5700e-003**	**3.0000e-005**	**3.0600e-003**	**2.0000e-005**	**3.0800e-003**	**8.1000e-004**	**2.0000e-005**	**8.3000e-004**	**0.0000**	**2.3196**	**2.3196**	**5.0000e-005**	**0.0000**	**2.3208**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1210					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2000e-004	4.8800e-003	7.2400e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	1.0213	1.0213	6.0000e-005	0.0000	1.0227
Total	**0.1218**	**4.8800e-003**	**7.2400e-003**	**1.0000e-005**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**1.0213**	**1.0213**	**6.0000e-005**	**0.0000**	**1.0227**

3.6 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1400e-003	7.1000e-004	7.5700e-003	3.0000e-005	3.0600e-003	2.0000e-005	3.0800e-003	8.1000e-004	2.0000e-005	8.3000e-004	0.0000	2.3196	2.3196	5.0000e-005	0.0000	2.3208
Total	**1.1400e-003**	**7.1000e-004**	**7.5700e-003**	**3.0000e-005**	**3.0600e-003**	**2.0000e-005**	**3.0800e-003**	**8.1000e-004**	**2.0000e-005**	**8.3000e-004**	**0.0000**	**2.3196**	**2.3196**	**5.0000e-005**	**0.0000**	**2.3208**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.2443	22.1477	35.3492	0.1251	8.8991	0.1328	9.0319	2.3864	0.1252	2.5117	0.0000	11,518.1457	11,518.1457	0.5990	0.0000	11,533.1214
Unmitigated	3.3692	23.3722	38.1546	0.1371	9.8605	0.1455	10.0060	2.6443	0.1373	2.7815	0.0000	12,622.5151	12,622.5151	0.6314	0.0000	12,638.2992

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,450.92	1,444.14	1324.36	4,149,301	3,744,744
Elementary School	967.50	0.00	0.00	1,523,770	1,375,203
Single Family Housing	6,947.15	7,977.55	6939.10	20,554,794	18,550,701
Total	9,365.57	9,421.69	8,263.46	26,227,865	23,670,648

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	45.60	19.00	35.40	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
Single Family Housing	10.80	7.30	7.50	45.60	19.00	35.40	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931
Elementary School	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931
Single Family Housing	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,074.2470	1,074.2470	0.1074	0.0222	1,083.5559
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,074.2470	1,074.2470	0.1074	0.0222	1,083.5559
NaturalGas Mitigated	0.1301	1.1134	0.4859	7.1000e-003		0.0899	0.0899		0.0899	0.0899	0.0000	1,287.4034	1,287.4034	0.0247	0.0236	1,295.0538
NaturalGas Unmitigated	0.1301	1.1134	0.4859	7.1000e-003		0.0899	0.0899		0.0899	0.0899	0.0000	1,287.4034	1,287.4034	0.0247	0.0236	1,295.0538

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	2.73431e+006	0.0147	0.1260	0.0536	8.0000e-004		0.0102	0.0102		0.0102	0.0102	0.0000	145.9132	145.9132	2.8000e-003	2.6800e-003	146.7803
Elementary School	593793	3.2000e-003	0.0291	0.0245	1.7000e-004		2.2100e-003	2.2100e-003		2.2100e-003	2.2100e-003	0.0000	31.6871	31.6871	6.1000e-004	5.8000e-004	31.8754
Single Family Housing	2.07969e+007	0.1121	0.9583	0.4078	6.1200e-003		0.0775	0.0775		0.0775	0.0775	0.0000	1,109.8031	1,109.8031	0.0213	0.0204	1,116.3982
Total		**0.1301**	**1.1134**	**0.4858**	**7.0900e-003**		**0.0899**	**0.0899**		**0.0899**	**0.0899**	**0.0000**	**1,287.4034**	**1,287.4034**	**0.0247**	**0.0236**	**1,295.0538**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	2.73431e+006	0.0147	0.1260	0.0536	8.0000e-004		0.0102	0.0102		0.0102	0.0102	0.0000	145.9132	145.9132	2.8000e-003	2.6800e-003	146.7803
Elementary School	593793	3.2000e-003	0.0291	0.0245	1.7000e-004		2.2100e-003	2.2100e-003		2.2100e-003	2.2100e-003	0.0000	31.6871	31.6871	6.1000e-004	5.8000e-004	31.8754
Single Family Housing	2.07969e+007	0.1121	0.9583	0.4078	6.1200e-003		0.0775	0.0775		0.0775	0.0775	0.0000	1,109.8031	1,109.8031	0.0213	0.0204	1,116.3982
Total		**0.1301**	**1.1134**	**0.4858**	**7.0900e-003**		**0.0899**	**0.0899**		**0.0899**	**0.0899**	**0.0000**	**1,287.4034**	**1,287.4034**	**0.0247**	**0.0236**	**1,295.0538**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.0157e+006	133.6068	0.0134	2.7600e-003	134.7645
Elementary School	353642	46.5187	4.6500e-003	9.6000e-004	46.9219
Single Family Housing	6.79724e+006	894.1215	0.0894	0.0185	901.8695
Total		**1,074.2470**	**0.1074**	**0.0222**	**1,083.5559**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.0157e+006	133.6068	0.0134	2.7600e-003	134.7645
Elementary School	353642	46.5187	4.6500e-003	9.6000e-004	46.9219
Single Family Housing	6.79724e+006	894.1215	0.0894	0.0185	901.8695
Total		**1,074.2470**	**0.1074**	**0.0222**	**1,083.5559**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.6820	0.4746	7.8518	2.8700e-003		0.0734	0.0734		0.0734	0.0734	0.0000	459.1550	459.1550	0.0208	8.1900e-003	462.1149
Unmitigated	12.2464	1.0026	40.2218	0.1085		5.3540	5.3540		5.3540	5.3540	707.0722	459.1550	1,166.2273	3.3262	8.1900e-003	1,251.8226

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.6157					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.7866					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.6095	0.9137	32.5341	0.1081		5.3118	5.3118		5.3118	5.3118	707.0722	446.6368	1,153.7091	3.3140	8.1900e-003	1,238.9987
Landscaping	0.2345	0.0889	7.6877	4.0000e-004		0.0423	0.0423		0.0423	0.0423	0.0000	12.5182	12.5182	0.0122	0.0000	12.8239
Total	**12.2464**	**1.0026**	**40.2218**	**0.1085**		**5.3540**	**5.3540**		**5.3540**	**5.3540**	**707.0722**	**459.1550**	**1,166.2273**	**3.3262**	**8.1900e-003**	**1,251.8226**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.6157					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.7866					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0451	0.3857	0.1641	2.4600e-003		0.0312	0.0312		0.0312	0.0312	0.0000	446.6368	446.6368	8.5600e-003	8.1900e-003	449.2910
Landscaping	0.2345	0.0889	7.6877	4.0000e-004		0.0423	0.0423		0.0423	0.0423	0.0000	12.5182	12.5182	0.0122	0.0000	12.8239
Total	**8.6820**	**0.4746**	**7.8518**	**2.8600e-003**		**0.0734**	**0.0734**		**0.0734**	**0.0734**	**0.0000**	**459.1550**	**459.1550**	**0.0208**	**8.1900e-003**	**462.1149**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	77.1247	1.8045	0.0437	135.2583
Unmitigated	92.6443	2.2552	0.0546	165.2786

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	14.7248 / 9.28303	19.4261	0.4813	0.0116	34.9253
Elementary School	1.81818 / 4.67532	4.0235	0.0596	1.4700e-003	5.9513
Single Family Housing	52.449 / 33.0657	69.1947	1.7143	0.0414	124.4020
Total		**92.6443**	**2.2552**	**0.0545**	**165.2786**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	11.7798 / 8.71677	16.1349	0.3851	9.3200e-003	28.5395
Elementary School	1.45454 / 4.39013	3.5180	0.0477	1.1800e-003	5.0629
Single Family Housing	41.9592 / 31.0487	57.4718	1.3717	0.0332	101.6560
Total		**77.1247**	**1.8045**	**0.0437**	**135.2583**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	235.4533	13.9149	0.0000	583.3255
Unmitigated	235.4533	13.9149	0.0000	583.3255

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	103.96	21.1029	1.2472	0.0000	52.2816
Elementary School	136.88	27.7854	1.6421	0.0000	68.8372
Single Family Housing	919.08	186.5649	11.0257	0.0000	462.2067
Total		**235.4533**	**13.9149**	**0.0000**	**583.3255**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	103.96	21.1029	1.2472	0.0000	52.2816
Elementary School	136.88	27.7854	1.6421	0.0000	68.8372
Single Family Housing	919.08	186.5649	11.0257	0.0000	462.2067
Total		**235.4533**	**13.9149**	**0.0000**	**583.3255**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	-484.1760	0.0000	0.0000	-484.1760

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Cropland	200.15 / 0	-1,240.9300	0.0000	0.0000	-1,240.9300
Grassland	10.18 / 10.18	0.0000	0.0000	0.0000	0.0000
Wetlands	10.18 / 10.18	0.0000	0.0000	0.0000	0.0000
Total		**-1,240.9300**	**0.0000**	**0.0000**	**-1,240.9300**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Mixed Hardwood	1031	756.7540	0.0000	0.0000	756.7540
Total		**756.7540**	**0.0000**	**0.0000**	**756.7540**

Stockton Tra Vigne - With Bridge Alternative - 2020

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	750.00	Student	14.70	62,702.53	0
Apartments Low Rise	340.00	Dwelling Unit	11.70	340,000.00	1078
Single Family Housing	1,156.00	Dwelling Unit	375.32	2,080,800.00	3665
Regional Shopping Center	101.50	1000sqft	10.50	101,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensty factor as provided by PG&E:
https://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf

Land Use - Proposed GP land uses (10.5 C, 11.7 HDR, 260.69 ac LDR (minus 14.7 ac school). Pop 3.17/unit. Existing 15.57 I and 20.36 acres of OS not included. Assumes 90 units built on the school site--worst case scenario.

Construction Phase - Based on project size and type.

Grading - Acres of Grading (Grading Phase): 283.68

Vehicle Trips - Trip gen adjusted per traffic engineer. Trip lengths remain defaults.

Woodstoves -

Energy Use -

Land Use Change -

Sequestration - Assumes approx 1 front yard tree per SFR unit. Commercial site plan shows approx 150 trees within landscaping.

Construction Off-road Equipment Mitigation - Tier 2 Engines

Mobile Land Use Mitigation -

Energy Mitigation -

Water Mitigation -

Trips and VMT -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	5
tblConstructionPhase	NumDays	300.00	20.00
tblConstructionPhase	NumDays	775.00	180.00
tblConstructionPhase	NumDays	7,750.00	1,047.00
tblConstructionPhase	NumDays	550.00	80.00
tblConstructionPhase	NumDays	550.00	1,075.00
tblConstructionPhase	PhaseEndDate	2/24/2020	1/28/2019
tblConstructionPhase	PhaseEndDate	2/13/2023	10/7/2019
tblConstructionPhase	PhaseEndDate	10/28/2052	10/11/2023

tblConstructionPhase	PhaseEndDate	12/7/2054	1/27/2020
tblConstructionPhase	PhaseEndDate	1/15/2057	1/19/2024
tblConstructionPhase	PhaseStartDate	2/25/2020	1/29/2019
tblConstructionPhase	PhaseStartDate	2/14/2023	10/8/2019
tblConstructionPhase	PhaseStartDate	10/29/2052	10/8/2019
tblConstructionPhase	PhaseStartDate	12/8/2054	12/8/2019
tblGrading	AcresOfGrading	450.00	283.68
tblGrading	AcresOfGrading	0.00	283.68
tblLandUse	LotAcreage	1.44	14.70
tblLandUse	LotAcreage	21.25	11.70
tblLandUse	LotAcreage	2.33	10.50
tblLandUse	Population	3,667.00	3,665.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblSequestration	NumberOfNewTrees	0.00	1,200.00
tblVehicleTrips	ST_TR	7.16	6.39
tblVehicleTrips	SU_TR	6.07	5.86
tblVehicleTrips	WD_TR	6.59	6.42
tblVehicleTrips	WD_TR	42.70	67.56
tblVehicleTrips	WD_TR	9.52	8.63
tblWoodstoves	NumberCatalytic	375.32	245.99
tblWoodstoves	NumberNoncatalytic	375.32	245.99

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	1.1066	7.3115	5.1898	0.0112	1.2653	0.3111	1.5763	0.4949	0.2873	0.7821	0.0000	1,012.9585	1,012.9585	0.2229	0.0000	1,018.5308
2020	6.6898	6.0895	6.4057	0.0199	1.0645	0.1901	1.2547	0.2868	0.1797	0.4664	0.0000	1,814.4007	1,814.4007	0.1457	0.0000	1,818.0424
2021	6.5667	5.3757	5.8413	0.0192	1.0593	0.1507	1.2100	0.2854	0.1424	0.4278	0.0000	1,751.4251	1,751.4251	0.1332	0.0000	1,754.7544
2022	6.4787	4.9365	5.4955	0.0188	1.0553	0.1279	1.1832	0.2843	0.1209	0.4052	0.0000	1,711.6420	1,711.6420	0.1281	0.0000	1,714.8435
2023	6.2893	3.3116	4.1743	0.0147	0.8566	0.0863	0.9429	0.2307	0.0817	0.3123	0.0000	1,336.1854	1,336.1854	0.0905	0.0000	1,338.4476
2024	0.3375	0.0111	0.0349	9.0000e-005	8.6000e-003	5.1000e-004	9.1100e-003	2.2900e-003	5.0000e-004	2.7900e-003	0.0000	8.4388	8.4388	2.4000e-004	0.0000	8.4449
Maximum	**6.6898**	**7.3115**	**6.4057**	**0.0199**	**1.2653**	**0.3111**	**1.5763**	**0.4949**	**0.2873**	**0.7821**	**0.0000**	**1,814.4007**	**1,814.4007**	**0.2229**	**0.0000**	**1,818.0424**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	1.1066	7.3115	5.1898	0.0112	0.6409	0.3111	0.9520	0.2327	0.2873	0.5200	0.0000	1,012.9578	1,012.9578	0.2229	0.0000	1,018.5300
2020	6.6898	6.0895	6.4057	0.0199	1.0645	0.1901	1.2547	0.2868	0.1797	0.4664	0.0000	1,814.4003	1,814.4003	0.1457	0.0000	1,818.0420
2021	6.5667	5.3757	5.8413	0.0192	1.0593	0.1507	1.2100	0.2854	0.1424	0.4278	0.0000	1,751.4247	1,751.4247	0.1332	0.0000	1,754.7540
2022	6.4787	4.9365	5.4955	0.0188	1.0553	0.1279	1.1832	0.2843	0.1209	0.4052	0.0000	1,711.6416	1,711.6416	0.1281	0.0000	1,714.8431
2023	6.2893	3.3116	4.1743	0.0147	0.8566	0.0863	0.9429	0.2307	0.0817	0.3123	0.0000	1,336.1851	1,336.1851	0.0905	0.0000	1,338.4472
2024	0.3375	0.0111	0.0349	9.0000e-005	8.6000e-003	5.1000e-004	9.1100e-003	2.2900e-003	5.0000e-004	2.7900e-003	0.0000	8.4388	8.4388	2.4000e-004	0.0000	8.4449
Maximum	**6.6898**	**7.3115**	**6.4057**	**0.0199**	**1.0645**	**0.3111**	**1.2547**	**0.2868**	**0.2873**	**0.5200**	**0.0000**	**1,814.4003**	**1,814.4003**	**0.2229**	**0.0000**	**1,818.0420**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**11.76**	**0.00**	**10.11**	**16.55**	**0.00**	**10.94**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2019**	**3-31-2019**	1.8164	1.8164
2	**4-1-2019**	**6-30-2019**	1.9310	1.9310
3	**7-1-2019**	**9-30-2019**	1.9522	1.9522
4	**10-1-2019**	**12-31-2019**	2.7285	2.7285
5	**1-1-2020**	**3-31-2020**	3.3001	3.3001

6	**4-1-2020**	**6-30-2020**	3.1274	3.1274
7	**7-1-2020**	**9-30-2020**	3.1618	3.1618
8	**10-1-2020**	**12-31-2020**	3.1849	3.1849
9	**1-1-2021**	**3-31-2021**	2.9556	2.9556
10	**4-1-2021**	**6-30-2021**	2.9701	2.9701
11	**7-1-2021**	**9-30-2021**	3.0027	3.0027
12	**10-1-2021**	**12-31-2021**	3.0213	3.0213
13	**1-1-2022**	**3-31-2022**	2.8350	2.8350
14	**4-1-2022**	**6-30-2022**	2.8506	2.8506
15	**7-1-2022**	**9-30-2022**	2.8819	2.8819
16	**10-1-2022**	**12-31-2022**	2.8980	2.8980
17	**1-1-2023**	**3-31-2023**	2.6311	2.6311
18	**4-1-2023**	**6-30-2023**	2.6481	2.6481
19	**7-1-2023**	**9-30-2023**	2.6772	2.6772
20	**10-1-2023**	**12-31-2023**	1.6728	1.6728
21	**1-1-2024**	**3-31-2024**	0.3159	0.3159
		Highest	3.3001	3.3001

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	18.1392	1.4666	59.0834	0.1598		7.8867	7.8867		7.8867	7.8867	1,041.7693	666.2382	1,708.0074	4.9002	0.0119	1,834.0535
Energy	0.1928	1.6530	0.7396	0.0105		0.1332	0.1332		0.1332	0.1332	0.0000	3,597.1944	3,597.1944	0.2055	0.0699	3,623.1697
Mobile	6.6433	45.1964	71.7813	0.2532	17.9643	0.2687	18.2331	4.8174	0.2535	5.0709	0.0000	23,309.7373	23,309.7373	1.2228	0.0000	23,340.3062
Waste						0.0000	0.0000		0.0000	0.0000	348.9942	0.0000	348.9942	20.6250	0.0000	864.6185
Water						0.0000	0.0000		0.0000	0.0000	33.8849	108.5871	142.4720	3.4912	0.0844	254.9095
Total	**24.9754**	**48.3159**	**131.6043**	**0.4234**	**17.9643**	**8.2887**	**26.2530**	**4.8174**	**8.2734**	**13.0908**	**1,424.6484**	**27,681.7570**	**29,106.4054**	**30.4446**	**0.1662**	**29,917.0573**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	12.8876	0.6886	11.3909	4.1600e-003		0.1066	0.1066		0.1066	0.1066	0.0000	666.2382	666.2382	0.0302	0.0119	670.5327
Energy	0.1928	1.6530	0.7396	0.0105		0.1332	0.1332		0.1332	0.1332	0.0000	3,597.1944	3,597.1944	0.2055	0.0699	3,623.1697
Mobile	6.4158	42.9654	66.6703	0.2313	16.2128	0.2455	16.4583	4.3477	0.2315	4.5793	0.0000	21,297.7435	21,297.7435	1.1638	0.0000	21,326.8397
Waste						0.0000	0.0000		0.0000	0.0000	348.9942	0.0000	348.9942	20.6250	0.0000	864.6185
Water						0.0000	0.0000		0.0000	0.0000	27.1079	91.3962	118.5041	2.7934	0.0676	208.4934
Total	**19.4962**	**45.3070**	**78.8008**	**0.2460**	**16.2128**	**0.4853**	**16.6981**	**4.3477**	**0.4713**	**4.8190**	**376.1022**	**25,652.5723**	**26,028.6744**	**24.8178**	**0.1494**	**26,693.6539**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**21.94**	**6.23**	**40.12**	**41.92**	**9.75**	**94.15**	**36.40**	**9.75**	**94.30**	**63.19**	**73.60**	**7.33**	**10.57**	**18.48**	**10.10**	**10.77**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	880.8000
Vegetation Land Change	-1,753.9180
Total	**-873.1180**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2019	1/28/2019	5	20	
2	Grading	Grading	1/29/2019	10/7/2019	5	180	
3	Building Construction	Building Construction	10/8/2019	10/11/2023	5	1047	
4	Paving	Paving	10/8/2019	1/27/2020	5	80	
5	Architectural Coating	Architectural Coating	12/8/2019	1/19/2024	5	1075	

Acres of Grading (Site Preparation Phase): 283.68

Acres of Grading (Grading Phase): 283.68

Acres of Paving: 0

Residential Indoor: 4,902,120; Residential Outdoor: 1,634,040; Non-Residential Indoor: 246,304; Non-Residential Outdoor: 82,101; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	720.00	187.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	144.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3311	0.0000	0.3311	0.1156	0.0000	0.1156	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0434	0.4557	0.2206	3.8000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	34.1687	34.1687	0.0108	0.0000	34.4390
Total	**0.0434**	**0.4557**	**0.2206**	**3.8000e-004**	**0.3311**	**0.0239**	**0.3550**	**0.1156**	**0.0220**	**0.1375**	**0.0000**	**34.1687**	**34.1687**	**0.0108**	**0.0000**	**34.4390**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-004	5.9000e-004	5.7100e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3116	1.3116	4.0000e-005	0.0000	1.3126
Total	**7.9000e-004**	**5.9000e-004**	**5.7100e-003**	**1.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.3116**	**1.3116**	**4.0000e-005**	**0.0000**	**1.3126**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1291	0.0000	0.1291	0.0451	0.0000	0.0451	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0434	0.4557	0.2206	3.8000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	34.1687	34.1687	0.0108	0.0000	34.4389
Total	**0.0434**	**0.4557**	**0.2206**	**3.8000e-004**	**0.1291**	**0.0239**	**0.1530**	**0.0451**	**0.0220**	**0.0671**	**0.0000**	**34.1687**	**34.1687**	**0.0108**	**0.0000**	**34.4389**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-004	5.9000e-004	5.7100e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3116	1.3116	4.0000e-005	0.0000	1.3126
Total	**7.9000e-004**	**5.9000e-004**	**5.7100e-003**	**1.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.3116**	**1.3116**	**4.0000e-005**	**0.0000**	**1.3126**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6924	0.0000	0.6924	0.3142	0.0000	0.3142	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4265	4.9068	3.0039	5.5800e-003		0.2144	0.2144		0.1973	0.1973	0.0000	501.3119	501.3119	0.1586	0.0000	505.2771
Total	**0.4265**	**4.9068**	**3.0039**	**5.5800e-003**	**0.6924**	**0.2144**	**0.9069**	**0.3142**	**0.1973**	**0.5114**	**0.0000**	**501.3119**	**501.3119**	**0.1586**	**0.0000**	**505.2771**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8700e-003	5.8500e-003	0.0571	1.5000e-004	0.0143	1.0000e-004	0.0144	3.8100e-003	9.0000e-005	3.9000e-003	0.0000	13.1164	13.1164	4.0000e-004	0.0000	13.1264
Total	**7.8700e-003**	**5.8500e-003**	**0.0571**	**1.5000e-004**	**0.0143**	**1.0000e-004**	**0.0144**	**3.8100e-003**	**9.0000e-005**	**3.9000e-003**	**0.0000**	**13.1164**	**13.1164**	**4.0000e-004**	**0.0000**	**13.1264**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2700	0.0000	0.2700	0.1225	0.0000	0.1225	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4265	4.9068	3.0039	5.5800e-003		0.2144	0.2144		0.1973	0.1973	0.0000	501.3113	501.3113	0.1586	0.0000	505.2765
Total	**0.4265**	**4.9068**	**3.0039**	**5.5800e-003**	**0.2700**	**0.2144**	**0.4845**	**0.1225**	**0.1973**	**0.3198**	**0.0000**	**501.3113**	**501.3113**	**0.1586**	**0.0000**	**505.2765**

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8700e-003	5.8500e-003	0.0571	1.5000e-004	0.0143	1.0000e-004	0.0144	3.8100e-003	9.0000e-005	3.9000e-003	0.0000	13.1164	13.1164	4.0000e-004	0.0000	13.1264
Total	**7.8700e-003**	**5.8500e-003**	**0.0571**	**1.5000e-004**	**0.0143**	**1.0000e-004**	**0.0144**	**3.8100e-003**	**9.0000e-005**	**3.9000e-003**	**0.0000**	**13.1164**	**13.1164**	**4.0000e-004**	**0.0000**	**13.1264**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0720	0.6429	0.5235	8.2000e-004		0.0393	0.0393		0.0370	0.0370	0.0000	71.7068	71.7068	0.0175	0.0000	72.1435
Total	**0.0720**	**0.6429**	**0.5235**	**8.2000e-004**		**0.0393**	**0.0393**		**0.0370**	**0.0370**	**0.0000**	**71.7068**	**71.7068**	**0.0175**	**0.0000**	**72.1435**

3.4 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0286	0.7422	0.1658	1.6300e-003	0.0377	5.6900e-003	0.0434	0.0109	5.4400e-003	0.0163	0.0000	154.4513	154.4513	0.0103	0.0000	154.7098
Worker	0.0961	0.0714	0.6968	1.7700e-003	0.1749	1.2300e-003	0.1762	0.0465	1.1300e-003	0.0476	0.0000	160.0195	160.0195	4.9000e-003	0.0000	160.1421
Total	**0.1247**	**0.8136**	**0.8626**	**3.4000e-003**	**0.2126**	**6.9200e-003**	**0.2195**	**0.0574**	**6.5700e-003**	**0.0640**	**0.0000**	**314.4708**	**314.4708**	**0.0152**	**0.0000**	**314.8518**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0720	0.6429	0.5235	8.2000e-004		0.0393	0.0393		0.0370	0.0370	0.0000	71.7067	71.7067	0.0175	0.0000	72.1434
Total	**0.0720**	**0.6429**	**0.5235**	**8.2000e-004**		**0.0393**	**0.0393**		**0.0370**	**0.0370**	**0.0000**	**71.7067**	**71.7067**	**0.0175**	**0.0000**	**72.1434**

3.4 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0286	0.7422	0.1658	1.6300e-003	0.0377	5.6900e-003	0.0434	0.0109	5.4400e-003	0.0163	0.0000	154.4513	154.4513	0.0103	0.0000	154.7098
Worker	0.0961	0.0714	0.6968	1.7700e-003	0.1749	1.2300e-003	0.1762	0.0465	1.1300e-003	0.0476	0.0000	160.0195	160.0195	4.9000e-003	0.0000	160.1421
Total	**0.1247**	**0.8136**	**0.8626**	**3.4000e-003**	**0.2126**	**6.9200e-003**	**0.2195**	**0.0574**	**6.5700e-003**	**0.0640**	**0.0000**	**314.4708**	**314.4708**	**0.0152**	**0.0000**	**314.8518**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4091	303.4091	0.0740	0.0000	305.2596
Total	**0.2777**	**2.5134**	**2.2072**	**3.5300e-003**		**0.1463**	**0.1463**		**0.1376**	**0.1376**	**0.0000**	**303.4091**	**303.4091**	**0.0740**	**0.0000**	**305.2596**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0993	2.8971	0.6166	6.9300e-003	0.1618	0.0160	0.1778	0.0468	0.0153	0.0621	0.0000	657.9893	657.9893	0.0408	0.0000	659.0101
Worker	0.3764	0.2703	2.6657	7.3700e-003	0.7513	5.1100e-003	0.7564	0.1997	4.7100e-003	0.2045	0.0000	666.2678	666.2678	0.0184	0.0000	666.7270
Total	**0.4757**	**3.1675**	**3.2823**	**0.0143**	**0.9131**	**0.0211**	**0.9342**	**0.2465**	**0.0200**	**0.2665**	**0.0000**	**1,324.2570**	**1,324.2570**	**0.0592**	**0.0000**	**1,325.7371**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4087	303.4087	0.0740	0.0000	305.2592
Total	**0.2777**	**2.5134**	**2.2072**	**3.5300e-003**		**0.1463**	**0.1463**		**0.1376**	**0.1376**	**0.0000**	**303.4087**	**303.4087**	**0.0740**	**0.0000**	**305.2592**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0993	2.8971	0.6166	6.9300e-003	0.1618	0.0160	0.1778	0.0468	0.0153	0.0621	0.0000	657.9893	657.9893	0.0408	0.0000	659.0101
Worker	0.3764	0.2703	2.6657	7.3700e-003	0.7513	5.1100e-003	0.7564	0.1997	4.7100e-003	0.2045	0.0000	666.2678	666.2678	0.0184	0.0000	666.7270
Total	**0.4757**	**3.1675**	**3.2823**	**0.0143**	**0.9131**	**0.0211**	**0.9342**	**0.2465**	**0.0200**	**0.2665**	**0.0000**	**1,324.2570**	**1,324.2570**	**0.0592**	**0.0000**	**1,325.7371**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2867	302.2867	0.0729	0.0000	304.1099
Total	**0.2481**	**2.2749**	**2.1631**	**3.5100e-003**		**0.1251**	**0.1251**		**0.1176**	**0.1176**	**0.0000**	**302.2867**	**302.2867**	**0.0729**	**0.0000**	**304.1099**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0810	2.6139	0.5389	6.8400e-003	0.1612	7.4300e-003	0.1687	0.0466	7.1100e-003	0.0537	0.0000	649.3819	649.3819	0.0384	0.0000	650.3415
Worker	0.3462	0.2397	2.4185	7.0700e-003	0.7484	4.9100e-003	0.7533	0.1990	4.5200e-003	0.2035	0.0000	638.6972	638.6972	0.0163	0.0000	639.1050
Total	**0.4272**	**2.8536**	**2.9574**	**0.0139**	**0.9097**	**0.0123**	**0.9220**	**0.2456**	**0.0116**	**0.2572**	**0.0000**	**1,288.0791**	**1,288.0791**	**0.0547**	**0.0000**	**1,289.4464**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2863	302.2863	0.0729	0.0000	304.1095
Total	**0.2481**	**2.2749**	**2.1631**	**3.5100e-003**		**0.1251**	**0.1251**		**0.1176**	**0.1176**	**0.0000**	**302.2863**	**302.2863**	**0.0729**	**0.0000**	**304.1095**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0810	2.6139	0.5389	6.8400e-003	0.1612	7.4300e-003	0.1687	0.0466	7.1100e-003	0.0537	0.0000	649.3819	649.3819	0.0384	0.0000	650.3415
Worker	0.3462	0.2397	2.4185	7.0700e-003	0.7484	4.9100e-003	0.7533	0.1990	4.5200e-003	0.2035	0.0000	638.6972	638.6972	0.0163	0.0000	639.1050
Total	**0.4272**	**2.8536**	**2.9574**	**0.0139**	**0.9097**	**0.0123**	**0.9220**	**0.2456**	**0.0116**	**0.2572**	**0.0000**	**1,288.0791**	**1,288.0791**	**0.0547**	**0.0000**	**1,289.4464**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2428	301.2428	0.0722	0.0000	303.0471
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2428**	**301.2428**	**0.0722**	**0.0000**	**303.0471**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0748	2.4670	0.4952	6.7500e-003	0.1606	6.4100e-003	0.1670	0.0464	6.1300e-003	0.0526	0.0000	640.8501	640.8501	0.0363	0.0000	641.7573
Worker	0.3200	0.2136	2.1977	6.7900e-003	0.7456	4.7400e-003	0.7503	0.1982	4.3700e-003	0.2026	0.0000	613.6306	613.6306	0.0145	0.0000	613.9940
Total	**0.3948**	**2.6806**	**2.6929**	**0.0135**	**0.9062**	**0.0112**	**0.9173**	**0.2446**	**0.0105**	**0.2551**	**0.0000**	**1,254.4808**	**1,254.4808**	**0.0508**	**0.0000**	**1,255.7513**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2425	301.2425	0.0722	0.0000	303.0467
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2425**	**301.2425**	**0.0722**	**0.0000**	**303.0467**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0748	2.4670	0.4952	6.7500e-003	0.1606	6.4100e-003	0.1670	0.0464	6.1300e-003	0.0526	0.0000	640.8501	640.8501	0.0363	0.0000	641.7573
Worker	0.3200	0.2136	2.1977	6.7900e-003	0.7456	4.7400e-003	0.7503	0.1982	4.3700e-003	0.2026	0.0000	613.6306	613.6306	0.0145	0.0000	613.9940
Total	**0.3948**	**2.6806**	**2.6929**	**0.0135**	**0.9062**	**0.0112**	**0.9173**	**0.2446**	**0.0105**	**0.2551**	**0.0000**	**1,254.4808**	**1,254.4808**	**0.0508**	**0.0000**	**1,255.7513**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1596	1.4601	1.6488	2.7300e-003		0.0710	0.0710		0.0668	0.0668	0.0000	235.2818	235.2818	0.0560	0.0000	236.6811
Total	**0.1596**	**1.4601**	**1.6488**	**2.7300e-003**		**0.0710**	**0.0710**		**0.0668**	**0.0668**	**0.0000**	**235.2818**	**235.2818**	**0.0560**	**0.0000**	**236.6811**

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0415	1.4945	0.3257	5.1400e-003	0.1254	1.5400e-003	0.1269	0.0362	1.4700e-003	0.0377	0.0000	488.2789	488.2789	0.0198	0.0000	488.7740
Worker	0.2323	0.1494	1.5638	5.1000e-003	0.5821	3.5900e-003	0.5857	0.1548	3.3100e-003	0.1581	0.0000	461.2736	461.2736	0.0101	0.0000	461.5269
Total	**0.2738**	**1.6439**	**1.8895**	**0.0102**	**0.7075**	**5.1300e-003**	**0.7126**	**0.1910**	**4.7800e-003**	**0.1958**	**0.0000**	**949.5525**	**949.5525**	**0.0299**	**0.0000**	**950.3009**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1596	1.4601	1.6488	2.7300e-003		0.0710	0.0710		0.0668	0.0668	0.0000	235.2815	235.2815	0.0560	0.0000	236.6808
Total	**0.1596**	**1.4601**	**1.6488**	**2.7300e-003**		**0.0710**	**0.0710**		**0.0668**	**0.0668**	**0.0000**	**235.2815**	**235.2815**	**0.0560**	**0.0000**	**236.6808**

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0415	1.4945	0.3257	5.1400e-003	0.1254	1.5400e-003	0.1269	0.0362	1.4700e-003	0.0377	0.0000	488.2789	488.2789	0.0198	0.0000	488.7740
Worker	0.2323	0.1494	1.5638	5.1000e-003	0.5821	3.5900e-003	0.5857	0.1548	3.3100e-003	0.1581	0.0000	461.2736	461.2736	0.0101	0.0000	461.5269
Total	**0.2738**	**1.6439**	**1.8895**	**0.0102**	**0.7075**	**5.1300e-003**	**0.7126**	**0.1910**	**4.7800e-003**	**0.1958**	**0.0000**	**949.5525**	**949.5525**	**0.0299**	**0.0000**	**950.3009**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0444	0.4649	0.4473	7.0000e-004		0.0252	0.0252		0.0231	0.0231	0.0000	62.4493	62.4493	0.0198	0.0000	62.9433
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0444**	**0.4649**	**0.4473**	**7.0000e-004**		**0.0252**	**0.0252**		**0.0231**	**0.0231**	**0.0000**	**62.4493**	**62.4493**	**0.0198**	**0.0000**	**62.9433**

3.5 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-003	1.4900e-003	0.0145	4.0000e-005	3.6400e-003	3.0000e-005	3.6700e-003	9.7000e-004	2.0000e-005	9.9000e-004	0.0000	3.3337	3.3337	1.0000e-004	0.0000	3.3363
Total	**2.0000e-003**	**1.4900e-003**	**0.0145**	**4.0000e-005**	**3.6400e-003**	**3.0000e-005**	**3.6700e-003**	**9.7000e-004**	**2.0000e-005**	**9.9000e-004**	**0.0000**	**3.3337**	**3.3337**	**1.0000e-004**	**0.0000**	**3.3363**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0444	0.4649	0.4473	7.0000e-004		0.0252	0.0252		0.0231	0.0231	0.0000	62.4492	62.4492	0.0198	0.0000	62.9432
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0444**	**0.4649**	**0.4473**	**7.0000e-004**		**0.0252**	**0.0252**		**0.0231**	**0.0231**	**0.0000**	**62.4492**	**62.4492**	**0.0198**	**0.0000**	**62.9432**

3.5 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-003	1.4900e-003	0.0145	4.0000e-005	3.6400e-003	3.0000e-005	3.6700e-003	9.7000e-004	2.0000e-005	9.9000e-004	0.0000	3.3337	3.3337	1.0000e-004	0.0000	3.3363
Total	**2.0000e-003**	**1.4900e-003**	**0.0145**	**4.0000e-005**	**3.6400e-003**	**3.0000e-005**	**3.6700e-003**	**9.7000e-004**	**2.0000e-005**	**9.9000e-004**	**0.0000**	**3.3337**	**3.3337**	**1.0000e-004**	**0.0000**	**3.3363**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0129	0.1336	0.1392	2.2000e-004		7.1500e-003	7.1500e-003		6.5800e-003	6.5800e-003	0.0000	19.0268	19.0268	6.1500e-003	0.0000	19.1807
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0129**	**0.1336**	**0.1392**	**2.2000e-004**		**7.1500e-003**	**7.1500e-003**		**6.5800e-003**	**6.5800e-003**	**0.0000**	**19.0268**	**19.0268**	**6.1500e-003**	**0.0000**	**19.1807**

3.5 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-004	4.1000e-004	4.0300e-003	1.0000e-005	1.1400e-003	1.0000e-005	1.1400e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	1.0066	1.0066	3.0000e-005	0.0000	1.0073
Total	**5.7000e-004**	**4.1000e-004**	**4.0300e-003**	**1.0000e-005**	**1.1400e-003**	**1.0000e-005**	**1.1400e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**1.0066**	**1.0066**	**3.0000e-005**	**0.0000**	**1.0073**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0129	0.1336	0.1392	2.2000e-004		7.1500e-003	7.1500e-003		6.5800e-003	6.5800e-003	0.0000	19.0268	19.0268	6.1500e-003	0.0000	19.1806
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0129**	**0.1336**	**0.1392**	**2.2000e-004**		**7.1500e-003**	**7.1500e-003**		**6.5800e-003**	**6.5800e-003**	**0.0000**	**19.0268**	**19.0268**	**6.1500e-003**	**0.0000**	**19.1806**

3.5 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-004	4.1000e-004	4.0300e-003	1.0000e-005	1.1400e-003	1.0000e-005	1.1400e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	1.0066	1.0066	3.0000e-005	0.0000	1.0073
Total	**5.7000e-004**	**4.1000e-004**	**4.0300e-003**	**1.0000e-005**	**1.1400e-003**	**1.0000e-005**	**1.1400e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**1.0066**	**1.0066**	**3.0000e-005**	**0.0000**	**1.0073**

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3774					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.2600e-003	0.0156	0.0157	3.0000e-005		1.0900e-003	1.0900e-003		1.0900e-003	1.0900e-003	0.0000	2.1703	2.1703	1.8000e-004	0.0000	2.1749
Total	**0.3796**	**0.0156**	**0.0157**	**3.0000e-005**		**1.0900e-003**	**1.0900e-003**		**1.0900e-003**	**1.0900e-003**	**0.0000**	**2.1703**	**2.1703**	**1.8000e-004**	**0.0000**	**2.1749**

3.6 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3500e-003	3.9800e-003	0.0388	1.0000e-004	9.7500e-003	7.0000e-005	9.8200e-003	2.5900e-003	6.0000e-005	2.6600e-003	0.0000	8.9191	8.9191	2.7000e-004	0.0000	8.9260
Total	**5.3500e-003**	**3.9800e-003**	**0.0388**	**1.0000e-004**	**9.7500e-003**	**7.0000e-005**	**9.8200e-003**	**2.5900e-003**	**6.0000e-005**	**2.6600e-003**	**0.0000**	**8.9191**	**8.9191**	**2.7000e-004**	**0.0000**	**8.9260**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3774					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.2600e-003	0.0156	0.0157	3.0000e-005		1.0900e-003	1.0900e-003		1.0900e-003	1.0900e-003	0.0000	2.1703	2.1703	1.8000e-004	0.0000	2.1749
Total	**0.3796**	**0.0156**	**0.0157**	**3.0000e-005**		**1.0900e-003**	**1.0900e-003**		**1.0900e-003**	**1.0900e-003**	**0.0000**	**2.1703**	**2.1703**	**1.8000e-004**	**0.0000**	**2.1749**

3.6 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3500e-003	3.9800e-003	0.0388	1.0000e-004	9.7500e-003	7.0000e-005	9.8200e-003	2.5900e-003	6.0000e-005	2.6600e-003	0.0000	8.9191	8.9191	2.7000e-004	0.0000	8.9260
Total	**5.3500e-003**	**3.9800e-003**	**0.0388**	**1.0000e-004**	**9.7500e-003**	**7.0000e-005**	**9.8200e-003**	**2.5900e-003**	**6.0000e-005**	**2.6600e-003**	**0.0000**	**8.9191**	**8.9191**	**2.7000e-004**	**0.0000**	**8.9260**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.8159					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.2206	0.2399	3.9000e-004		0.0145	0.0145		0.0145	0.0145	0.0000	33.4476	33.4476	2.5900e-003	0.0000	33.5124
Total	**5.8476**	**0.2206**	**0.2399**	**3.9000e-004**		**0.0145**	**0.0145**		**0.0145**	**0.0145**	**0.0000**	**33.4476**	**33.4476**	**2.5900e-003**	**0.0000**	**33.5124**

3.6 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0753	0.0541	0.5331	1.4700e-003	0.1503	1.0200e-003	0.1513	0.0400	9.4000e-004	0.0409	0.0000	133.2536	133.2536	3.6700e-003	0.0000	133.3454
Total	**0.0753**	**0.0541**	**0.5331**	**1.4700e-003**	**0.1503**	**1.0200e-003**	**0.1513**	**0.0400**	**9.4000e-004**	**0.0409**	**0.0000**	**133.2536**	**133.2536**	**3.6700e-003**	**0.0000**	**133.3454**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.8159					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.2206	0.2399	3.9000e-004		0.0145	0.0145		0.0145	0.0145	0.0000	33.4476	33.4476	2.5900e-003	0.0000	33.5123
Total	**5.8476**	**0.2206**	**0.2399**	**3.9000e-004**		**0.0145**	**0.0145**		**0.0145**	**0.0145**	**0.0000**	**33.4476**	**33.4476**	**2.5900e-003**	**0.0000**	**33.5123**

3.6 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0753	0.0541	0.5331	1.4700e-003	0.1503	1.0200e-003	0.1513	0.0400	9.4000e-004	0.0409	0.0000	133.2536	133.2536	3.6700e-003	0.0000	133.3454
Total	**0.0753**	**0.0541**	**0.5331**	**1.4700e-003**	**0.1503**	**1.0200e-003**	**0.1513**	**0.0400**	**9.4000e-004**	**0.0409**	**0.0000**	**133.2536**	**133.2536**	**3.6700e-003**	**0.0000**	**133.3454**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.7937					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0286	0.1993	0.2372	3.9000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	33.3200	33.3200	2.2900e-003	0.0000	33.3771
Total	**5.8223**	**0.1993**	**0.2372**	**3.9000e-004**		**0.0123**	**0.0123**		**0.0123**	**0.0123**	**0.0000**	**33.3200**	**33.3200**	**2.2900e-003**	**0.0000**	**33.3771**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0692	0.0479	0.4837	1.4100e-003	0.1497	9.8000e-004	0.1507	0.0398	9.0000e-004	0.0407	0.0000	127.7394	127.7394	3.2600e-003	0.0000	127.8210
Total	**0.0692**	**0.0479**	**0.4837**	**1.4100e-003**	**0.1497**	**9.8000e-004**	**0.1507**	**0.0398**	**9.0000e-004**	**0.0407**	**0.0000**	**127.7394**	**127.7394**	**3.2600e-003**	**0.0000**	**127.8210**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.7937					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0286	0.1993	0.2372	3.9000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	33.3199	33.3199	2.2900e-003	0.0000	33.3771
Total	**5.8223**	**0.1993**	**0.2372**	**3.9000e-004**		**0.0123**	**0.0123**		**0.0123**	**0.0123**	**0.0000**	**33.3199**	**33.3199**	**2.2900e-003**	**0.0000**	**33.3771**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0692	0.0479	0.4837	1.4100e-003	0.1497	9.8000e-004	0.1507	0.0398	9.0000e-004	0.0407	0.0000	127.7394	127.7394	3.2600e-003	0.0000	127.8210
Total	**0.0692**	**0.0479**	**0.4837**	**1.4100e-003**	**0.1497**	**9.8000e-004**	**0.1507**	**0.0398**	**9.0000e-004**	**0.0407**	**0.0000**	**127.7394**	**127.7394**	**3.2600e-003**	**0.0000**	**127.8210**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.7715					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.1831	0.2358	3.9000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	33.1923	33.1923	2.1600e-003	0.0000	33.2463
Total	**5.7981**	**0.1831**	**0.2358**	**3.9000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**33.1923**	**33.1923**	**2.1600e-003**	**0.0000**	**33.2463**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0640	0.0427	0.4395	1.3600e-003	0.1491	9.5000e-004	0.1501	0.0396	8.7000e-004	0.0405	0.0000	122.7261	122.7261	2.9100e-003	0.0000	122.7988
Total	**0.0640**	**0.0427**	**0.4395**	**1.3600e-003**	**0.1491**	**9.5000e-004**	**0.1501**	**0.0396**	**8.7000e-004**	**0.0405**	**0.0000**	**122.7261**	**122.7261**	**2.9100e-003**	**0.0000**	**122.7988**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.7715					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.1831	0.2358	3.9000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	33.1923	33.1923	2.1600e-003	0.0000	33.2463
Total	**5.7981**	**0.1831**	**0.2358**	**3.9000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**33.1923**	**33.1923**	**2.1600e-003**	**0.0000**	**33.2463**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0640	0.0427	0.4395	1.3600e-003	0.1491	9.5000e-004	0.1501	0.0396	8.7000e-004	0.0405	0.0000	122.7261	122.7261	2.9100e-003	0.0000	122.7988
Total	**0.0640**	**0.0427**	**0.4395**	**1.3600e-003**	**0.1491**	**9.5000e-004**	**0.1501**	**0.0396**	**8.7000e-004**	**0.0405**	**0.0000**	**122.7261**	**122.7261**	**2.9100e-003**	**0.0000**	**122.7988**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.7715					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.1694	0.2355	3.9000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419
Total	**5.7964**	**0.1694**	**0.2355**	**3.9000e-004**		**9.2100e-003**	**9.2100e-003**		**9.2100e-003**	**9.2100e-003**	**0.0000**	**33.1923**	**33.1923**	**1.9900e-003**	**0.0000**	**33.2419**

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0595	0.0383	0.4006	1.3100e-003	0.1491	9.2000e-004	0.1500	0.0396	8.5000e-004	0.0405	0.0000	118.1588	118.1588	2.6000e-003	0.0000	118.2237
Total	**0.0595**	**0.0383**	**0.4006**	**1.3100e-003**	**0.1491**	**9.2000e-004**	**0.1500**	**0.0396**	**8.5000e-004**	**0.0405**	**0.0000**	**118.1588**	**118.1588**	**2.6000e-003**	**0.0000**	**118.2237**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.7715					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.1694	0.2354	3.9000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419
Total	**5.7964**	**0.1694**	**0.2354**	**3.9000e-004**		**9.2100e-003**	**9.2100e-003**		**9.2100e-003**	**9.2100e-003**	**0.0000**	**33.1923**	**33.1923**	**1.9900e-003**	**0.0000**	**33.2419**

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0595	0.0383	0.4006	1.3100e-003	0.1491	9.2000e-004	0.1500	0.0396	8.5000e-004	0.0405	0.0000	118.1588	118.1588	2.6000e-003	0.0000	118.2237
Total	**0.0595**	**0.0383**	**0.4006**	**1.3100e-003**	**0.1491**	**9.2000e-004**	**0.1500**	**0.0396**	**8.5000e-004**	**0.0405**	**0.0000**	**118.1588**	**118.1588**	**2.6000e-003**	**0.0000**	**118.2237**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3330					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3600e-003	9.1400e-003	0.0136	2.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	1.9149	1.9149	1.1000e-004	0.0000	1.9176
Total	**0.3343**	**9.1400e-003**	**0.0136**	**2.0000e-005**		**4.6000e-004**	**4.6000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**1.9149**	**1.9149**	**1.1000e-004**	**0.0000**	**1.9176**

3.6 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2100e-003	1.9800e-003	0.0213	7.0000e-005	8.6000e-003	5.0000e-005	8.6500e-003	2.2900e-003	5.0000e-005	2.3300e-003	0.0000	6.5239	6.5239	1.3000e-004	0.0000	6.5272
Total	**3.2100e-003**	**1.9800e-003**	**0.0213**	**7.0000e-005**	**8.6000e-003**	**5.0000e-005**	**8.6500e-003**	**2.2900e-003**	**5.0000e-005**	**2.3300e-003**	**0.0000**	**6.5239**	**6.5239**	**1.3000e-004**	**0.0000**	**6.5272**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3330					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3600e-003	9.1400e-003	0.0136	2.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	1.9149	1.9149	1.1000e-004	0.0000	1.9176
Total	**0.3343**	**9.1400e-003**	**0.0136**	**2.0000e-005**		**4.6000e-004**	**4.6000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**1.9149**	**1.9149**	**1.1000e-004**	**0.0000**	**1.9176**

3.6 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2100e-003	1.9800e-003	0.0213	7.0000e-005	8.6000e-003	5.0000e-005	8.6500e-003	2.2900e-003	5.0000e-005	2.3300e-003	0.0000	6.5239	6.5239	1.3000e-004	0.0000	6.5272
Total	**3.2100e-003**	**1.9800e-003**	**0.0213**	**7.0000e-005**	**8.6000e-003**	**5.0000e-005**	**8.6500e-003**	**2.2900e-003**	**5.0000e-005**	**2.3300e-003**	**0.0000**	**6.5239**	**6.5239**	**1.3000e-004**	**0.0000**	**6.5272**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	6.4158	42.9654	66.6703	0.2313	16.2128	0.2455	16.4583	4.3477	0.2315	4.5793	0.0000	21,297.7435	21,297.7435	1.1638	0.0000	21,326.8397
Unmitigated	6.6433	45.1964	71.7813	0.2532	17.9643	0.2687	18.2331	4.8174	0.2535	5.0709	0.0000	23,309.7373	23,309.7373	1.2228	0.0000	23,340.3062

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	2,182.80	2,172.60	1992.40	6,242,311	5,633,686
Elementary School	967.50	0.00	0.00	1,523,770	1,375,203
Regional Shopping Center	6,857.34	5,071.96	2561.86	10,499,920	9,476,178
Single Family Housing	9,976.28	11,455.96	9964.72	29,517,194	26,639,268
Total	19,983.92	18,700.52	14,518.98	47,783,196	43,124,335

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	45.60	19.00	35.40	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	10.80	7.30	7.50	45.60	19.00	35.40	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931
Elementary School	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931
Regional Shopping Center	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931
Single Family Housing	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,688.9148	1,688.9148	0.1689	0.0349	1,703.5501
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,688.9148	1,688.9148	0.1689	0.0349	1,703.5501
NaturalGas Mitigated	0.1928	1.6530	0.7396	0.0105		0.1332	0.1332		0.1332	0.1332	0.0000	1,908.2796	1,908.2796	0.0366	0.0350	1,919.6196
NaturalGas Unmitigated	0.1928	1.6530	0.7396	0.0105		0.1332	0.1332		0.1332	0.1332	0.0000	1,908.2796	1,908.2796	0.0366	0.0350	1,919.6196

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	4.11356e+006	0.0222	0.1896	0.0807	1.2100e-003		0.0153	0.0153		0.0153	0.0153	0.0000	219.5155	219.5155	4.2100e-003	4.0200e-003	220.8200
Elementary School	593793	3.2000e-003	0.0291	0.0245	1.7000e-004		2.2100e-003	2.2100e-003		2.2100e-003	2.2100e-003	0.0000	31.6871	31.6871	6.1000e-004	5.8000e-004	31.8754
Regional Shopping Center	1.18755e+006	6.4000e-003	0.0582	0.0489	3.5000e-004		4.4200e-003	4.4200e-003		4.4200e-003	4.4200e-003	0.0000	63.3722	63.3722	1.2100e-003	1.1600e-003	63.7488
Single Family Housing	2.98649e+007	0.1610	1.3761	0.5856	8.7800e-003		0.1113	0.1113		0.1113	0.1113	0.0000	1,593.7049	1,593.7049	0.0306	0.0292	1,603.1755
Total		**0.1928**	**1.6530**	**0.7396**	**0.0105**		**0.1332**	**0.1332**		**0.1332**	**0.1332**	**0.0000**	**1,908.2796**	**1,908.2796**	**0.0366**	**0.0350**	**1,919.6196**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	4.11356e+006	0.0222	0.1896	0.0807	1.2100e-003		0.0153	0.0153		0.0153	0.0153	0.0000	219.5155	219.5155	4.2100e-003	4.0200e-003	220.8200
Elementary School	593793	3.2000e-003	0.0291	0.0245	1.7000e-004		2.2100e-003	2.2100e-003		2.2100e-003	2.2100e-003	0.0000	31.6871	31.6871	6.1000e-004	5.8000e-004	31.8754
Regional Shopping Center	1.18755e+006	6.4000e-003	0.0582	0.0489	3.5000e-004		4.4200e-003	4.4200e-003		4.4200e-003	4.4200e-003	0.0000	63.3722	63.3722	1.2100e-003	1.1600e-003	63.7488
Single Family Housing	2.98649e+007	0.1610	1.3761	0.5856	8.7800e-003		0.1113	0.1113		0.1113	0.1113	0.0000	1,593.7049	1,593.7049	0.0306	0.0292	1,603.1755
Total		**0.1928**	**1.6530**	**0.7396**	**0.0105**		**0.1332**	**0.1332**		**0.1332**	**0.1332**	**0.0000**	**1,908.2796**	**1,908.2796**	**0.0366**	**0.0350**	**1,919.6196**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.52804e+006	201.0013	0.0201	4.1600e-003	202.7431
Elementary School	353642	46.5187	4.6500e-003	9.6000e-004	46.9219
Regional Shopping Center	1.19669e+006	157.4141	0.0157	3.2600e-003	158.7782
Single Family Housing	9.76101e+006	1,283.9807	0.1284	0.0266	1,295.1070
Total		**1,688.9148**	**0.1689**	**0.0350**	**1,703.5501**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.52804e+006	201.0013	0.0201	4.1600e-003	202.7431
Elementary School	353642	46.5187	4.6500e-003	9.6000e-004	46.9219
Regional Shopping Center	1.19669e+006	157.4141	0.0157	3.2600e-003	158.7782
Single Family Housing	9.76101e+006	1,283.9807	0.1284	0.0266	1,295.1070
Total		**1,688.9148**	**0.1689**	**0.0350**	**1,703.5501**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	12.8876	0.6886	11.3909	4.1600e-003		0.1066	0.1066		0.1066	0.1066	0.0000	666.2382	666.2382	0.0302	0.0119	670.5327
Unmitigated	18.1392	1.4666	59.0834	0.1598		7.8867	7.8867		7.8867	7.8867	1,041.7693	666.2382	1,708.0074	4.9002	0.0119	1,834.0535

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.3863					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	10.0957					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.3171	1.3376	47.9306	0.1592		7.8254	7.8254		7.8254	7.8254	1,041.7693	648.0783	1,689.8475	4.8825	0.0119	1,815.4502
Landscaping	0.3401	0.1290	11.1528	5.9000e-004		0.0613	0.0613		0.0613	0.0613	0.0000	18.1599	18.1599	0.0177	0.0000	18.6032
Total	**18.1392**	**1.4666**	**59.0834**	**0.1598**		**7.8867**	**7.8867**		**7.8867**	**7.8867**	**1,041.7693**	**666.2382**	**1,708.0074**	**4.9002**	**0.0119**	**1,834.0535**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.3863					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	10.0957					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0655	0.5596	0.2381	3.5700e-003		0.0452	0.0452		0.0452	0.0452	0.0000	648.0783	648.0783	0.0124	0.0119	651.9295
Landscaping	0.3401	0.1290	11.1528	5.9000e-004		0.0613	0.0613		0.0613	0.0613	0.0000	18.1599	18.1599	0.0177	0.0000	18.6032
Total	**12.8876**	**0.6886**	**11.3909**	**4.1600e-003**		**0.1066**	**0.1066**		**0.1066**	**0.1066**	**0.0000**	**666.2382**	**666.2382**	**0.0302**	**0.0119**	**670.5327**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	118.5041	2.7934	0.0676	208.4934
Unmitigated	142.4720	3.4912	0.0844	254.9095

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	22.1524 / 13.9656	29.2251	0.7241	0.0175	52.5425
Elementary School	1.81818 / 4.67532	4.0235	0.0596	1.4700e-003	5.9513
Regional Shopping Center	7.51836 / 4.60803	9.8581	0.2457	5.9400e-003	17.7713
Single Family Housing	75.3181 / 47.4831	99.3653	2.4618	0.0595	178.6444
Total		**142.4720**	**3.4912**	**0.0844**	**254.9095**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	17.7219 / 13.1137	24.2738	0.5793	0.0140	42.9355
Elementary School	1.45454 / 4.39013	3.5180	0.0477	1.1800e-003	5.0629
Regional Shopping Center	6.01469 / 4.32694	8.1814	0.1966	4.7600e-003	14.5145
Single Family Housing	60.2544 / 44.5867	82.5309	1.9697	0.0477	145.9805
Total		**118.5041**	**2.7934**	**0.0676**	**208.4934**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	348.9942	20.6250	0.0000	864.6185
Unmitigated	348.9942	20.6250	0.0000	864.6185

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	156.4	31.7478	1.8762	0.0000	78.6538
Elementary School	136.88	27.7854	1.6421	0.0000	68.8372
Regional Shopping Center	106.58	21.6348	1.2786	0.0000	53.5992
Single Family Housing	1319.4	267.8263	15.8281	0.0000	663.5283
Total		**348.9943**	**20.6250**	**0.0000**	**864.6185**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	156.4	31.7478	1.8762	0.0000	78.6538
Elementary School	136.88	27.7854	1.6421	0.0000	68.8372
Regional Shopping Center	106.58	21.6348	1.2786	0.0000	53.5992
Single Family Housing	1319.4	267.8263	15.8281	0.0000	663.5283
Total		**348.9943**	**20.6250**	**0.0000**	**864.6185**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	-873.1180	0.0000	0.0000	-873.1180

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Cropland	282.89 / 0	-1,753.9180	0.0000	0.0000	-1,753.9180
Grassland	10.18 / 10.18	0.0000	0.0000	0.0000	0.0000
Wetlands	10.18 / 10.18	0.0000	0.0000	0.0000	0.0000
Total		**-1,753.9180**	**0.0000**	**0.0000**	**-1,753.9180**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Mixed Hardwood	1200	880.8000	0.0000	0.0000	880.8000
Total		**880.8000**	**0.0000**	**0.0000**	**880.8000**

Off-road Mobile (Construction) Energy Usage

Note: For the sake of simplicity, and as a conservative estimation, it was assumed that all off-road vehicles use diesel fuel as an energy source.
Off-road mobile vehicle on-site gallons of fuel (for the site preparation and grading phases) are calculated below.

Given Factor:	**539.72**	**metric tons**	**CO2**	**(provided in CalEEMod Output File)**
Conversion Factor:	2204.62	pounds	per metric ton	
Intermediate Result:	**1,189,869**	**pounds**	**CO2**	
Conversion Factor:	22.38	pounds	CO2 per 1 gallon of diesel fuel	(Source: U.S. EIA, 2016.
Final Result:	**53,166.62**	**gallons**	**diesel fuel**	Website: http://www.eia.gov/tools/faqs/faq.cfm?id=307&t=11)

On-road Mobile (Operational) Energy Usage

Note: For the sake of simplicity, it was assumed that passenger vehicles, light duty trucks, motorcycles, and mobile homes use gasoline, and all medium-duty trucks, heavy-duty trucks, and buses use diesel fuel.

Unmitigated:

Step 1: **Total Net Daily Trips (conservatively estimated)**

17,820

Res H-W	*Res H-S*	*Res H-O*
Trip Length (miles) (conservatively estimated) (provided by CalEEMod)		
10.8	7.3	7.3
Trip % (conservatively estimated) (provided by CalEEMod)		
48.40%	13.90%	37.70%

Average Trip Length (weighted average)

8.9940

Therefore:

Average Daily VMT:

160,273

Step 2: Given:

Fleet Mix (provided by CalEEMod v2016.3.1)

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
54.7%	3.7%	18.1%	12.9%	2.1%	0.5%	1.6%	5.5%	0.1%	0.2%	0.5%	0.1%	0.1%

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2020

LDA	LDT1	LDT2	MDV	MCY	MH	OBUS
28.92378183	24.050283	21.424564	15.54925437	36.70748289	6.541969217	6.5329227

Diesel MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2020

LHD1	LHD2	MHD	HHD	UBUS	SBUS
17.22844514	15.615312	8.2327192	5.531005519	4.638266257	7.215559485

Therefore:

Weighted Average MPG Factors

Gasoline: **25.3** Diesel: **8.9**

Step 3: **Therefore:**

5,707 daily gallons of gasoline **1,786 daily gallons of diesel**

or

2,082,903 annual gallons of gasoline	**651,792 annual gallons of diesel**

On-road Mobile (Construction) Energy Usage - Site Preparation

Step 1: **Total Daily Worker Trips (provided by CalEEMod)**

18

Worker Trip Length (miles) (provided by CalEEMod)

10.8

Therefore:

Average Worker Daily VMT:

194

Step 2: Given:

Assumed Fleet Mix for Workers (provided by CalEEMod v2016.3.1)

LDA	LDT1	LDT2
0.3333333	0.3333333	0.3333333

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2020

LDA	LDT1	LDT2
28.923782	24.050283	21.424564

Therefore:

Weighted Average Worker MPG Factor

24.8

Step 3: **Therefore:**

7.8 Worker daily gallons of gasoline

Step 4: 20 **# of Days (see CalEEMod)**

Therefore:

Result: 157 Total gallons of gasoline

On-road Mobile (Construction) Energy Usage - Grading

Step 1: **Total Daily Worker Trips (provided by CalEEMod)**

20

Worker Trip Length (miles) (provided by CalEEMod)

10.8

Therefore:

Average Worker Daily VMT:

216

Step 2: Given:

Assumed Fleet Mix for Workers (provided by CalEEMod v2016.3.1)

LDA	LDT1	LDT2
0.3333333	0.3333333	0.3333333

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2020

LDA	LDT1	LDT2
28.923782	24.050283	21.424564

Therefore:

Weighted Average Worker MPG Factor

24.8

Step 3: **Therefore:**

8.7 Worker daily gallons of gasoline

Step 4: 180 **# of Days (see CalEEMod)**

Therefore:

Result: 1,568 Total gallons of gasoline

On-road Mobile (Construction) Energy Usage - Building Construction

Step 1:

Total Daily Worker Trips (provided by CalEEMod)	Total Daily Vendor Trips (provided by CalEEMod)	Total Daily Hauler Trips (provided by CalEEMod)
722	188	0

Worker Trip Length (miles) (provided by CalEEMod)	Vendor Trip Length (miles) (provided by CalEEMod)	Hauling Trip Length (miles) (provided by CalEEMod)
10.8	**7.3**	0

Therefore:

Average Worker Daily VMT:	Average Vendor Daily VMT:	Average Hauling Daily VMT:
7,797.60	**1,372**	**-**

Step 2:

Given:

Assumed Fleet Mix for Workers (provided by CalEEMod v2016.3.1)

LDA	LDT1	LDT2
0.33333333	0.333333	0.333333

Assumed Fleet Mix for Vendors (provided by CalEEMod v2016.3.1)

MHD	HHD
0.5	0.5

And:

MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2020

Gasoline:

LDA	LDT1	LDT2
28.9237818	24.05028	21.42456

Diesel:

MHD	HHD
8.232719159	5.531006

Therefore:

Weighted Average Worker (Gasoline) MPG Factor	Weighted Average Vendor (Diesel) MPG Factor	Weighted Average Hauling MPG Factor
24.8	**6.9**	**0.0**

Step 3:

Therefore:	Therefore:	Therefore:
314 Worker daily gallons of gasoline	**199 Vendor daily gallons of diesel**	**0.0**

Step 4:

1047 # of Days (see CalEEMod)

Therefore:	Therefore:
329,203 Total gallons of gasoline	**208,796 Total gallons of diesel**

On-road Mobile (Construction) Energy Usage - Paving

Step 1: **Total Daily Worker Trips (provided by CalEEMod)**

15

Worker Trip Length (miles) (provided by CalEEMod)

10.8

Therefore:

Average Worker Daily VMT:

162

Step 2: Given:

Assumed Fleet Mix for Workers (provided by CalEEMod v2016.3.1)

LDA	LDT1	LDT2
0.3333333	0.3333333	0.3333333

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2020

LDA	LDT1	LDT2
28.923782	24.050283	21.424564

Therefore:

Weighted Average Worker MPG Factor

24.8

Step 3: **Therefore:**

6.5 Worker daily gallons of gasoline

Step 4: **80 # of Days (see CalEEMod)**

Therefore:

Result: 523 Total gallons of gasoline

On-road Mobile (Construction) Energy Usage - Architectural Coating

Step 1: **Total Daily Worker Trips (provided by CalEEMod)**

144

Worker Trip Length (miles) (provided by CalEEMod)

10.8

Therefore:

Average Worker Daily VMT:

1,555

Step 2: Given:

Assumed Fleet Mix for Workers (provided by CalEEMod v2016.3.1)

LDA	LDT1	LDT2
0.3333333	0.3333333	0.3333333

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2020

LDA	LDT1	LDT2
28.923782	24.050283	21.424564

Therefore:

Weighted Average Worker MPG Factor

24.8

Step 3: **Therefore:**

62.7 Worker daily gallons of gasoline

Step 4: **1068 # of Days (see CalEEMod)**

Therefore:

Result: 66,975 Total gallons of gasoline

EMFAC2014 (v1.0.7) Emissions Inventory
Region Type: County
Region: San Joaquin
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	Fuel	VMT	Fuel_Consumption	MPG (derived)	
San Joaquin	2020	All Other Buses	DSL	5751.965	0.710995164		
San Joaquin	2020	LDA	GAS	12008048	415.1617545	**28.92378183**	
San Joaquin	2020	LDA	DSL	119995	3.171672085		
San Joaquin	2020	LDA	ELEC	326840	0		
San Joaquin	2020	LDT1	GAS	841905	35.0060312	**24.05028292**	
San Joaquin	2020	LDT1	DSL	819.6159	0.030114695		
San Joaquin	2020	LDT1	ELEC	616.5477	0		
San Joaquin	2020	LDT2	GAS	4123922	192.4856814	**21.42456439**	
San Joaquin	2020	LDT2	DSL	6597.887	0.223663218		
San Joaquin	2020	LHD1	GAS	214406.4	22.37952351		
San Joaquin	2020	LHD1	DSL	256824.7	14.90701717	**17.22844514**	
San Joaquin	2020	LHD2	GAS	33851.22	3.873193307		
San Joaquin	2020	LHD2	DSL	80674.99	5.16640246	**15.61531206**	
San Joaquin	2020	MCY	GAS	118406.1	3.225666667	**36.70748289**	
San Joaquin	2020	MDV	GAS	2904743	186.8091557	**15.54925437**	
San Joaquin	2020	MDV	DSL	45072.42	2.044086153		
San Joaquin	2020	MH	GAS	16352.59	2.499644087	**6.541969217**	
San Joaquin	2020	MH	DSL	4854.534	0.510614452	**9.507240412**	
San Joaquin	2020	Motor Coach	DSL	3376.887	0.605436945		
San Joaquin	2020	OBUS	GAS	17844.45	2.731465161	**6.532922723**	
San Joaquin	2020	PTO	DSL	13140.15	2.719179258		
San Joaquin	2020	SBUS	GAS	3747.723	0.321086146	**11.67201686**	
San Joaquin	2020	SBUS	DSL	10327.39	1.431266586	**7.215559485**	
San Joaquin	2020	T6 Ag	DSL	13104.27	1.677494776	**7.811811611**	**8.232719** Note: Average of T6
San Joaquin	2020	T6 CAIRP heavy	DSL	2525.431	0.300750225	**8.397103132**	
San Joaquin	2020	T6 CAIRP small	DSL	7752.449	0.925267119	**8.3786062**	
San Joaquin	2020	T6 instate construc	DSL	14947.66	1.825504519	**8.188237684**	
San Joaquin	2020	T6 instate construc	DSL	61180.55	7.399902583	**8.267750754**	
San Joaquin	2020	T6 instate heavy	DSL	63265.37	7.709244188	**8.206429076**	
San Joaquin	2020	T6 instate small	DSL	154506.8	18.77284446	**8.230335499**	
San Joaquin	2020	T6 OOS heavy	DSL	1446.977	0.172540628	**8.386296446**	
San Joaquin	2020	T6 OOS small	DSL	4441.862	0.530143286	**8.3786062**	
San Joaquin	2020	T6 Public	DSL	7546.595	0.933751629	**8.082014986**	
San Joaquin	2020	T6 utility	DSL	1222.59	0.153094459		
San Joaquin	2020	T6TS	GAS	33392.31	5.243020461		
San Joaquin	2020	T7 Ag	DSL	6397.804	1.204909499	**5.309779287**	**5.531006** Note: Average of T7
San Joaquin	2020	T7 CAIRP	DSL	253558.4	43.18559678	**5.87136466**	
San Joaquin	2020	T7 CAIRP constructi	DSL	10603.76	1.804789446	**5.875344407**	
San Joaquin	2020	T7 NNOOS	DSL	314412.7	50.04559106	**6.282525761**	
San Joaquin	2020	T7 NOOS	DSL	100155.5	17.42092858	**5.749147499**	
San Joaquin	2020	T7 other port	DSL	4821.501	0.810217492	**5.95087232**	
San Joaquin	2020	T7 POAK	DSL	12830.22	2.22731561	**5.760394068**	
San Joaquin	2020	T7 POLA	DSL	23487.11	4.096093787	**5.734027581**	
San Joaquin	2020	T7 Public	DSL	9872.213	1.954586945	**5.050792713**	
San Joaquin	2020	T7 Single	DSL	66176.41	11.14389264	**5.938356696**	
San Joaquin	2020	T7 single constructi	DSL	27430.53	4.57352174	**5.997682401**	
San Joaquin	2020	T7 SWCV	DSL	10236.83	4.602684649	**2.224099328**	
San Joaquin	2020	T7 tractor	DSL	363598.7	59.4686032	**6.11412946**	
San Joaquin	2020	T7 tractor construc	DSL	20451.49	3.441220109	**5.943092129**	
San Joaquin	2020	T7 utility	DSL	412.2143	0.079832728	**5.163474478**	
San Joaquin	2020	T7IS	GAS	4700.19	1.019529164		
San Joaquin	2020	UBUS	GAS	11410.75	2.303287564		
San Joaquin	2020	UBUS	DSL	24030.44	5.180909469	**4.638266257**	

Appendix D

Greenhouse Gas Reduction Plan and Analysis

GREENHOUSE GAS REDUCTION PLAN AND ANALYSIS

FOR

BEAR CREEK EAST SPECIFIC PLAN

Southeast Corner of Eight Mile Road and West Lane
Stockton, CA

Specific Plan File: SPA 2-04
EIR File: EIR 3-04

June 7, 2011

Prepared for:

CITY OF STOCKTON
Community Development Department
Planning Division
345 N. El Dorado Street
Stockton, CA 95202
(209) 937-8266

GREENHOUSE GAS REDUCTION PLAN AND ANALYSIS

FOR

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Stockton, CA 95202
(209) 937-8266

Prepared by:

INSITE ENVIRONMENTAL
6653 Embarcadero Drive, Suite Q
Stockton, CA 95219

EXECUTIVE SUMMARY

This Greenhouse Gas Reduction Plan and Analysis (GGRPA) addresses the potential contributions of the proposed Bear Creek East Specific Plan (BCESP) to climate change. This GGRPA assumes the general consensus of the scientific community, which is that global climate change is occurring, and that greenhouse gas (GHG) emissions generated by human activities are a major source of climate change. Climate change has become an issue of significant concern in California, which has spurred legislation and executive orders to deal with this issue, and environmental impact review of projects must now include climate change impacts. In the City of Stockton, state legislation and a Settlement Agreement with the California Attorney General and the Sierra Club has prompted local actions to reduce GHG emissions, including the current process of preparing a Climate Action Plan and the establishment of an interim GHG reduction target for the City. The latter measure, in particular, applies to the evaluation of potential impacts of development projects on GHG emissions and climate change.

The BCESP provides development and design guidelines for 317.3 acres of unincorporated land located just north of the City of Stockton. The Specific Plan anticipates a mixed-use master planned community consisting of commercial and light industrial uses, offices, parks and open space, and an elementary school intermixed with up to 2,122 residential housing units, including up to 304 high-density multi-family units. The proposed development, along with the associated traffic it would generate, will generate greenhouse gases. As a result of this creation of GHG emissions, the BCESP applicant has taken a pro-active approach by incorporating design features and additional measures in the BCESP that would reduce GHG emissions.

The GGRPA analyzes these design features and measures in the BCESP to determine if they would reduce GHG emissions to a level that would satisfy established significance thresholds. For the BCESP project, the applicable significance threshold is the City of Stockton's interim GHG reduction target of 28.7% from "business as usual" GHG emissions - emissions that would occur without GHG reduction legislation or the implementation of other applicable regulations. The interim reduction target is based on the State's emission reduction objective. Since those State measures would account for most of the planned emission reductions, the City has determined that local actions would be responsible for only a 6.6% GHG emission reduction. Accordingly, a reduction in GHG emissions of 6.6% from business-as-usual emissions is the target for the BCESP.

The GGRPA assesses the GHG reduction value of the design features and reduction measures in the BCESP. This is accomplished using two existing systems for quantifying GHG reduction measures – the San Joaquin Valley Air Pollution Control District (APCD) and the California Air Pollution Control Officers Association (CAPCOA). Each system has identified measures that mitigate GHG emissions and has assigned values to each measure, based on percentage reduction in emissions. The BCESP design features and reduction measures were compared to the measures in both systems, and quantified reduction values were assigned to the BCESP features and measures. Some design features and measures

did not have quantified reduction values assigned to them by either system; however, these measures were also listed as they were considered to have some impact on GHG emission reduction.

The quantified reduction features and measures were summed, and then the totals were weighted based on emission source and the source's contribution to the City of Stockton's GHG emissions. Based on the quantified values and the applied weighting, it was determined that the design features and reduction measures in the BCESP would reduce emissions from business as usual levels by 9.639% under the APCD quantification system, and by 12.581% under the CAPCOA quantification system. Both percentages exceed the 6.6% local share of the City's interim GHG reduction target. Based on these methodologies, the project would have a less than significant impact on climate change from a CEQA perspective, and would be consistent with the GHG reduction objectives of the applicable state and local plans and regulations.

The GGRPA also provides a detailed analysis of the consistency of the BCESP with the applicable GHG reduction plans: the State's Climate Change Scoping Plan, the City's future Climate Action Plan, and the Early Climate Protection Actions of the Settlement Agreement. A complete consistency analysis with the City's Climate Action Plan has not been prepared, however, because the City has not adopted such a plan to date. Consequently, a basis for analysis of consistency with some of the Early Climate Protection Actions is currently not available. Nevertheless, based on available information, the BCESP project is consistent with these plans. Moreover, the BCESP would include provisions requiring consistency with any future GHG reduction plans and regulations that are adopted.

1.0 INTRODUCTION

Climate change has become an issue of significant concern internationally, and in California. The potential impacts of climate change on the state's environment and economy have spurred legislation and executive orders to deal with this issue. Local governments are addressing climate change in their plant operations, transportation planning, land use planning and other governmental processes. The City of Stockton has implemented programs related to climate change impacts, and it is currently preparing a Climate Action Plan (CAP) that will set forth policies and programs to reduce greenhouse gas (GHG) emissions resulting from various activities in the City, including new land development.

The proposed Bear Creek East Specific Plan (BCESP) provides development and design guidelines for 317.3 acres of unincorporated land located just north of the City of Stockton. The Specific Plan anticipates a mixed-use master planned community consisting of commercial and light industrial uses, offices, parks and open space, and an elementary school intermixed with up to 2,112 residential housing units, including up to 304 high-density multi-family units. The proposed development, along with the associated traffic it would generate, will produce greenhouse gases. The BCESP applicants have taken a pro-active approach by incorporating design features in the BCESP that reduce GHG emissions. In addition, the BCESP applicant has authorized the preparation of this Greenhouse Gas Reduction Plan and Analysis (GGRPA) to provide background information and supporting data for GHG reduction features and measures in the BCESP.

The primary purpose of the GHG reduction measures in the BCESP is to reduce the amount of greenhouse gas emissions associated with the project so that it will comply with or exceed the applicable greenhouse gas reduction standards. The purposes of the GGRPA are to estimate the potential greenhouse gas emissions associated with the project; describe the applicable GHG reduction standards and metrics in place or under development; and identify and quantify the GHG reduction measures in the BCESP to determine if it will meet or exceed, or at least provide for project consistency with, the applicable standards.

The GGRPA is organized as follows:

- Chapter 1 introduces the GGRPA, presenting its intended purposes and its organization.

- Chapter 2 provides the scientific and regulatory background for the GGRPA. This chapter includes a discussion of applicable international standards, State legislation and policy, and City of Stockton plans and actions related to GHG reduction.

- Chapter 3 presents the GHG reduction metrics and standards that are relevant to the City's consideration of the BCESP, based on applicable State and local plans and using metrics developed by agencies involved with GHG emissions. Regarding

the project, the relevant metric is the local share of the City of Stockton's interim target of a 28.7% reduction of GHG emissions from "business-as-usual" conditions.

- Chapter 4 describes the BCESP and its GHG reduction features, both inherently in the site plan and in the measures contained in the GGRPA. The greenhouse gas reduction potential of the BCESP is compared to the relevant standards, using available quantitative and non-quantitative systems. This chapter also discusses the process by which the GHG reduction measures were incorporated in the BCESP.

- Chapter 5 summarizes the GHG reduction measures in the BCESP and makes a conclusion on the BCESP's compliance with the applicable GHG reduction standard, with recommendations as appropriate. It also discusses the relationship between the GGRPA and future GHG reduction measures proposed by other GHG plans, such as the State's Scoping Plan and Stockton's CAP.

2.0 BACKGROUND

This chapter describes the scientific and regulatory framework for climate change issues in California. This includes a discussion of the general international understanding with respect to climate change as well as State legislation, policy and action plans addressing climate change and greenhouse gas reduction in California. It also describes the plans and programs of the City of Stockton, including the Settlement Agreement with the California Attorney General's office that provided much of the impetus for City actions on climate change.

2.1 SCIENTIFIC BACKGROUND

This GGR Plan and Analysis assumes the general consensus of the scientific community, which is that global climate change is occurring, as indicated by increases in global air and ocean temperatures (AEP, 2007). A major source of global climate change is understood to be atmospheric concentrations of greenhouse gases (GHGs) that trap heat in the earth's atmosphere, thereby increasing average global temperatures. GHGs include carbon dioxide (CO2), the most common GHG and the largest contributor to global climate change. Other GHGs include methane (CH4), nitrous oxide (N2O) and other less-abundant gases. GHGs have varied global warming potential (GWP) - the potential of a gas or aerosol to trap heat in the atmosphere. The reference gas for GWP is carbon dioxide, which has an assumed GWP of one. Methane has a GWP of 21, which means that it has 21 times greater global warming effect than carbon dioxide on a molecule-by-molecule basis. GWPs for other GHGs include 310 for N2O and 23,900 for sulfur hexafluoride, a gas used in the electrical and magnesium industries (California Climate Action Registry, 2009).

Total worldwide emissions of GHGs in 2004 were estimated at 20,135 million metric tons (MMT) of CO2 equivalent (CO2e). U.S. emissions during the same year were estimated at 7,074 MMT CO2e (AEP, 2007). In 2004, GHG emissions in California totaled 492 MMT CO2e (California Energy Commission, 2006). California was the second largest contributor of GHGs among states in the United States after Texas, and the 16th largest contributor in the world (AEP, 2007; California Energy Commission, 2006)).

GHG emissions are associated with numerous human activities, primarily those that involve the combustion of carbon-based fuels such as vehicle use and power generation. In California, the major source of greenhouse gases was transportation, accounting for 40.7% of total GHG emissions. Electric power generation accounted for the second highest percentage of emissions, at 22.2%. Industrial activity accounted for 20.5% of total emissions, agriculture and forestry comprised 8.3%, and the remaining 8.3% were from other sources (California Energy Commission, 2006).

The City of Stockton has recently conducted a preliminary inventory of its GHG emissions, consistent with the methodologies of the CARB and of the International Council for Local

Environmental Initiatives (ICLEI) – Local Governments for Sustainability. Table 2-1 provides an estimate of the GHG emissions generated in the City of Stockton for three specific years, along with per capita emissions.

TABLE 2-1
GHG EMISSIONS IN STOCKTON

	GHG Emissions (metric tons)		
Sector	1990	2005	2020
Residential	278,013	353,567	482,808
Commercial/Industrial	400,134	440,970	506,604
Transportation	1,410,391	1,537,764	1,924,981
Waste	49,970	63,296	86,433
TOTAL	**2,138,308**	**2,395,597**	**3,000,886**
Population	210,943	268,470	366,322
Per Capita GHG Emissions	10.14	8.93	8.19

Source: "Adoption of Interim Community Greenhouse Gas Emission Reduction Target for the City of Stockton." City of Stockton memorandum dated September 1, 2009. 1990 City population from 1990 U,S, Census. 2005 City population and 2020 projection from San Joaquin Council of Governments, *Population, Employment and Housing Unit Projections,* 2004; cited in City of Stockton Housing Element, adopted May 18, 2010.

As indicated in Table 2-1, while total GHG emissions in Stockton are expected to increase over time, per capita emissions are projected to decrease. This may be explained in part by anticipated technological changes that will be implemented during this time, such as more energy efficient buildings, cleaner burning engines and use of renewable energy sources such as solar and wind power. Linked with these technological changes are policy changes designed to encourage the use of these technologies, such as the Low Carbon Fuel Standard, the Pavley Act GHG emission standards for automobile, the Renewables Portfolio Standard, and the California Green Building Standards Code (CALGREEN). Along with changes that encourage use of GHG-reducing technology, policy changes that encourage changes in transportation and land use activities will also make contributions. For example, Senate Bill 375 (SB 375) requires metropolitan planning organizations to prepare integrated transportation and land use plans that reduce the amount of vehicle travel, thereby reducing GHG emissions from vehicles.

Concerns related to global climate change include the direct consequences of an altered, warmer climate, but also include indirect effects. In California, both direct and indirect effects could have serious consequences. The state's Climate Action Team, in its 2010 Biennial Report, discussed the latest research on the potential impacts of climate change on California's environment. These potential impacts include (Climate Action Team, 2010):

- Although there would be continued variability, the general trend would be for less precipitation throughout California to the end of the 21st century. This trend does not apply uniformly to all areas of California – in fact, the tendency for drying may

fade and even reverse in northern California. However, even if precipitation levels were unchanged, higher temperatures would increase evaporative water loss, and thus produce overall drier conditions.

- The snowpack in the Sierra Nevada, which is a major source of California's water, would melt earlier. The earlier melting could adversely affect the capacity and reliability of the California water system with respect to water storage and flood management. In addition, the snowpack would produce less overall runoff, and there would be an increasing trend in extreme flows (floods) during the winter months.

- Sea levels would rise from their 2000 levels by 11-18 inches by 2050, and by 23-55 inches by 2100. Many coastal areas would be subject to inundation, as would areas near bodies of water affected by tides, such as Suisun Bay.

- Agricultural production would vary by crop, but some crops (e.g., cherries, cotton, maize, wheat, sunflower) would experience a significant decrease in yields. Other crops (e.g., almonds, tomatoes, rice, alfalfa) would experience no change in yields or even an increase.

- The number and intensity of wildfires is expected to increase, which would increase risk to lives and property and contribute to decreased air quality.

- The productivity of forest for timber in general is estimated to decline on a statewide basis, but timber production may increase in some locations and for some tree species.

- While water deliveries to urban users would generally be maintained, water for agricultural uses and environmental flows may be reduced. Water exports from the Delta south would be reduced by 21-25% by 2100. Reservoir carryover storage (the amount of water in reservoirs at the end of the dry season) would decline by 33-38% by 2100. In response, groundwater pumping in the Sacramento Valley would increase.

- Increases in mean temperature and increased frequency of extreme heat events such as heat waves would occur, which would negatively affect public health.

- The aforementioned increases in temperature, combined with the uneven distribution of new residential development across the state, will generate increased electricity demand for cooling, particularly in the Central Valley. However, hydroelectric power generation is expected to decline due to changes in hydrology caused by climate change.

- Air pollution in coming decades is expected to worsen, with an increased potential for high ozone and high particulate matter (PM) days. This would adversely affect public health.

Many of the impacts described above would affect the Stockton area, directly or indirectly. Specifically, climate change may have the following impacts on Stockton, and by extension the Bear Creek East Specific Plan area:

- The general trend would be for less precipitation throughout California. Even if precipitation levels were unchanged, higher temperatures would produce overall drier conditions. This would have a two-fold effect on Stockton. First, less precipitation would mean less replenishment of groundwater and reservoirs upon which the project would rely for its water supply. Second, drier conditions may lead to increased water demand for landscaping, placing greater demands on water supply.

- The snowpack in the Sierra Nevada would melt earlier, thereby producing less overall runoff and increasing a trend in floods during the winter months. Reduced snowpack runoff, which is a major source of California's water, would reduce the available water supply of both surface and groundwater to Stockton. Stockton is located in an area prone to flooding; therefore, increased flood events could affect the safety of Stockton residents and property.

- Sea level rise would not directly affect Stockton, as it is not located on a coastline or adjacent to any body of water affected by tides. However, increased sea levels could lead to greater saltwater intrusion into the Delta, which experiences tidal effects. Greater saltwater intrusion may adversely affect water quality of aquifers in the Delta area, thereby affecting potential groundwater supplies for the Stockton area.

- Changes in agricultural production would have a significant economic impact, as agriculture is a significant sector in the local economy.

- Stockton is not within an area that would be directly affected by wildfires, whose number and intensity are expected to increase. However, increased wildfires elsewhere in the state, particularly in the foothill and mountain regions east and west of Stockton, may contribute to decreased air quality in the area, which would adversely affect the health of residents.

- Water deliveries to urban users would generally be maintained. However, a decline in reservoir carryover storage may lead to increased groundwater pumping, thereby reducing aquifer volumes and contributing to existing subsidence conditions in San Joaquin County. In addition, as previously described, groundwater quality in the Stockton area may be adversely affected by saltwater intrusion, further reducing available groundwater supplies.

- Increases in mean temperature and increased frequency of extreme heat events would occur, which would negatively affect public health. Stockton is located in the San Joaquin Valley, which tends to experience hot summers. More frequent hot days would likely adversely affect the health of Stockton residents.

- Increased electricity demand for cooling is expected in Stockton as temperatures rise, which would help residents deal with potential heat impacts. However, an expected decline in hydroelectric power generation may lead to a reduced electricity supply, thereby increasing the potential for brownouts and blackouts if alternative sources of electric power are not found. Non-functioning cooling systems resulting from brownouts and blackouts would likely lead to increased incidents of heat-related health problems in the Stockton area.

- Air pollution in coming decades is expected to worsen, with an increased potential for high ozone and high PM days. Stockton is located in an air basin that is already in nonattainment status for state and federal ozone standards and state PM standards. The increased air pollution would adversely affect the health of residents and workers in the Stockton area.

GHGs have been accumulating in the earth's atmosphere at a faster rate than has occurred historically. The 2005 GHG concentration in the atmosphere was estimated at 375 parts per million (ppm). The United Nations Intergovernmental Panel on Climate Change (IPCC) has constructed several emission trajectories of greenhouse gas concentrations needed to stabilize global temperatures and climate change impacts. The IPCC concluded that stabilization of greenhouse gases at a concentration of 400-450 parts per million (ppm) is required to keep mean global warming below 2° Celsius, which is assumed to be necessary to avoid dangerous climate change (AEP, 2007).

The IPCC climate model results form the basis of the California global climate change statutes and policy embodied in AB 32 and Executive Order S-3-05 as well as similar policies adopted by other government entities. In general, these policies have in common the goal of reducing greenhouse gas emissions to 1990 levels by 2020.

2.2 REGULATORY BACKGROUND

2.2.1 International

Global climate change is a subject of longstanding international dialogue and action, dating from the 1988 establishment of the IPCC to further the understanding of human-induced climate change, its potential impacts, and options for adaptation and mitigation (IPCC, 2004). The United States joined other countries around the world in the United Nations Framework Convention on Climate Change (UNFCCC), which established an agreement to gather and share related information and take action to address the impacts of climate change (UNFCCC, 2007). The Kyoto Protocol, a treaty negotiated under UNFCCC, committed the participants to reduce emissions of GHGs or engage in emissions trading. However, the United States did not ratify the treaty.

In 2009, the UNFCCC held its annual Climate Change Conference in Copenhagen, Denmark. At the conference, member states agreed to make voluntary pledges for GHG emission reductions to be achieved by 2020. If the pledges are considered insufficient to meet the goal of global temperature rise to no more than 2° Celsius, then the accord would be reviewed no later than 2015 (UNFCCC, 2009). At the recently concluded 2010

conference in Cancun, Mexico, members agreed to inscribe their pledges into conference documents, as well as agreeing to strengthen reporting requirements and review of emissions-reduction actions by both developed and developing countries (Associated Press, 2010).

2.2.2 Federal

To date, the federal government has not adopted any comprehensive national strategy for reducing GHG emissions. The last such attempt was made in 1993, when President Clinton announced a Climate Change Action Plan with a goal of reducing GHG emissions to 1990 levels by 2000 (CAPCOA, 2008).

Under the current administration, efforts have been made to institute new federal fuel economy and GHG emissions standards modeled after existing California standards; in a related action, in 2009, the U.S. Environmental Protection Agency (EPA) granted California the authority to implement GHG-reducing auto standards. Also, in May 2010, the EPA issued a final rule setting thresholds for GHG emissions that define when permits under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule "tailors" the requirements of these permitting programs to limit which facilities will be required to obtain PSD and Title V permits. Facilities responsible for nearly 70% of the national GHG emissions from stationary sources will be subject to permitting requirements under this rule. This includes the largest GHG emitters – power plants, refineries and cement production facilities. This rule does not apply to the project, as no significant stationary sources of GHG emissions are proposed.

2.2.3 State of California

The Governor of California and the State Legislature have declared their concern with regard to global climate change, and have set State agencies in motion to identify and implement strategies for the reduction of GHG emissions. California first addressed climate change in 1988 with the passage of Assembly Bill (AB) 4420, which directed the California Energy Commission to study global warming impacts to the state and to develop an inventory of GHG emission sources. In 2000, Senate Bill (SB) 1771 established the California Climate Action Registry to allow companies, cities and governmental agencies to voluntarily record their GHG emissions in anticipation of a possible program allowing them to be credited for early reductions (CARB, 2008).

Executive Order S-3-05

In 2005, Governor Schwarzenegger signed Executive Order S-3-05, which called for the state to reduce its GHG emissions to 1990 levels by 2020, and to 80% below 1990 levels by 2050. The 2050 target represents the level of emission reductions climate scientists believe is necessary to reach levels that will stabilize the climate (CARB, 2008). The Executive Order also created the Climate Action Team, composed of the directors of several State agencies. Chaired by the Secretary of the California Environmental Protection Agency, the Climate Action Team has helped to direct State efforts on GHG reduction and to engage key State agencies in the process (CARB, 2008). The majority of this work has

occurred in the process of implementing AB 32, the Global Warming Solutions Act of 2006.

AB 32

In 2006, the State Legislature passed and Governor Schwarzenegger signed AB 32, the Global Warming Solutions Act. AB 32 identified global climate change as a "serious threat to the economic well-being, public health, natural resources and the environment of California." It set into law the 2020 GHG reduction goal identified in Executive Order S-3-05; although AB 32 did not include the EO S-3-05 goal of reducing greenhouse gas emissions to 80% below 1990 levels by 2050, the establishment of the 2020 goal was intended to establish a trajectory for further reductions in greenhouse gas emissions over time.

AB 32 directed the California Air Resources Board (CARB) to begin developing discrete early actions to reduce GHG emissions, while also preparing a Scoping Plan to identify actions that would meet the 2020 reduction target. The Scoping Plan was adopted in 2008, and the reduction measures to meet the 2020 target are scheduled to become operative in 2012 (CARB, 2008).

AB 32 required the CARB to identify the statewide baseline level of GHG emissions in 1990, which would also serve as the emissions target to be achieved by 2020. In December 2007, CARB identified that emission target at 427 MMT CO2E. CARB also identified nine discrete early action measures that should be implemented immediately: Low Carbon Fuel Standard, Landfill Methane Control, Reductions from Mobile Air Conditioning, Semiconductor Reduction, SF_6 Reductions from Non-Electric and Non-Semiconductor Applications, High GWP Consumer Products, Heavy-Duty Vehicles, Tire Pressure Program, and Shore Power for Ocean-Going Vessels. Six of these measures are currently in effect or will be shortly, while regulations are still being prepared for the other three measures (SF_6 Reductions, High GWP Consumer Products, Tire Pressure Program).

Climate Change Scoping Plan

In accordance with AB 32, CARB adopted the Climate Change Scoping Plan in December 2008. The Scoping Plan details the GHG reduction activities that will be undertaken by the state or alternatively passed down to local government; the Scoping Plan quantifies the estimated GHG emission reductions associated with each of the initiatives. Self-described as "ambitious but achievable", the Scoping Plan proposes a 29% reduction in projected "business-as-usual" emission levels for 2020, which the Scoping Plan assumes will achieve the goal of reducing GHG emissions to 1990 levels, or 427 MMTCO2e. Key elements in the Scoping Plan for achieving that goal include:

- Expanding and strengthening existing energy efficiency programs, as well as building and appliance standards.
- Achieving a statewide renewable energy mix of 33 percent.
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system.

- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets.

- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard.

- Creating targeted fees, including a public goods charge on water use, fees on higher global warming potential gases, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation.

The Scoping Plan's Recommended Reduction Measures, 16 in all, are projected to result in a total GHG emission reduction of 174 MMT CO2e by 2020, which exceeds the target reduction by 5 MMT CO2e. Of these reductions, nearly 85% will be achieved under the proposed regional cap-and-trade system and "complementary measures." Several other measures, including reduction in state and local government operations, are identified and would contribute additional GHG reductions. The potential contribution of local government-related reductions is not quantified in the Scoping Plan or counted in the projected reductions. Table 3-1 in Chapter 3.0 provides a summary of the Recommended Reduction Measures.

AB 32 Discrete Early Actions

In accordance with the provisions of AB 32, CARB identified and adopted nine "discrete early actions" to reduce GHG emissions, designed to go into effect on or before January 1, 2010. The nine discrete early actions are:

- Low carbon fuel standard
- Aerodynamic efficiency standards for trucks
- Tire pressure program
- Ship electrification at ports
- Increase capture of methane from landfills
- Reduce high global warming potential (GWP) refrigerants
- Limit high GWP gases in consumer products
- Reduce perfluorocarbons (PFCs) in semiconductor applications
- Reduce sulfur hexafluoride emissions in non-electric and non-semiconductor applications.

Executive Order S-01-07, issued in January 2007, established a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10% by 2020. To achieve this goal, the Executive Order directed CARB to establish a Low Carbon Fuel Standard, which would require fuel providers in California to ensure that the mix of fuel they sell into the California market meet, on average, a declining standard for GHG emissions (measured in CO2e grams) per unit of fuel energy sold. CARB approved the Low Carbon Fuel Standard regulation in April 2009, and the first substantive requirements of the standard are scheduled for implementation in 2011. All other early actions have been adopted and are in varying stages of implementation.

SB 375

Of the various Recommended Reduction Measures in the Climate Change Scoping Plan, one – Regional Transportation-Related GHG Targets – is addressed to local land development. This measure revolves around the implementation of SB 375. SB 375, passed in 2008, builds on the existing regional transportation planning process to connect GHG emission reductions to land use and transportation policy. Specifically, SB 375 requires CARB to establish GHG emission reduction targets for each region, defined as an area covered by a metropolitan planning organization (MPO). CARB must set regional targets by September 30, 2010. In San Joaquin County, the MPO is the San Joaquin Council of Governments (SJCOG).

Under SB 375, each MPO must include a Sustainable Communities Strategy in its regional transportation plan that seeks to achieve targeted reductions in GHG emissions from cars and light trucks if there is a feasible way to do so. If the MPO determines that a Sustainable Communities Strategy does not achieve the region's targets, then the MPO must develop an Alternative Planning Strategy. The Alternative Planning Strategy would have the same objective as the Sustainable Communities Strategy, but it would not be part of the regional transportation plan.

Neither the Sustainable Communities Strategy nor the Alternative Planning Strategy directly affects or supersedes local land use decisions; nor do they require that local plans or zoning be consistent with them. However, SB 375 provides an incentive by streamlining the CEQA environmental review process under specific circumstances. A residential or mixed-use project that is consistent with the general use designation, density, building intensity and applicable policies for the project area in either a Sustainable Communities Strategy or an Alternative Planning Strategy does not have to address particular issues in a CEQA document. Specifically, the CEQA document would not be required to discuss:

- Growth-inducing impacts; or

- Project-specific or cumulative impacts on global warming from vehicle trips, if the project incorporates mitigation measures required by an applicable environmental document.

The BCESP site is within the jurisdiction of the San Joaquin Council of Governments (SJCOG), the MPO for the San Joaquin County region. CARB adopted regional targets on September 23, 2010. The targets established for SJCOG are a 5% per capita reduction in GHG emissions by 2020, and a 10% reduction by 2035. These targets are “placeholder” targets, and CARB intends to revisit them in 2012. Nevertheless, SJCOG will begin work on its Sustainable Communities Strategy.

California Green Building Code (CALGREEN)

“Green building” covers building design and construction practices that reduce consumption of natural resources and lower the impact on the environment. Typical practices encourage energy and water efficiency, reduction in waste, and increased use of recycled materials. In recent years, several organizations have developed certification

programs that evaluate the "greenness" of a development project. The best known of such programs is the Leadership in Energy and Environmental Design (LEED) program, developed by the U.S. Green Building Council. Another certification program is Build It Green, prepared by a California non-profit organization of the same name.

In 2009, the California Building Standards Commission adopted a voluntary Green Building Standards Code, known as CALGREEN. On January 2010, the Commission made CALGREEN mandatory, to be effective January 1, 2011. CALGREEN is Part 11 of Title 24 of the California Code of Regulations. CALGREEN will require that every new building constructed in California reduce water consumption by 20%, divert 50% of construction waste from landfills, and install low pollutant-emitting materials. It also requires separate water meters for indoor and outdoor water use of nonresidential buildings, with a requirement for moisture-sensing irrigation systems for larger landscape projects. CALGREEN requires mandatory inspections of energy systems (e.g., heat furnace, air conditioner and mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that such systems are working at their maximum capacity and according to their design efficiencies. Upon passing state inspections, property owners will have the ability to label their facilities as CALGREEN compliant without using additional third-party certification programs such as LEED.

Although CALGREEN was developed independently of the State's GHG reduction programs, it would have an impact on GHG emissions. The CARB estimated that CALGREEN provisions would reduce GHG emissions by 3.0 MMT CO2e in 2020 (Office of the Governor, 2010). CALGREEN would partially achieve the 26 MMT CO2e reduction through green building practices anticipated by the State's Climate Change Scoping Plan (see Table 3-1 in Chapter 3.0). In August 2010, the City of Stockton adopted CALGREEN as part of its Green Building Ordinance, as described later in this section.

SB 97

Senate Bill 97 (SB 97), enacted in 2007, directed the Governor's Office of Planning and Research (OPR) to recommended amendments to the CEQA Guidelines for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions. In April 2009, OPR submitted to the Secretary for Natural Resources its recommended amendments to the CEQA Guidelines, which were adopted and took effect on March 18, 2010. Among the CEQA Guidelines amendments were changes to the Environmental Checklist (CEQA Guidelines Appendix G) that created a Greenhouse Gas Emissions section with generalized significance thresholds to aid in the evaluation of GHG emission impacts. With these amendments, lead agencies must now evaluate impacts related to climate change as part of their CEQA environmental review of projects.

California Attorney General's Recommendations

The California Attorney General's Office has issued guidance for local governments on dealing with climate change in their local plans. The Attorney General's recommendations are not binding; however, they do provide local governments and project applicants an indication of what the State of California would consider effective climate change policies and mitigation.

In the paper "Sustainability and General Plans: Examples of Policies to Address Climate Change," resources and examples are cited for General Plan policies that address climate change, among which are smart growth, transit-oriented development, energy- and water-efficient buildings and landscaping, alternate travel mode connections, renewable energy generation, urban and rural forestry, and solid waste management. In another paper, "Addressing Climate Change at the Project Level," mitigation measures to reduce the climate change impacts of projects are listed, along with references. Sample mitigation measures include, among others, energy-efficient appliances and lighting, green building, use of renewable energy sources, use of water-efficient irrigation systems and landscaping, reuse and recycling of construction and other solid waste, mixed use and infill development, incorporation of bicycle and pedestrian facilities, and programs to reduce vehicle travel. The BCESP has incorporated mitigation measures to reduce its GHG emission impacts, consistent with this paper.

Other State Regulations

AB 1493

Assembly Bill 1493 (AB 1493), authored by State Assembly member Fran Pavley and enacted in 2002, requires CARB to develop and adopt the nation's first GHG emission standards for automobiles and light trucks. CARB approved standards for GHG emission reductions, also known as "Pavley I," in September 2004. The standards were scheduled to be phased in gradually from the 2009 to the 2016 vehicle model years. When fully phased in, the near term (2009-2012) standards are estimated to result in about a 22 percent reduction in GHG emissions as compared to the 2002 fleet, and the mid-term (2013-2016) standards would result in about a 30 percent reduction (CARB, 2004).

In 2004, the State of California submitted a request for a waiver from federal clean air regulations to allow the State to require reduced tailpipe emissions of CO_2. After initially denying the waiver request in late 2007, the EPA granted the request in June 2009, enabling the State to enforce its GHG emissions standards for new motor vehicles beginning with the current model year.

Low Carbon Fuel Standard

In January 2007, Governor Schwarzenegger issued Executive Order S-01-07, which established a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10% by 2020. To achieve this goal, the Executive Order directed CARB to establish a Low Carbon Fuel Standard (LCFS). The LCFS will require fuel providers in California to ensure that the mix of fuel they sell into the California market meet, on average, a declining standard for GHG emissions (measured in CO2e grams) per unit of fuel energy sold. The standard will be measured on a lifecycle basis in order to include all emissions from fuel consumption and production, including the "upstream" emissions (i.e., from the extraction, refining and transportation of fuels) that are major contributors to the climate change impact of transportation fuels. CARB identified the LCFS as a discrete early action item pursuant to AB 32 and approved the LCFS regulation in April 2009. The first substantive requirements of the LCFS are scheduled for implementation in 2011.

Renewables Portfolio Standard

Established originally in 2002 under Senate Bill 1078, California's Renewables Portfolio Standard was accelerated in 2006 under Senate Bill 107 by requiring that 20 percent of electricity retail sales be served by renewable energy resources by 2010. Subsequent recommendations in California energy policy reports advocated a goal of 33 percent by 2020. On November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08, requiring all retail sellers of electricity to serve 33 percent of their load with renewable energy by 2020. The following year, Executive Order S-21-09 directed the California Air Resources Board, under its AB 32 authority, to enact regulations to achieve the goal of 33 percent renewables by 2020.

In April 2011, Governor Edmund G. Brown, Jr. signed Senate Bill X1-2. This legislation preempts the CARB's 33 percent Renewable Electricity Standard and applies to all electricity retailers in the state, including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators. All of these entities must adopt the new Renewables Portfolio Standard goals of 20 percent of retail sales from renewables by the end of 2013, 25 percent by the end of 2016, and 33 percent by the end of 2020.

2.2.4 City of Stockton

Stockton General Plan 2035

The Stockton Planning Commission and the Community Development Department manage land development within the City. The basic document governing land development is the Stockton General Plan 2035. The General Plan and City staff encourages the planning and development of "smart growth" communities and promotion of infill development where feasible. Green building is required by the existing adopted City Council policy discussed above. Larger development projects are required to comply with the Early Climate Action Protection requirements of the City's Settlement Agreement with the California Attorney General and the Sierra Club, which is discussed in more detail below.

The City of Stockton addressed the issue of global climate change and the need to reduce GHGs resulting from new land development in Policy HS-4.20 of the General Plan 2035, which was adopted in December 2007. Policy HS-4.20 requires the City to develop and adopt a more detailed policy that would be focused on GHG reductions that can be achieved through the land use planning process. This policy is being implemented by the City in the preparation of its Climate Action Plan (CAP), as discussed in more detail below.

The City of Stockton is engaged in a range of programs and studies that will, when implemented, result in reductions in GHG emissions associated with municipal operations, new development, and existing development in the larger community. The City of Stockton supports efforts to control GHG emissions through its membership in ICLEI – Local Governments for Sustainability. In partnership with ICLEI, the City has conducted a preliminary emissions inventory and forecast of greenhouse gas emissions, which would be followed by adoption of a local CAP.

Settlement Agreement with Attorney General

In December 2007, the City adopted the Stockton General Plan 2035 and certified its Environmental Impact Report (EIR). The following month, the Mother Lode Chapter of the Sierra Club and the Morada Area Association filed court actions alleging that the City had violated CEQA in its approval of the General Plan. The California Attorney General's Office also raised concerns about the adequacy of the EIR, including the EIR's failure to incorporate enforceable measures to mitigate the GHG emissions resulting from General Plan implementation. In order to allow the General Plan to go forward, the City, the Sierra Club and the Attorney General resolved their dispute through a Settlement Agreement, which was signed by all parties in October 2008. The Morada group was not a party to the Agreement.

As stated in the Settlement Agreement, all parties "want to ensure that the General Plan and the City's implementing actions address GHG reduction in a meaningful and constructive manner." A provision of the Agreement requires the City to prepare a Climate Action Plan, which is discussed below. The City also agreed to submit a green building program and a transit program based on a transit gap study to the City Council for its consideration. The Settlement Agreement promotes incentives for infill and downtown development, while imposing criteria on development at the edge of the City limits intended to mitigate GHG emissions.

Section 9 of the Settlement Agreement describes Early Climate Protection Actions, which are requirements that are applicable to specific plans and large development projects until the City adopts the CAP. Section 9(a) requires that the City consider several GHG-related planning issues, which are described in more detail in Chapter 3.0 of this document. Section 9(b), (c) and (d) require the City to review the studies, to consider imposing requirements on projects highlighted by the studies via mitigation measures and/or conditions of approval, to conduct a public hearing, and to consider requiring certain projects to conform to future requirements of the CAP and its implementing documents.

City of Stockton Climate Action Plan

In accordance with the Settlement Agreement, the City of Stockton is currently developing a CAP. A Climate Action Plan Advisory Committee (CAPAC), consisting of representatives from environmental, non-profit, labor, business, and developer interests, is responsible for preparing the CAP. In brief, the CAP is required to inventory existing, 1990 and 2020 GHG emissions and identify GHG reduction targets consistent with AB 32. It is anticipated that the CAP will address reduction of *per capita* vehicle miles travelled (VMT), green building requirements, energy efficiency of existing structures, transit gaps, transit improvement programs, balancing development on the urban fringe with infill development, and monitoring progress in the implementation of the Plan.
While the Settlement Agreement required that the CAP be submitted to the City Council within two years of the execution of the Settlement Agreement, that deadline has now passed. It is anticipated that the CAP will be submitted for approval in 2011.

Some CAP requirements are already being implemented on an interim basis as a result of other actions by the City of Stockton. These include the green building program previously

discussed, and the City's efforts to promote smart growth in conjunction with its review and approval of new land development projects. In September 2009, the City Council adopted an interim greenhouse gas reduction target of 28.7% from estimated 2020 emission levels. Based on the available data, this is the reduction needed to achieve a citywide reduction of GHG emissions to 1990 levels by 2020. The interim target is consistent with the state's Scoping Plan objective of reducing projected 2020 GHG emissions by 29% in order to reach the target of reaching 1990 GHG emission levels.

The Settlement Agreement contemplated that the City would adopt a transit program, based upon a transit gap study to be prepared as part of the CAP process. The program would require, among other things, certain street design standards to facilitate transit and the imposition of fees to contribute toward the development of a city-wide transit system. The City has not adopted such a program, but has released a transit gap study, prepared by Transportation Management and Design, Inc.

The study concluded that geographic coverage of the San Joaquin Regional Transit District (SJRTD) service area is adequate to serve the demand. However, it noted that General Plan policies may not go far enough in stressing the importance of a robust local transit network, and that development policies should provide more specific information regarding transit-friendly urban design strategies. Recommendations in the transit gap study included increasing the frequency of bus stops along West Lane and adding a BRT route along West Lane in the future (TMD, 2010). Although individual systems vary, a typical BRT system uses high-capacity buses, dedicated bus lanes, upgraded stations providing level access between platform and vehicle floor, pre-paid fare systems and boarding platforms to achieve a high-speed service typical of rail systems, at significantly less cost than rail (Institute for Transportation and Development Policy, 2007).

Green Building Policy

The City is presently implementing a Green Building Policy, under which all new City facilities will be certified under the Leadership in Energy and Environmental Design (LEED) program. As previously noted, LEED is a program of the U.S. Green Building Council providing third-party verification that a building or community is designed and built using strategies aimed at energy savings, water efficiency, CO2 emissions reduction, improved indoor environmental quality, and reduced impacts to and stewardship of resources. Stockton is the first city in the Central Valley to require conformance with LEED standards. Future City facilities shall be LEED-certified to the Silver level at a minimum.

Green Building Ordinance

On August 26, 2010, the City of Stockton adopted a Green Building Ordinance. The Green Building Ordinance requires that new residential and non-residential buildings to comply with the provisions of CALGREEN, including those related to water usage, construction material recycling, and energy efficiency. Although CALGREEN provides no specific energy efficiency targets, it notes that the Energy Commission standards include a 15% improvement above Title 24 standards as a goal for both residential and nonresidential buildings.

In addition, the Green Building Ordinance requires energy efficiency increases by 30% above the 2001 Title 24, Part 6 requirements for single-family residences adding more than 500 square feet or nonresidential buildings adding more than 5,000 square feet. The energy efficiency requirement applies to the entire structure, not just to the addition.

Other City Actions

City departments have been directed to work on other "green" initiatives, including policies and procedures to increase use of hybrid and Ultra Low Emission Vehicles, and biodiesel fuels. Energy audits have served to reduce energy consumption at City facilities, and water conservation measures have been implemented at City parks and public landscaping areas. City purchasing is increasingly green. City employees have increased recycling efforts through audits and increased the recycling of batteries, portable electronic devices, cans and bottles. The City continues to implement its long-standing water conservation program. Through its franchise waste haulers, the City operates a source-separated waste management system that maximizes diversion of recyclable materials from residential development. The City requires recycling of commercial and construction wastes by ordinance.

The City of Stockton is active in educating its citizens through on-line and other information resources. The City's website contains substantial information on the reduction of GHGs, energy and water conservation, recycling and other related matters. These web pages integrate related energy conservation programs available through Pacific Gas and Electric Company (PG&E).

3.0 GHG REDUCTION STANDARDS AND METRICS

This chapter provides a description of the applicable GHG standards and the metrics available to determine the effectiveness of proposed BCESP greenhouse gas reduction measures. It describes the GHG plans, regulations and standards that are applicable to the project, the measures based on these plans and regulations, and the extent to which these measures are quantifiable. This chapter provides a bridge between the regulatory framework described in Chapter 2.0 and the implementation measures evaluated in Chapter 4.0.

3.1 APPLICABLE PLANS, STANDARDS AND METRICS

Chapter 2.0 describes the various plans and regulations applicable to GHG reduction, from the international to the local level. The following describes the most applicable and quantitative of these to the BCESP, along with their quantitative or qualitative metrics against which the GHG reduction measures of the BCESP can be compared.

California Climate Change Scoping Plan (AB 32)

The California Climate Change Scoping Plan is the result of one of the provisions of AB 32. The Scoping Plan sets forth the means by which the target of reducing GHG emissions to 1990 levels by 2020 will be achieved. Meeting this objective will put the state on a trajectory to meet longer-range GHG reduction goals.

Achieving the 2020 GHG emissions target of 427 MMT CO2e will require a reduction of 169 MMT CO2e from the State's projected 2020 business-as-usual emissions estimate of 596 MMT CO2e, which is a reduction of approximately 29%. The Scoping Plan's Recommended Reduction Measures, which are listed in Table 3-1, are projected to result in a total GHG emission reduction of 174 MMT CO2e by 2020, which exceeds the target reduction by 5 MMT CO2e. Of these reductions, nearly 85% will be achieved under the proposed regional cap-and-trade system and "complementary measures." The other 15% would occur from sources that are not part of the proposed cap-and-trade system.

Several "Other Recommended Measures" are listed by the Scoping Plan, including reduction in GHGs associated with state and local government operations. However, these reductions are not counted toward the required reduction, but would instead contribute additional GHG reduction over and above the target levels. The potential contribution of local government-related reductions is not quantified in the Scoping Plan or counted in the projected reductions.

TABLE 3-1
CLIMATE CHANGE SCOPING PLAN
RECOMMENDED GREENHOUSE GAS REDUCTION MEASURES

Recommended Reduction Measures	Description of Measures	GHG Reductions By 2020 (MMT CO2e)	% Total
Estimated Reductions from Cap-and-Trade Program and Complementary Measures			
California Light-Duty Vehicle Greenhouse Gas Standards	Performance standards for GHG emissions from passenger vehicles.	31.7	
Energy Efficiency	Standards for buildings and appliances, use of energy-saving technologies.	26.3	
Renewables Portfolio Standard	33% of State's energy to be provided by renewable sources by 2020.	21.3	
Low Carbon Fuel Standard	Reduce carbon content of transportation fuels.	15	
Regional Transportation-Related GHG Targets	Regional GHG emission reduction targets through SB 375 process.	5	
Vehicle Efficiency Measures	Implement light-duty vehicle efficiency measures.	4.5	
Goods Movement	Implement adopted regulations for use of shore power for ships at berth; improve efficiency in goods movement activities.	3.7	
Million Solar Roofs	Ratepayer-financed incentive program to install 3,000 MW solar energy capacity.	2.1	
Medium/Heavy Duty Trucks	Adopt medium- and heavy-duty vehicle efficiency measures.	1.4	
High Speed Rail	Support implementation of a high speed rail system.	1	
Industrial Measures (for sources covered under cap-and-trade program)	GHG audits of large industrial sources; reduce GHG emissions from refineries.	0.3	
Additional Reductions Necessary to Achieve the Cap	Additional reductions from industrial sectors under cap-and-trade system, using compliance flexibility or market mechanisms.	34.4	
	Subtotal	146.7	84.3%
Estimated Reductions from Uncapped Sources/Sectors			
High Global Warming Potential Gas Measures	Adopt measures to reduce high global warming potential gases (e.g., refrigerants, perfluorocarbons).	20.2	
Sustainable Forests	Preserve forest capacity for carbon sequestration; encourage use of forest biomass for energy generation.	5	
Industrial Measures (for sources not covered under cap-and-trade program)	Reduce GHG emissions from oil and gas extraction and transmission operations.	1.1	
Recycling and Waste (landfill methane capture)	Capture of methane generated from decomposing waste in landfills.	1	
	Subtotal	27.3	15.7%
Total Reductions Counted Towards 2020 Target		***174.0***	***100.0%***

TABLE 3-1
CLIMATE CHANGE SCOPING PLAN
RECOMMENDED GREENHOUSE GAS REDUCTION MEASURES

Other Recommended Measures	Description of Measures	Estimated 2020 Reductions (MMT CO2e)
State Government Operations	Reduce impacts of state government operations on GHG emissions (e.g., Environmentally Preferable Purchasing, alternative transport for employees, invest in renewable energy)	1.0-2.0
Local Government Operations	Reduce impact of local government operations on GHG emissions (e.g., see Stockton's GHG reduction policies described in this chapter).	TBD
Green Buildings	Expand use of building practices that reduce GHG emissions (e.g., CA Green Building Code, City of Stockton Green Building Policy).	26
Recycling and Waste (mandatory commercial recycling, other measures)	Mandatory recycling by commercial activities, increased use of organic products, Environmentally Preferable purchasing,	9
Water Sector Measures	Increased water use efficiency and recycling (e.g., City of Stockton landscape water efficiency ordinance)	4.8
Methane Capture at Large Dairies	Capture of methane generated by dairies through manure digester systems.	1

TBD – to be determined

Source: Climate Change Scoping Plan, California Air Resources Board (2008)

Five of the Other Recommended Measures are estimated to produce an additional 42.8 MMTCO2e of greenhouse gas reductions, or an additional 7% reduction in baseline 2020 emissions. Totaling the estimated emissions associated with both the Recommended Reduction Measures and the Other Recommended Measures, the Scoping Plan could reduce greenhouse gas emissions to 11% below 1990 levels by 2020. The Other Recommended Measures, four of which are directly related to local government and/or new development are listed and discussed below.

The majority of the Scoping Plan's provisions, and the bulk of the emission reductions that would be achieved by the Plan, are statewide measures that are only indirectly connected to local government or to land development projects. These provisions operate on a statewide level but will produce GHG reductions at the local level. The Scoping Plan provisions do not provide a quantitative basis for comparison with local land development projects, as the Scoping Plan does not identify GHG measures that can be implemented on a local level. However, as discussed later in this chapter, the City of Stockton has established a quantitative interim GHG reduction target for projects.

Of the various Recommended Reduction Measures, one – Regional Transportation-Related GHG Targets – is addressed to local land development. This measure revolves around the implementation of SB 375. As described in Chapter 2.0, SB 375 requires each MPO to prepare a Sustainable Communities Strategy or an Alternative Planning Strategy that seeks to achieve targeted reductions in GHG emissions from cars and light trucks. In September 2010, CARB established "placeholder" reduction targets for San Joaquin Valley MPOs, including SJCOG, of 5% in 2020 and 10% in 2035. CARB will consider official targets in 2012; in the meantime, SJCOG intends to proceed with preparation of its Sustainable Communities Strategy.

The Scoping Plan would produce substantial reduction in GHG emissions through measures that would apply statewide to existing and new industrial, energy, commercial and residential development, and to on- and off-road travel associated with those uses. Some of these measures overlap or are redundant with proposed BCESP GHG reduction measures, for example the project's "smart growth" elements of the project that would tend to implement the Regional Transportation-Related GHG Targets line item; this measure, however, is only expected to result in a small percentage of the GHG emission reductions needed for the state as a whole.

Most of the GHG reductions identified in the Scoping Plan would parallel and add to reductions generated by the BCESP. These include GHG reductions associated with the proposed cap-and-trade system, new vehicle emission standards, new low-carbon fuel requirements, in-port energy use, goods movement efficiencies, increased energy generation and energy use efficiency, and new requirements on industrial and refinery operations. The City of Stockton calculated the approximate percentage of GHG emission reduction that would occur as a result of state and local actions. The Interim GHG Reduction Target section, discussed later in this chapter, explains the City's calculations.

Settlement Agreement with Attorney General

As discussed in Chapter 2.0, the City of Stockton, the Sierra Club and the California Attorney General reached a Settlement Agreement related to the implementation of Stockton's General Plan. The Attorney General intervened over concerns about the adequacy of the General Plan's EIR, specifically over the EIR's perceived failure to incorporate enforceable measures to mitigate the General Plan's GHG emission impacts (City of Stockton et al., 2008). Under the provisions of CEQA, potentially significant environmental impacts must be mitigated to the extent feasible.

Specifically, the Settlement Agreement required the City to address GHG reductions, primarily through preparation of the CAP. Section 9 of the Settlement Agreement includes Early Climate Protection Actions, which established requirements that are applicable to specific plans and large development projects until the City adopts the CAP. Section 9(a) requires that the City take the following actions, none of which are quantitative in nature:

1. Formulate proposed measures necessary for the project to meet any applicable GHG reduction targets.

2. Assess the project's vehicle miles traveled (VMT) and measures necessary for the project to reduce its VMT.

3. Assess the transit, especially bus rapid transit (BRT), needs of the project and identify project's fair share of the cost of meeting such needs.

4. Assess whether project densities support transit, and, if not, identify proposed increases in project density that would support transit service, including BRT service.

5. Assess the project's estimated energy consumption, and identify proposed measures to ensure that the project conserves energy and uses energy efficiently.

6. Formulate proposed measures to ensure that the project is consistent with a balance of growth between land within Greater Downtown Stockton and existing City limits, and land outside the existing City limits.

7. Formulate proposed measures to ensure that City services and infrastructure are in place or will be in place prior to the issuance of new entitlements for the project or will be available at the time of development.

8. Formulate proposed measures to ensure that the project is configured to allow the entire development to be internally accessible by all modes of transportation.

The City Council must review and consider studies and recommendations pertaining to the above actions, and it must conduct at least one public hearing prior to approval of the proposed project. The City Council must consider the feasibility of imposing conditions of approval. including mitigation measures pursuant to CEQA, based on the studies for each covered development project. The City Council also must consider, in any development approvals or development agreements, including a requirement that all such approvals or development agreements shall be subject to ordinances and enactments adopted after the effective date of any approvals of such projects or corresponding development agreements, where such ordinances and enactments are part of the Climate Action Plan. The City must complete the process described above prior to the first discretionary approval for a development project.

San Joaquin Valley APCD Climate Change Action Plan

Local air districts have a significant role to play in facilitating compliance with AB 32 for land use agencies and businesses. These agencies look to the local air districts for guidance in the evaluation of air-related impacts. In August 2008, the San Joaquin Valley APCD adopted its Climate Change Action Plan. The goals of the Climate Change Action Plan are, among others, to establish APCD processes for assessing the significance of project-specific GHG impacts for projects permitted by the APCD, and to assist local land

use agencies, developers and the public by identifying and quantifying GHG emission reduction measures for development projects (San Joaquin Valley APCD, 2009).

To assist lead agencies, project proponents, permit applicants, and interested parties in assessing and reducing the impacts of project-specific GHG emissions on global climate change, the APCD has adopted an approach to determine if project-specific GHG emissions would have a significant impact. This approach relies on the use of performance-based standards, otherwise known as Best Performance Standards, to assess significance of project-specific GHG emissions on global climate change. The use of Best Performance Standards is a method of streamlining the CEQA process of determining significance and is not a required emission reduction measure. Projects implementing Best Performance Standards would be determined to have a less than considerable contribution to potentially significant impacts on global climate change.

For projects not implementing Best Performance Standards, demonstration of a 29% reduction in GHG emissions from business-as-usual conditions is required to determine that a project would have a less than cumulatively significant impact. This requirement also applies to all projects requiring an Environmental Impact Report (EIR), whether or not the project incorporates Best Performance Standards. The 29% reduction standard was determined by the APCD to be consistent with the emission reduction targets established in the state's Climate Change Scoping Plan, which calls for a 28.4% reduction of emissions from the 2020 business-as-usual scenario (San Joaquin Valley APCD, 2009; CARB, 2008). Since the BCESP requires an EIR, quantification of GHG reductions and comparison to the SJVAPCD's threshold is appropriate.

In Appendix J of its *Final Staff Report: Addressing GHG Emissions Impacts under CEQA*, the APCD provides a table describing various GHG emission reduction measures, along with emission reduction values for each measure if available. Chapter 4.0 lists the measures relevant to the Specific Plan, along with the estimated emission reductions achieved.

It should be noted that the Attorney General's office, in a letter to the APCD dated November 2, 2009, has expressed reservations about APCD's approach to assessing GHG emission impacts. Among its concerns are a potential awarding of reduction credit for measures already required by state or local law, failure to consider impacts of past and current sources of emissions, and avoidance of environmental review by large projects that meet the APCD's thresholds (California Department of Justice, 2009). Nevertheless, this analysis plan will use the APCD's methodology as one of the available means for determining the BCESP's impacts on GHG emissions.

CAPCOA's CEQA and Climate Change

The California Air Pollution Control Officers Association (CAPCOA) is an association of chiefs of all 35 local air quality agencies in California. In January 2008, CAPCOA published its paper *CEQA and Climate Change* as a resource for public agencies as they establish procedures for reviewing GHG emissions from projects subject to CEQA. It considers the application of thresholds and offers three alternative programmatic

approaches toward determining whether GHG emissions are significant. *CEQA and Climate Change* also describes and evaluates available mitigation measures based on their economic, technological and logistical feasibility, and the effectiveness of these measures.

Appendix B of *CEQA and Climate Change* lists the mitigation measures that were evaluated, along with an estimated percentage decrease in GHG emissions associated with the measure. CAPCOA, in coordination with a consulting firm, performed a global search of mitigation measures in practice and under study that would reduce GHG emissions. Appendix B lists each measure, along with an assessment of their economical, technological and logistical feasibility and their emission reduction effectiveness, based on available documentation. The assessment of each measure's feasibility and effectiveness were based on various sources, including studies and information from state and local government agencies and air quality districts. Each mitigation measure, when such information is available, is assigned an emission reduction score based on a percentage reduction in emissions. The score system entails ratings of "high", "moderate" and "low" that refer to the level of the measure to provide a substantive, reasonably certain and long-term GHG emission reductions (CAPCOA, 2008).

Under CAPCOA's system of analysis, projects subject to CEQA would either qualitatively or quantitatively identify the amount of GHG emissions associated with the project, using analytical methodologies that depend on the significance threshold concept adopted.

The analysis would then apply the appropriate number of mitigation measures listed in Appendix B to the project to reduce GHG emissions below the adopted significance level. The analysis in this plan adopts the thresholds grounded in existing mandates and their associated GHG emission reduction targets, in this case AB 32 and the City's Interim Greenhouse Gas Reduction Target. This is essentially the same approach adopted by the San Joaquin Valley APCD in its Climate Change Action Plan.

Stockton Climate Action Plan and Interim GHG Reduction Target

In February 2008, the City of Stockton became a member of the International Council for Local Environmental Initiatives (ICLEI) and began working with ICLEI to create a baseline GHG inventory that would quantify all GHG emissions for the City as a whole for the year 2005. The baseline inventory would then be used as reference point to obtain an estimated inventory of 1990 and 2020 GHG emissions for the City.

As a part of the Settlement Agreement with the Attorney General and the Sierra Club, the City agreed to develop a CAP. Since the City has not yet adopted a CAP, no formal GHG emission reduction targets have been established yet. However, because several larger residential or mixed use development projects are presently in the review stage, the City has adopted an interim GHG emission reduction target to provide guidance on appropriate levels of greenhouse gas emission reductions. The interim emission reduction target is set at 28.7%, based on an estimated 2020 business-as-usual emissions of approximately 3,000,000 metric tons and estimated 1990 emission levels of approximately 2,100,000 metric tons (see Table 2-1 in Chapter 2.0). The emissions estimate is consistent with the methodologies established by the Local Governments for Sustainability and by CARB. The

reduction percentage is consistent with the 29% reductions called for in the state's Scoping Plan, which also aims for a reduction in GHG emissions to 1990 levels by 2020.

Based on an analysis of the GHG reduction measures proposed in the Scoping Plan, City staff concluded that approximately 77% of the GHG reduction objective in the Scoping Plan would be attained through state-wide measures, such as the Low Carbon Fuel Standard described previously. The remaining 23% would be addressed through local initiatives. Table 3-2 shows the City's assessment, based on the measures in the Scoping Plan. The implications for projects seeking to meet the City's interim GHG reduction targets are discussed in the following section.

3.2 SUMMARY OF METRICS

Under CEQA, the significance of an impact is determined by comparing the identified impact to a "significance threshold." A significant impact requires mitigation; a less than significant impact requires no mitigation. Significance thresholds may be quantitative or qualitative.

Significance thresholds for GHG emissions under CEQA have not been established at the state level. However, CEQA Guidelines Section 15064.4, enacted March 2010, provides direction to lead agencies in determining the significance of impacts from GHG emissions. Section 15064.4(a) calls on lead agencies to make a good faith effort, based on available information, to "describe, calculate or estimate" the amount of GHG emissions resulting from a project. The lead agency thus has the discretion to determine, in the context of a particular project, how to quantify GHG emissions.

As mentioned previously, there are no established, widely accepted, or officially adopted quantitative thresholds of significance against which to compare quantitative assessments of GHG emissions of the BCESP. Local efforts to establish such thresholds have been based primarily on the emission reduction targets set in the state's Climate Change Scoping Plan: a reduction of approximately 28.4% from business-as-usual emissions. For purposes of this analysis, projects that meet or exceed this reduction percentage shall be considered to have a less-than-significant impact on GHG emissions and climate change as they would be consistent with state and international GHG emission reduction targets.

Table 3-3 summarizes the GHG emission reduction thresholds established by the applicable plans and regulations discussed above. Each threshold is a set percentage reduction in GHG emissions from business-as usual conditions. Since the thresholds are derived from a common source, the reduction percentages are all similar.

TABLE 3-2
SCOPING PLAN GREENHOUSE GAS REDUCTION MEASURES
AND RESPONSIBLE ENTITIES

Recommended Reduction Measures	Responsible Entity	GHG Reductions By 2020 (MMT CO2e)
Estimated Reductions from Cap-and-Trade Program and Complementary Measures		
California Light-Duty Vehicle Greenhouse Gas Standards	State	31.7
Energy Efficiency	City	26.3
Renewables Portfolio Standard	State	21.3
Low Carbon Fuel Standard	State	15
Regional Transportation-Related GHG Targets	City	5
Vehicle Efficiency Measures	State	4.5
Goods Movement	State	3.7
Million Solar Roofs	State	2.1
Medium/Heavy Duty Trucks	State	1.4
High Speed Rail	State	1
Industrial Measures (for sources covered under cap-and-trade program)	State	0.3
Additional Reductions Necessary to Achieve the Cap	State	34.4
	Subtotal	146.7
Estimated Reductions from Uncapped Sources/Sectors		
High Global Warming Potential Gas Measures	State	20.2
Sustainable Forests	City	5
Industrial Measures (for sources not covered under cap-and-trade program)	State	1.1
Recycling and Waste (landfill methane capture)	State	1
	Subtotal	27.3
Total Reductions Counted Towards 2020 Target		***174.0***

Other Recommended Measures	Responsible Entity	Estimated 2020 Reductions (MMT CO2e)
State Government Operations	State	1.0-2.0
Local Government Operations	City	TBD
Green Buildings	State	26
Recycling and Waste (mandatory commercial recycling, other measures)	City	9
Water Sector Measures	City	4.8
Methane Capture at Large Dairies	State	1
Total Other Reduction Measures		***42.8***
Total Reduction from All Measures		**216.8**
Total Reductions from State Measures (State)		166.7 (77%)
Total Reductions from Local Government Measures (City)		50.1 (23%)

TBD – to be determined
Sources: Responsible Entity determined per Exhibit A of City of Stockton memo "Adoption of Interim Community Greenhouse Gas Emission Reduction Target for the City of Stockton," dated September 1, 2009.

Source: Climate Change Scoping Plan, California Air Resources Board (2008)

3.2.1 Applicable GHG Reduction Threshold for Project

As previously discussed above, and as indicated in Table 3-3, GHG Significance Thresholds, the City has established an interim GHG reduction target of 28.7%. The City has determined that approximately 77% of the GHG reduction objective of the state's Scoping Plan would be met by state-wide measures, with the remainder to be met by local measures. Based on this, City staff has assumed that 77% of the 28.7% interim reduction target would be met by these state-wide measures, which would account for an approximately 22.1% GHG reduction in the City (0.77 x 28.7% = 22.1%). Therefore, local actions would be responsible for an approximately 6.6% GHG reduction (0.23 x 28.7% = 6.6%).

Although the reduction is a City-wide goal, this reduction would also apply to new land development. Therefore, if a project implements measures that reduce GHG emissions by 6.6% over "business as usual emissions" (emissions generated without any reduction measures applied to the project), then project GHG emissions would be considered less than significant by the City as the lead agency for CEQA purposes. A 6.6% GHG emission reduction, therefore, is the target reduction for the BCESP project.

TABLE 3-3
GHG SIGNIFICANCE THRESHOLDS

Source	Significance Thresholds (% Reduction in GHG Emissions)
CARB Climate Change Scoping Plan	28.4
APCD Climate Change Action Plan	29.0
City of Stockton Interim Target - overall	28.7
City of Stockton Interim Target – local share	6.6

3.2.2 Metrics Used in GHG Reduction Analysis

There are several metrics available for evaluating the potential significance of the GHG emissions of the BCESP. The metrics described previously consist of lists of potential GHG reduction or mitigation measures that are both quantitative and qualitative in nature. Methods for assessing the significance of GHG emissions are in the development stage and may be the subject of disagreement if not controversy. Nonetheless, the quantitative methods described above have been promulgated by public agencies and professional organizations concerned with atmospheric emissions.

Other available metrics are based on programmatic changes at the state level on generally qualitative points of comparison for evaluating the significance of a project's GHG emissions and the adequacy of its GHG reduction measures. These include:

State's *Global Climate Change Scoping Plan*
City of Stockton's *Climate Action Plan, available elements*
California Attorney General/City of Stockton Settlement Agreement
California Attorney General recommended GHG reduction measures

In the next chapter, the BCESP is evaluated using each of the quantitative metrics, as well as by a qualitative analysis. The evaluation of the BCESP using quantitative methods considers whether the project would meet established GHG reduction targets. The qualitative analysis would consider the consistency of the project with the relevant qualitative standards.

4.0 BCESP GHG REDUCTION PLAN AND CONSISTENCY ANALYSIS

This chapter evaluates the GHG reduction potential of the BCESP, with reference to the GHG reduction standards and metrics described in Chapter 3.0. This chapter begins with a brief description of the BCESP and the elements of the Specific Plan that reduce GHG emissions. Following the description, the "business as usual" emissions for the BCESP are described, then the BCESP is evaluated for its GHG reduction potential using two available quantitative systems.

Potential GHG reductions are quantified based on design features and measures contained in the BCESP. Based on the results, conclusions will be made as to whether the project meets the applicable GHG reduction threshold, which is the local share of the City's interim GHG reduction target described in Chapter 3.0.

This chapter also evaluates the consistency of the BCESP with applicable GHG reduction plans: the statewide Scoping Plan, the Stockton Climate Action Plan, and the Early Climate Protection Actions in the Attorney General's Settlement Agreement.

4.1 DESCRIPTION OF BEAR CREEK EAST SPECIFIC PLAN LAND USES

The BCESP project is located near the northeastern portion of the City of Stockton Metropolitan Area. It is presently within the unincorporated area of San Joaquin County, immediately adjacent to the City of Stockton limits. The project area is bounded on the north by Eight Mile Road, Bear Creek to the south, Union Pacific Railroad (UPRR) tracks to the east, and West Lane to the west.

The BCESP area encompasses 317.3 acres. Table 4-1 breaks down the proposed land uses within the BCESP area, along with the potential development range for each land use where applicable. The BCESP would designate 193 acres for residential uses, which would provide for development of up to 2,122 single and multi-family residential units. Low-density residential areas would consist largely of conventional single-family detached units on standard lots. Medium-density areas would consist of small lot detached or cluster-type detached homes as well as attached unit types. High-density residential areas are expected to consist primarily of attached units.

The BCESP proposes development of a series of five individual neighborhoods. They would be interconnected by the proposed circulation system and oriented around a proposed Community Park, a greenway along Bear Creek, paseos throughout the BCESP area, and other public spaces.

TABLE 4-1
BEAR CREEK EAST SPECIFIC PLAN
OVERALL LAND USE SUMMARY CHART

Proposed Land Use and General Plan Designation	Gross Acres	Units	Estimated Square Feet
Low Density Residential (LDR)	71.4	357-469	-
Low-Medium Density Residential (LMDR)	76.6	538-881	-
High-Medium Density Residential (HMDR)	31.9	415-468	
High Density Residential (HDR)	13.1	249-304	-
Commercial (C)	10.7	-	93,200
Office (O)	4.8	-	41,800
Industrial (IL)	8.9	-	95,800
Parks (CP/NP)	26.4	-	-
Open Space (OS)	29.4	-	-
Elementary School (IN)	10.0	-	-
Major Roads	34.1	-	-
Total	**317.3**	**1,557-2,122**	**230,800**

Notes:
du/ac – dwelling units per gross acre
F–R - floor-area ratio

The BCESP designates a 10.0-acre site for the future development of an elementary school by the Lodi Unified School District. School District officials indicate that the school would be a K-6 facility accommodating approximately 800 students. BCESP development would include approximately 26 acres of parks and 29 acres of open space. Included in this acreage are the Community Park, neighborhood and pocket parks, paseos, and the greenway corridor along Bear Creek.

Primary circulation through the BCESP area would be provided by extensions of Lt. Col. Mark Taylor Street and Ham Lane as minor arterials, as well as a two-lane extension of Leach Road. Neighborhood streets would consist of two-lane streets with 30 feet of paved width and an approximately 10-foot area on each side reserved for parkway strips and pedestrian circulation. Eight Mile Road and West Lane would provide circulation between the BCESP area and major destinations in the Stockton area.

The project overall would be dense enough to support the feasible operation of transit, consistent with the transit gap study that was prepared as part of the CAP process (refer to Settlement Agreement consistency analysis later in this chapter). The BCESP proposes several strategically placed bus stop locations in the Specific Plan area. Pedestrian facilities, mainly sidewalks, would be located along all proposed streets. The BCESP provides for an open space connector along the Bear Creek corridor that would, in conjunction with the adjoining community parklands, provide pedestrian and bicycle connectivity between proposed neighborhoods and arterial streets and the Community Park. In addition, the BCESP provides for development of a 12-foot paved pedestrian/bicycle path along the top of the north Bear Creek levee. The entire

development would be internally accessible by vehicles, bicycles and pedestrians and would allow similar access to adjacent neighborhoods and developments.

Water supply needs of the BCESP area would be met by the City of Stockton from its existing and approved surface and groundwater supplies. Wastewater services would be provided by existing and planned City of Stockton collection and treatment systems. Specific Plan development would include construction of a new storm drainage collection system, detention basin and pump station that would discharge to Bear Creek. Planned subdivision improvements would include installation of a non-potable water system that would be used for irrigation of proposed public parks and open space areas, streetscapes, schools and commercial landscaped areas. Electrical, gas, phone, cable and related Internet services would be extended to the Specific Plan area from existing facilities located along West Lane and Eight Mile Road, or from other utility systems in the vicinity.

4.2 BCESP "BUSINESS AS USUAL" GHG EMISSIONS

In evaluating potential GHG impacts of a project, one step is to determine the "business as usual" scenario. As defined in an ICF International memorandum to the City of Stockton, “business as usual” is a future scenario that does not include the impacts of any legislation or regulations designed to reduce GHG emissions (Held, 2010). Table 4-2 shows the projected GHG emissions from BCESP development under “business-as-usual” conditions.

For the BCESP, GHG emissions under “business-as-usual” conditions were determined primarily by using CARB’s URBEMIS 2007 (v 9.2.4) air quality computer modeling program. Most air quality districts, including the San Joaquin Valley APCD, accept URBEMIS outputs in air quality analyses for projects, and the APCD recommends URBEMIS use in its *Guide for Assessing and Mitigating Air Quality Impacts*. The URBEMIS program has been recently modified to calculate CO2 emissions. These include direct CO2 emissions from construction activities and area source operations, and indirect emissions from vehicular travel associated with the various proposed land uses.

URBEMIS bases its area and operational emission calculations on vehicle trips generated by proposed land use activities, using trip generation factors developed by the Institute of Transportation Engineers (ITE). For this emission estimate, trip generation factors provided in the traffic study for the Specific Plan by KD Anderson Transportation Engineers were used for emissions from residential land uses.

Area source indirect emissions were calculated using the General Reporting Protocol of the California Climate Action Registry. The California Climate Action Registry was established by California statute as a non-profit voluntary registry for companies and organizations with operations in the state to establish GHG emissions baselines against which any future GHG emission reduction requirements may be applied. The General Reporting Protocol assists Registry members in calculating their baseline emissions by providing formulas and emission factors, based on technical advice provided to the Registry by the State of

California. GHG emissions from solid waste were calculated using factors provided by a U.S. Environmental Protection Agency (EPA) publication on GHG emissions from landfills.

TABLE 4-2
SPECIFIC PLAN GREENHOUSE GAS EMISSIONS
BUSINESS-AS-USUAL SCENARIO

Source	Projected Emissions (metric tons CO2e/year) BCESP	SPA with Existing GP designations
Area Source Direct Emissions[1]	8,292	8,665
Area Source Indirect Emissions[2]	7,560	8,452
Electricity	*7,313*	*8,106*
Water	*247*	*346*
Mobile Source CO2 Emissions[1]	32,670	32,553
Light Industrial	*1,185*	*2,500*
Office	*831*	*N/A*
Commercial	*6,020*	*4,059*
Residential	*23,702*	*25,994*
School	*893*	*N/A*
Park	*39*	*N/A*
Mobile Source Methane and NO2 Emissions[2]	1	1
Waste Disposal Emissions[3]	1,019	1,067
Total	**49,542**	**50,738**
BCESP Construction Emissions (maximum for any year)[4]	569	

Source Notes:
[1] URBEMIS 2007 v 9.2.4 (Appendix D) and kdAnderson Transportation Engineers
[2] Based on factors in California Climate Action Registry General Reporting Protocol, Version 3.1 (2009). and Quantifying GHG Mitigation Measures, CAPCOA (2010), Appendix B.
[3] Based on factors in EIR Chapter 15.3, Solid Waste, and in Solid Waste Management and Greenhouse Gases: A Life-Cycle Assessment of Emissions and Sinks (3rd ed.), U.S. Environmental Protection Agency (2006).
[4] URBEMIS 2007 v 9.2.4 (Appendix D). Assumes maximum of 250 residential units and 80,000 square feet of commercial development, and the average square footage of office and industrial development over a 15-year construction period.

Table 4-2 also shows business-as-usual GHG emissions from the SPA under existing Stockton General Plan 2035 designations. Existing General Plan designations were used to develop the City's GHG inventory, so emissions under General Plan designations were estimated to evaluate the variance BCESP emissions would have from the inventory baseline. Under existing General Plan designations, 283.3 acres of the SPA are designated for Low Density Residential development, and 12.0 acres are designated for High-Density Residential development. In addition, 6.0 acres are designated Commercial, and 16.0 acres are designated Industrial. Based on maximum allowable development densities or floor-area ratios (FARs) for the applicable designation, development under existing General Plan designations would generate an estimated 50,738 metric tons CO2e annually. This would be approximately 2.4% more than the estimated BCESP GHG emissions. Therefore,

the BCESP would generate fewer GHG emissions than development under existing General Plan designations, which were used to develop the City's GHG inventory.

4.3 GENERAL DESCRIPTION OF BCESP DESIGN FEATURES AND OTHER APPLICABLE GHG REDUCTION MEASURES

The following BCESP features and measures are those taken directly from the BCESP as currently proposed. These design features and applicable GHG reduction measures form the basis for the assessment and analysis of the BCESP's GHG emission reductions.

Mixed Use Development

The Specific Plan proposes a mix of residential, commercial, office, industrial, educational and recreational land uses in close proximity. The intent is to allow for residents to live, work and shop in the same area, thereby reducing the VMT that they may otherwise accumulate. Based on the results of the URBEMIS run, the project would generate an estimated 197,505 VMT under "business-as-usual" conditions. Table 4-3 provides the estimated VMT generated by the BCESP by land use. Since motor vehicle traffic is a major source of GHG emissions, a reduction in VMT would reduce GHG emissions. Moreover, many residents would be within walking or bicycling distance of their place of employment, shopping or schooling, thereby providing opportunities to further reduce VMT.

TABLE 4-3
SPECIFIC PLAN VEHICLE MILES TRAVELED
BUSINESS-AS-USUAL SCENARIO

Land Use	Projected Annual VMT
Light Industrial	7,172.63
Office	5,029.51
Commercial	36,376.78
Residential	143,288.88
School	5,397.87
Park	238.85
Total	**197,504.52**

Source: URBEMIS 2007 v 9.2.4 and kdAnderson Transportation Engineers

Onsite Elementary School

The proposed project includes an elementary school that is desired by the responsible school district and which would be located close to most of the proposed residential areas. Students and their parents can walk to the school, rather than drive to it. The school

would be connected to all residential areas through sidewalks, bicycle paths and paseos, providing alternative means of transportation to motor vehicles.

Onsite Recreational Amenities

The provision of parks and bicycle paths affords residents nearby recreational opportunities without having to drive elsewhere. The Community Park potentially would offer recreational facilities such as play fields, sitting/picnicking areas, active sports and walking areas, expansive lawn areas, and forested "garden" settings. Optional facilities may include tennis courts, baseball diamonds, soccer fields, a swimming pool, or other similar uses depending on the need and available space. Neighborhoods parks would include sports fields and courts, children's playgrounds, picnic areas and walking/bicycling pathways, among other amenities. The pocket parks would have facilities such as open turf, landscaping, tot lots and small-scale recreational facilities. Walking and bicycle paths would connect parks and open space areas. These paths would encourage more walking and bicycling, thereby further reducing VMT.

Support for Transit

Figure 5.1 of the Specific Plan indicates the dedication of land for the locations of four potential bus stops. One stop is located adjacent to the proposed commercial and high-density residential area in the southwestern portion of the Specific Plan area. Another is located next to the proposed elementary school. A third is located near the proposed office and light industrial areas in the north. The fourth is located in the center, adjacent to the Community Park. This location makes the bus stop accessible for office employees and nearby medium-density residential area residents.

Each bus stop is located adjacent to land uses expected to generate a substantial volume of transit users, which would make the provision of transit service more economically feasible. Additionally, the proximity of bus stops to potential users would encourage the use of transit over that of automobiles, a primary GHG source.

As previously noted in Chapter 2.0, the transit gap study conducted as part of the City of Stockton's CAP process recommended a BRT route on West Lane in the future. BRT would provide the passenger capacity and fewer stops of a rail system with the smaller expense of a bus system. This would make this form of transit more attractive to both the RTD and passengers. West Lane, which forms the western boundary of the Specific Area, is located near proposed commercial, high- and medium-density residential, and school land uses. The combination of BRT and these land uses potentially could lead to greater transit use, which would reduce automobile trips.

Project Orientation to Transit and Bicycle Routes

Section 3 of the Specific Plan describes Neighborhood 3, which contains the commercial area and some of the proposed high-density residential development, as an extension of

the West Lane transit corridor, a new commercial hub in northeast Stockton with opportunities for transit-oriented development. As discussed above, the proposed land uses in Neighborhood 3 would accommodate public transit. Neighborhood 4, which contains the office and light industrial areas, is located along Eight Mile Road, a major transportation corridor. Therefore, Neighborhood 4 would also be appropriately located for public transit, although no such service currently runs on Eight Mile Road.

Figure 5.5 of the Specific Plan presents the bicycle and pedestrian circulation plan. The sidewalks and bike paths extend throughout the Specific Plan area, connecting the parks, open space areas and the school. It also connects the commercial, light industrial and office areas. As illustrated in Specific Plan Figure 5.6, all residential areas are within one-quarter mile of a community feature that contains a major bicycle or pedestrian facility. As previously described, the proposed bus stops are located near commercial, light industrial and office areas.

Jobs/Housing Ratio

The "jobs/housing ratio" is a concept that indicates the potential for commuter traffic based on the number of jobs and number of housing units in a given area. The ideal ratio is 1.00, in which the number of jobs and number of housing units are equivalent. A ratio significantly greater than 1.00 indicates more jobs in the area than housing units, which may mean that residents outside the area are commuting to jobs in that area. Conversely, a ratio significantly less than 1.00 means fewer jobs than housing units, which may mean that residents in the area are commuting to jobs outside the area.

A quick way to develop an estimate of the number of employees that would be generated by a project would be to use a factor of 1 employee for every 400 square feet of commercial, office and industrial development. This is a commonly used factor in employment estimates by economic development consultants (Walter Kieser, pers. comm.). Based on the projected square footage in Table 4-1, the potential maximum number of employees that Specific Plan development would generate would be 844. When this estimate is divided by the number of housing units, the jobs/housing ratio ranges from 0.40 to 0.73. According to the project applicant, the target number of housing units is 1,853. This would result in a jobs/housing ratio of 0.46. This would indicate that future development would lead to a net commute by residents to other places of employment. However, it should be noted that the Specific Plan includes features designed to encourage less motor vehicle travel and more use of alternative modes of transportation, as described above.

Landscape Guidelines

Section 10 of the Specific Plan sets forth design guidelines for residential, non-residential and park development. Included in this section are guidelines for landscapes of streets and parking lots. The general guidelines for streetscapes encourage shading, canopies and "sustainable" major tree planting, thereby reducing "heat islands." Streets would have trees

planted on both sides, spaced so as to accommodate one tree per lot or one tree per 35 lineal feet, whichever scenario results in a greater number of trees.

Parking lots will have trees planted within them at a minimum ratio of one tree for every five parking spaces. Tree planting would provide additional shade, particularly for residences, and reduce the heat-island effect. In turn, this would reduce air conditioning use in summer, thereby reducing demand for electricity and the need for power plants to generate it. Since most power plants rely on fossil fuels to generate electricity, reduced electrical demand would lead to fewer GHG emissions.

Water Usage

Development under the Specific Plan would lead to an increased usage of potable water. However, the Specific Plan contains two elements that would mitigate the additional water demand. First, as described in the Utilities subsection, the Specific Plan proposes the installation of a non-potable water system that would be used for irrigation of proposed public parks and open space areas, streetscapes, schools and commercial landscaped areas. Second, the proposed design guidelines encourage the use of plants that are drought-resistant, low irrigation and "sustainable." Both elements would lead to the consumption of less potable water than would otherwise be the case.

Building Construction

Building construction would be in accordance with the “green” building requirements of the City of Stockton. As described in Chapter 2.0, the City has adopted a Green Building Ordinance that requires compliance with CALGREEN. CALGREEN requires that every new building constructed in California to meet energy efficiency, water consumption, and construction waste and material standards.

4.4 QUANTIFIED ASSESSMENT OF GHG REDUCTION POTENTIAL OF THE BCESP

The following section provides a quantified assessment of GHG reduction resulting from design features incorporated as part of the BCESP and from additional GHG reduction measures described in the BCESP, based on the quantification systems described below.

There are two quantification systems applicable to the BCESP – the San Joaquin Valley APCD and the California Air Pollution Control Officers Association (CAPCOA). Both quantification systems are based on lists of mitigation measures mentioned in Chapter 3.0. Taking a conservative approach, both quantification systems have been used in analyzing GHG reductions associated with the project. A discussion of these systems is provided below.

San Joaquin Valley APCD System

In August 2008, the San Joaquin Valley APCD adopted its Climate Change Action Plan. The Climate Change Action Plan directed the APCD's Air Pollution Control Officer to develop guidance to assist APCD staff, Valley businesses, land use agencies and other permitting agencies in addressing GHG emissions as part of the CEQA process. A product of this direction to provide CEQA guidance is the *Final Staff Report – Climate Change Action Plan: Addressing GHG Emissions Impacts*, presented to the APCD Board in December 2009. For projects requiring EIRs, Appendix J of the *Final Staff Report* provides a table of GHG emission reduction measures, along with a point value that corresponds to a percentage decrease in GHG emissions when available.

California Air Pollution Control Officers Association (CAPCOA) System

CAPCOA published its paper *CEQA and Climate Change* in January 2008. The purpose of the paper is to provide a resource for public agencies as they establish procedures for reviewing GHG emissions from projects subject to CEQA. *CEQA and Climate Change* also describes and evaluates available mitigation measures based on their economic technological and logistical feasibility, and the effectiveness of these measures. Appendix B of *CEQA and Climate Change* lists the mitigation measures that were evaluated, along with a percentage decrease in GHG emissions when available.

APCD and CAPCOA Systems Applied to BCESP

This analysis was part of a process in which proposed GHG reduction design features and additional GHG reduction measures were identified in the BCESP and compared with those features and measures listed in the APCD and CAPCOA systems. The total reduction value of each feature and measure was identified, based on values contained in the APCD and CAPCOA quantification systems. The values were then totaled and compared with the local share of the City's interim GHG reduction target, which is the threshold used to indicate if the BCESP is in compliance with the City's GHG reduction policies.

The analysis also identifies GHG reduction measures that are part of the BCESP that are not quantified under both the APCD and CAPCOA systems. This does not mean that these measures do not reduce GHG emissions or have no value in reducing them. Rather, these measures currently do not have a reduction value assigned to them by either the APCD or CAPCOA.

One reason a measure may not be quantified is that certain measures work in relation with other measures as part of a comprehensive approach. This comprehensive approach makes it more difficult to assess reductions attributable to each individual measure (CAPCOA, 2008). Nevertheless, these measures are listed in this chapter, as they are considered to have value in reducing GHG emissions.

4.4.1 BCESP GHG Reduction Based on Design Features per APCD System

As described previously in this chapter, the BCESP contains several design features similar to those identified in the APCD *Final Staff Report* that are expected to reduce GHG emissions associated with the project. Table 4-4 identifies the GHG reduction measures already incorporated into the Specific Plan design, along with the Specific Plan section in which the measure is described in more detail, the type of reduction measure (transportation, commercial, residential) and their emission reduction values based on the APCD system.

TABLE 4-4
APCD GHG REDUCTION MEASURES
INCORPORATED IN BCESP DESIGN

Measure	Specific Plan Section	Measure Type	Point Value
Proximity to bike path/bike lanes – within ½ mile of Class I or II bike lane	6.5, 6.6	T	0.625
Pedestrian network connecting to planned external streets and pedestrian facilities	2.3, 6.5, 6.6	T	0.500
Bus shelter for planned transit service	6.5	T	0.250
Traffic calming (bike lanes, center islands, roundabouts, speed humps, etc.), 25% streets, 25% intersections	6.4	T	0.250
Orientation toward existing transit, bikeway or pedestrian corridor	2.3, 6.5, 6.6	C/R	0.500
Orientation toward planned transit, bikeway or pedestrian corridor	2.3, 6.5, 6.6	C/R	0.250
Residential density with planned bus rapid transit	4.3	R	3.250
Suburban mixed-use	2.3, 4.3	C/R	3.000
Street grid	6.2.1	R	1.000
Non-roof surfaces–provide shade (within 5 years) or use light-colored/high-albedo materials (reflectance of at least 0.3) and/or open grid pavement (at least 30%) for parking lots, walkways, etc.	9.6	C	1.000
Total GHG Reduction Points/% Reduction Value			**10.625**

Notes: T – Transportation, C – Commercial, R – Residential

As indicated in Table 4-4, the BCESP contains features that would reduce GHG emissions by over 10.5%, based on the APCD's quantification system. This would exceed the City's interim target local share threshold of 6.6%. Thus, the BCESP's design features would be sufficient to reduce GHG emissions generated by the project to a level considered less than significant from a CEQA perspective, and consistent with applicable state and local GHG reduction plans.

4.4.2 BCESP GHG Reduction Based on Additional Measures per APCD System

The BCESP also identifies various GHG reduction measures similar to those identified in the APCD *Final Staff Report* that could be implemented in conjunction with the design features. Table 4-5 identifies these additional GHG reduction measures, along with the type of reduction measure and their emission reduction values based on the APCD system.

The table also includes measures in the BCESP that are identified in the APCD system, but do not have quantified reduction values assigned to them. This does not mean that these measures do not reduce GHG emissions or have no value in reducing them. Rather, these measures currently do not have a reduction value assigned to them by the APCD. The type of reduction measure is not identified for these non-quantified measures.

The additional GHG reduction measures in the BCESP would generate a GHG reduction of approximately 9.75%, based on the APCD's quantification system. Combined with the design features listed in Table 4-4, the project would yield a 20.375% reduction in GHG emissions. This amount would significantly exceed the 6.6% local share of the 28.7% interim greenhouse gas reduction target set by the City of Stockton.

TABLE 4-5
APCD GHG REDUCTION MEASURES
INCORPORATED IN BCESP MEASURES

Measures	Measure Type	Point Value
Quantified Measures		
Bike parking, non-residential projects	T	0.625
Bike parking at multi-unit residential	T	0.625
Pedestrian barriers minimized	T	1.000
Bus shelter for existing transit service	T	0.500
Provide minimum amount of parking required by code	T	3.000
Pedestrian pathway through parking	T	0.500
Off-street parking, near mixed-use/high-density land uses	T	1.500
Energy Star roof materials	C/R	0.500
Exceed Title 24 energy conservation requirements by 20%	C/R	1.000
Solar orientation – design residences to take advantage of sun and to maximize shade	C/R	0.500
Total Point Value – Quantified Measures		**9.750**
Non-Quantified Measures		
Bike lane street design		--
Bike and pedestrian design		--
School siting		--
Open space		--
Land use density – 9+ dwelling units/acre along bus routes and at bus stops		--

TABLE 4-5
APCD GHG REDUCTION MEASURES
INCORPORATED IN BCESP MEASURES

Measures	Measure Type	Point Value
Solar design – developers to offer buyers optional packages that incorporate passive solar design and solar heaters		--
Vehicle idling – limit idling time for commercial vehicles, including delivery and construction vehicles		--
Tree planting		--
Local farmer's market as allowable use in the Community Park		--
Community gardens as allowable use in the Community Park		--
Developers shall install energy-efficient appliances and equipment		--
Developers shall offer buyers optional packages that incorporate photovoltaic roofing tiles		--
Natural gas stoves/no wood-burning stoves in residential buildings		--

Notes: T – Transportation, C – Commercial, R – Residential

4.4.3 BCESP GHG Reduction Based on Design Features per CAPCOA System

As described previously in this chapter, the BCESP contains several design features similar to those identified in the CAPCOA document *CEQA and Climate Change* that are expected to reduce GHG emissions associated with the project. Table 4-6 lists the CAPCOA GHG reduction measures already incorporated in the BCESP design features, along with the Specific Plan section in which the measure is indicated and the type of reduction measure. Many of the measures evaluated by CAPCOA are the same as those incorporated by the San Joaquin Valley APCD in its *Final Staff Report*. However, some of the measures have different values, based on the sources cited and the specificity of the measure.

As indicated in Table 4-6, the BCESP contains features that would reduce GHG emissions by approximately 14.5%, based on CAPCOA's quantification system. This would exceed the City's interim target local share threshold of 6.6%. Thus, the BCESP's design features would be sufficient to reduce GHG emissions generated by the project to a level considered less than significant from a CEQA perspective, and consistent with applicable state and local GHG reduction plans.

4.4.4 BCESP GHG Reduction Based on Additional Measures per CAPCOA System

The BCESP also identifies various GHG reduction measures similar to those identified in *CEQA and Climate Change* that could be implemented in conjunction with the design features. Table 4-7 identifies these additional GHG reduction measures, along with the type of reduction measure and their emission reduction values based on the CAPCOA system. The table also includes measures in the BCESP that are identified in the CAPCOA system, but do not have quantified reduction values assigned to them. The type of reduction measure is not identified for these non-quantified measures.

TABLE 4-6
CAPCOA GHG REDUCTION MEASURES
INCORPORATED IN BCESP DESIGN

Measure	Specific Plan Section	Measure Type	Percent Decrease
Proximity to bike path/bike lanes	6.5, 6.6	T	0.625
Pedestrian network connecting to planned external streets and pedestrian facilities	2.3, 6.5, 6.6	T	1.000
Bus shelter for existing/planned transit service	6.5	T	1.000
Traffic calming	6.4	T	0.250
Office/mixed use density	2.3, 6.5, 6.6	C	0.100
Orientation toward existing/planned transit, bikeway or pedestrian corridor	2.3, 6.5, 6.6	C/R	0.500
Residential density (sufficient density for new residential development to support use of public transit)	4.3	R	6.000
Street grid	6.2.1	R	1.000
Suburban mixed-use	2.3, 4.3	C/R	3.000
Non-roof surfaces	9.6	C	1.000
	Total Percent Decrease		**14.475**

Notes: T – Transportation, C – Commercial, R – Residential

The GHG reduction of additional measures in the BCESP would generate a GHG reduction of approximately 11.75%. Combined with the additional measures listed in Table 4-6, the project would yield a 26.225% reduction in GHG emissions. This amount would significantly exceed the 6.6% local share of the City's 28.7% GHG emission reduction target.

4.5 BCESP CONSISTENCY WITH APPLICABLE STATE AND CITY GHG REDUCTION PLANS AND AGREEMENTS

4.5.1 BCESP Consistency with California Global Climate Change Scoping Plan

As noted in Chapter 2.0, the California Global Climate Change Scoping Plan includes 16 recommended measures that would produce estimated GHG reductions of 174 MMT CO2e by 2020 and achieve the State's goal of reducing GHG emissions to 1990 levels by 2020. Of these 16 measures recommended by the Scoping Plan, only one measure is directly related to land development: Regional Transportation-Related GHG Targets. The Scoping Plan relies on SB 375 to cause long-term changes in land use patterns that would result in GHG reductions. As discussed in Chapter 2.0, CARB has established "placeholder" GHG reduction targets for SJCOG, which will begin a process for developing a strategy that implements these targets. The BCESP, however, embodies many of the characteristics likely to be favored under this Scoping Plan measure, including

mixed-use development, proximity to existing and future transit, and pedestrian accessibility.

TABLE 4-7
CAPCOA GHG REDUCTION MEASURES
INCORPORATED IN BCESP MEASURES

Measure	Measure Type	Percent Decrease
Quantified Measures		
Bike parking, non-residential projects	T	0.625
Bike parking at multi-unit residential	T	0.625
Pedestrian barriers minimized	T	1.000
Minimum parking required by code	T	6.000
Pedestrian pathway through parking	T	0.500
Off-street parking, near mixed-use/high-density land uses	T	1.000
Energy Star roof materials	C/R	0.500
Exceed Title 24 energy conservation requirements by 20%	C/R	1.000
Solar orientation	C/R	0.500
Total Percent Decrease – Quantified Measures		**11.750**
Non-Quantified Measures		
Local farmer's market as allowable use in the Community Park		--
Community gardens as allowable use in the Community Park		--
Developers shall install energy-efficient appliances and equipment		--
Landscaping – project landscaping shall use drought-resistant native trees, trees with low emissions and high carbon sequestration potential.		--
Natural gas stoves/no wood-burning stoves in residential buildings		--
Developers shall offer buyers optional packages that incorporate use of solar water heaters		--
Electric yard equipment compatibility – provide electrical outlets at residential building exterior areas		--
Shading mechanisms for windows, porches, patio and walkway overhangs		--
Ceiling/whole-house fans installed in residential buildings		--
Programmable thermostats installed in residential buildings		--
Passive heating and cooling systems installed in residential buildings		--
Day lighting systems (e.g., skylights, light shelves, interior transom windows) installed in residential buildings		--
Low water-use appliances, such as low-flow shower heads and toilets, installed in residential buildings		--

Notes: T – Transportation, C – Commercial, R – Residential

Six "Other Recommended Measures" are set forth in the Scoping Plan, and of these one is relevant to the project: Green Buildings. The State's green building strategy involves State-led efforts to encourage or require adherence to green building standards across the economy. The California Green Building Code (CALGREEN) has been adopted by the state and will become mandatory in 2011. The City of Stockton had adopted CALGREEN in August 2010 as part of its Green Building Ordinance, and future development on the

BCESP site must comply with CALGREEN requirements. In addition, a proposed BCESP GHG reduction measure would offer residences with optional solar energy facilities, which would be consistent with the Million Solar Roofs program, a Scoping Plan recommended measure. As a result, the BCESP will be consistent with this element of the Scoping Plan.

4.5.2 BCESP Consistency with City of Stockton Climate Action Plan

The City of Stockton is in the process of preparing a CAP for consideration by the City Council. The City has adopted an interim GHG reduction target, as discussed previously in this chapter. Potential GHG reduction measures that could be included in the BCESP would produce sufficient GHG reduction to exceed the local share of the City's interim target. The Settlement Agreement also includes a provision that the City consider adopting a green building ordinance. The City has adopted such an ordinance, and the BCESP would be required to comply with all of its provisions.

Otherwise, CAP policy direction has not been established and is not expected in the immediate future. Anticipating the time required for CAP preparation, the Settlement Agreement includes Section 9 Early Climate Protection Actions, which applies to the consideration of major development projects during the CAP preparation process. Consistency of the BCESP with the Early Climate Protection Actions is discussed below. The BCESP includes no plan or provision that would impede the CAP preparation process or prevent adoption of the CAP.

4.5.3 BCESP Consistency with Early Climate Protection Actions, Section 9 of City's Settlement Agreement with California Attorney General

Section 9 of the City of Stockton's Settlement Agreement with the California Attorney General and the Sierra Club includes Early Climate Protection Actions, which apply to the consideration of major development projects until formal adoption of the CAP. Section 9(a) requires that the City staff take the steps identified in the following numbered items; this section provides the analysis of consistency with the Section 9 requirements. Based on the following analysis, the BCESP is consistent with the relevant provisions of the Early Climate Protection Actions.

Some of the analyses cannot be fully accomplished, either because a certain component of the Early Climate Protections Actions has not been completed or there is no quantitative basis for the analysis. For example, a proportionate share of providing transit and/or BRT to the BCESP area cannot be determined until the overall costs have been established and new development's share of these costs have been defined. Similarly, other than the project's location within the existing urbanized area, a project's contribution to downtown Stockton development cannot be defined until a system for such contributions is developed. It is anticipated that the project will be conditioned to participate in this and other required CAP programs, if and when they are adopted.

Early Climate Protection Actions

1. *Formulate proposed measures necessary for the project to meet any applicable GHG reduction targets.*

The State of California has identified targets for stabilization of global climate change in AB 32. As discussed above, the BCESP is consistent with all of the applicable Scoping Plan's recommended measures. The City of Stockton has adopted an interim greenhouse gas reduction target of 28.7% from estimated 2020 "business-as-usual" emission levels, which is the reduction needed to achieve a citywide reduction of GHG emissions to 1990 levels by 2020. The interim target is consistent with the state's Scoping Plan objective. As discussed above, the proposed project, with recommended GHG reduction measures, would exceed the local share of the City's interim target.

2. *Assess the project's VMT and formulate proposed measures that would reduce the project's VMT.*

Vehicle miles traveled (VMT) is a measure of the total miles traveled by all vehicles in a specified area for a specified time. Over a large geographic area, VMT represents the amount of travel associated with the existing or future land uses in the area. As discussed by CARB early drafts of the adopted Scoping Plan, VMT is an indicator of transportation-related GHG emissions, and VMT is one important leg of a "three-legged stool" required to reduce these emissions; the other two elements are increased vehicle efficiency and low-carbon fuels, both of which are addressed on a statewide level by Scoping Plan recommendations. No specific VMT targets have been established by the City or the regional agency (SJCOG) to date. As discussed above, measures that would reduce VMT will be developed in conjunction with the SB 375 planning process.

The project has been compared to the quantitative and qualitative GHG reduction systems evaluated in this chapter. The project is mixed-use and is inherently VMT-reducing, and all potential VMT reduction measures have been incorporated into the project. The BCESP proposes mixed-use development, with on-site shopping, employment opportunities and recreational amenities. Also, measures have been added to allow the project to exceed the available GHG reduction scoring systems.

Based on the results of the URBEMIS run, the project would generate an estimated 197,505 VMT under "business-as-usual" condition. If the SPA were developed under existing Stockton General Plan 2035 designations to the maximum level allowed, land uses would generate approximately 198,012 VMT, according to URBEMIS. Therefore, the BCESP would represent a slight decrease in VMT from development under General Plan designations, which were used in developing the City's GHG inventory.

3. *Assess the transit, especially BRT, needs of the project and identify the project's proposed fair share of the cost of meeting such needs.*

The San Joaquin Regional Transit District (SJRTD) operates existing fixed-route transit service in the Stockton area. According to a recently released transit gap study (see below), SJRTD carries approximately four million passengers annually. Transit needs are met

operationally by the SJRTD through route modification and expansion; the developer's contribution has been to provide the necessary infrastructure, including bus turnouts, bus shelters and other related improvements as required by conditions of subdivision or shopping area approvals. New development projects are required to pay their fair share of the cost of needed transportation and transit facilities and to ensure that essential facilities and services be installed prior to or concurrent with new development, or phased as specified in the applicable environmental documents.

The BCESP vicinity is presently served by existing fixed-route transit, although at a relatively low level. SJRTD routes would need to be modified to serve proposed land uses, in particular proposed commercial and employment areas and schools that would be important transit destinations. As noted in Chapter 16.0 of the BCESP, Transportation, provision of needed public transit facilities in conjunction with new development in those portions of the SPA with relatively concentrated demand is required. These areas would include the commercial and high-density residential area at West Lane, the proposed office and industrial areas along Eight Mile Road, and the elementary school. The project EIR will require transit improvements as mitigation for increased transit demand.

The Settlement Agreement requires that the City of Stockton complete a transit gap study and submit for adoption a transit program by October 2010. The SJRTD and City of Stockton have completed the transit gap study, and no transit gaps specific to the BCESP area were identified. As noted in Chapter 2.0, the City has not adopted a transit program based on the transit gap study.

Funding sources for transit costs are identified in the SJRTD's *Short Range Transit Plan* and *BRT Master Plan*. These funding sources, while including potential indirect contributions from local traffic impact fees in street improvements, and direct contributions from the Regional Transportation Impact Fee (RTIF), do not anticipate direct funding from development projects. As provided in the BCESP, development within the SPA would be liable for the provision of transit improvements in consultation with the SJRTD. The project would also be liable for any contribution to BRT costs that are adopted by the City in its CAP. BRT service is discussed in the analysis for Early Climate Protection Action No. 4 below.

At this time, there is no available means for quantifying costs of transit expansion or a BRT system that would not otherwise be met by identified funding sources. In the event that costs are quantified and a basis for proportionate cost sharing is adopted, it is assumed development within the BCESP would be liable for payment of those fair share costs. Chapter 12 of the BCESP discusses policies related to infrastructure development that would be implemented, including transportation facilities. These policies establish landowners, developers and builders as bearing the primary responsibility for funding all infrastructure and facilities; require funding mechanisms that equalize costs among individual properties; and allow the City to establish financing mechanisms for funding infrastructure improvements in the SPA.

4. *Assess whether project densities support transit, and, if not, identify proposed increases in project density that would support transit service, including BRT service.*

The Stockton General Plan 2035 includes a number of policies that are applicable to and supportive of the expansion of transit and BRT service. BRT operations include distinct vehicles, more regular and frequent stops at stations, specialized fare vending machines, and use of traffic signal priority devices. A BRT route (called Metro Express) is currently established along the Pacific Avenue corridor between Hammer Lane and downtown Stockton. Construction is underway for a second BRT route along Airport Way between downtown Stockton and the airport, while a third BRT route along Hammer Lane is scheduled for implementation by 2013. The General Plan 2035 "Future Transit Network" map identifies potential BRT routes and facilities, based on a BRT Master Plan for San Joaquin County completed by SJRTD. Both Eight Mile Road and West Lane have been designated as potential BRT routes; however, there are no plans to establish BRT service on either street in the immediate future.

Research cited in the Stockton General Plan EIR indicates that transit and ridership are related to population size and employment, the proximity of homes and workplaces to transit services, and the quality of transit service in comparison to other travel options. The research indicates that the feasibility of various transit modes is related to the following residential densities (City of Stockton 2006):

Local Bus Service	4 units/acre
Express Bus Service/Bus Rapid Transit	7 units/acre
Light Rail	9 units/acre

The BCESP proposes housing units of varying densities, from single-family houses to apartments. Based on information in Table 4-1, the residential density in the BCESP would range from 8.1 to 11.0 units/acre. The lower densities would support local bus service, while the higher densities would also support express bus/BRT service. For the maximum number of residential units (2,122), the residential density would be approximately 11.0 units/acre, which would support express bus/BRT service as well as local bus service. In addition, the higher-density residential designations have been strategically placed along the potential BRT routes identified as Eight Mile Road and West Lane, in order to enhance accessibility and possible use of mass transit.

5. *Assess the project's estimated energy consumption, and measures to ensure that the project conserves energy and uses energy efficiently.*

Energy conservation and use of alternative or renewable energy sources can directly reduce GHG emissions by reducing the combustion of natural gas and fossil fuels to generate electricity. Energy use for building lighting, water heating, space heating and cooling can be reduced through passive and active solar architecture, solar water heating, cool roofs and paving, shading of paved areas, increased ventilation, and energy efficient HVAC equipment, controls, lighting and appliances.

Potential residential energy usage was estimated with the California Energy Commission's *California Statewide Residential Appliance Saturation Study* (KEMA-XENERGY, 2004). Calculations are based on the proposed maximum number of residential units (2,122), with 304 of these units being multifamily. The average annual electrical and gas usage for a single-family residence in the PG&E service area is 8,117 kWh and 489 therms, respectively. For multifamily units in the PG&E service area, annual average electrical and gas usage is 3,451 kWh and 224 therms, respectively. Based on these factors, BCESP residential uses would consume an average of approximately 15,806,000 kWh of electricity and 957,000 therms of natural gas annually. Total annual project energy consumption by residential and commercial land uses would amount to approximately 18,718,000 kWh of electricity and 988,000 therms of natural gas.

Potential energy usage by proposed commercial uses in the BCESP was estimated with the California Energy Commission's *California Commercial End-Use Survey* (Itron, 2006). Based on proposed square footage and statewide annual electrical use intensities per square foot for retail (14.06 kilowatt-hours or kWh) and office (17.7 kWh) uses, commercial uses would consume an average of approximately 2,912,000 kWh of electricity annually. Based on statewide annual natural gas use intensities per square foot for retail (0.22 therms) and office (0.05 therms) uses, commercial uses would consume an average of approximately 31,000 therms of natural gas annually. Energy consumption of industrial land uses cannot be determined, as the specific industrial activities that will be in the SPA are unknown.

As discussed previously, the City of Stockton has adopted a Green Building Ordinance that requires new development to be constructed in accordance with CALGREEN, which includes provisions to increase energy efficiency and reduce energy use. Future construction in the SPA would be subject to CALGREEN standards. These measures would reduce energy consumption and increase energy efficiency.

6. *Formulate proposed measures to ensure that the project is consistent with a balance of growth between land within Greater Downtown Stockton and existing City limits, and land outside the existing City limits.*

The parties to the Settlement Agreement "recognize that development on the urban fringe of the City must be carefully balanced with accompanying infill development to be consistent with the State mandate of reducing GHG emissions, since unbalanced development will cause increased driving and increased motor vehicle GHG emissions" (City of Stockton et al., 2008). The BCESP is located in an unincorporated portion of San Joaquin County on the edge of the Stockton city limits; therefore, the project is subject to discussion concerning a "balance of growth." It should be noted that the BCESP site has been designated for urban development since at least 1990, when it was identified for such development in the City's 1990 General Plan. In addition, areas to the west and south of the project site are proposed for development.

Section 6 of the Settlement Agreement states that City staff, within 12 months of the effective date of the agreement, shall submit for City Council adoption policies and programs that require at least 4,400 units of Stockton's new housing growth to be located in Greater Downtown Stockton (defined as generally bordered by Harding Way, Charter

Way (MLK), Pershing Avenue and Wilson Way). An additional 14,000 of Stockton's new housing units shall be located within the City limits at the time of the effective date of the Settlement Agreement.

While the Settlement Agreement addresses the concern of a "balance of growth," standards for balance have not been defined. It is anticipated that such standards and the measures that can be used to ensure balance will be one of the results of CAP preparation and adoption. Without the availability of standards and options for action, the BCESP can make no direct contribution to maintaining the balance sought by the Settlement Agreement. It is expected that future development under the BCESP would be required to comply with the applicable requirements of the adopted CAP. Chapter 5.0 of the GGRPA states that the BCESP may need to be amended to incorporate any requirements and measures mandated by the CAP once adopted by the City.

7. *Formulate proposed measures to ensure that City services and infrastructure are in place or will be in place prior to the issuance of new entitlements for the project or will be available at the time of development.*

Existing City policies and procedures will ensure that all City services are in place at the time of development; no additional measures are needed. City services, including police protection and fire protection, will be extended to the SPA immediately upon its annexation into the City. Annexation of the SPA will also be required to occur before any urban development pursuant to the BCESP can proceed, in which the initial development would extend water and wastewater backbone infrastructure to the SPA.

City service providers have been and will continue to be involved in the review of the BCESP and the drafting of mitigation measures and conditions of approval. Among other things, and as documented in this EIR, this involvement has resulted in the planned location for proposed streets and parks. The existing City project review process will ensure that the BCESP reflects the needs of these providers. Similarly, City staff review, CEQA review and the detailed technical studies prepared for the project EIR would ensure that the project's infrastructure needs are met at the time of development. The timing of these improvements would be established by EIR mitigation measures or will be established in conditions of approval for subdivision maps and other entitlements.

8. *Formulate proposed measures to ensure that the project is configured to allow the entire development to be internally accessible by all modes of transportation.*

Existing City plans and standards will ensure that adequate transportation access is provided to all portions of the BCESP. Street standards will ensure that adequate transit access is available on collector and arterial streets. Street improvements will be required to conform to Stockton's bicycle plan, including the provision of bike lanes, signage or other improvements as required. The BCESP includes specific provisions for pedestrians in the form of sidewalks as well as pedestrian walks that allow more direct access between proposed residential neighborhoods and planned commercial and employment areas.

5.0 CONCLUSION

5.1 CONCLUSIONS OF ANALYSIS

As presented in Chapter 4.0, an analysis was conducted to determine the GHG reduction value of BCESP design features and measures, based on values assigned to similar reduction measures in the APCD and CAPCOA quantification systems. The ultimate objective of this process was to have the BCESP contain features and measures that would reduce GHG emissions from an established "business as usual" level to one that meets the local share of the City's interim GHG reduction target of 28.7%, which is 6.6%. Based on results shown in Table 4-4 through 4-7, the various design features and measures in the BCESP, for which reduction values have been identified, would reduce GHG emissions from business-as-usual levels by 20.375% according to the APCD's quantification system, and by 26.225% according to CAPCOA's quantification system. Under both systems, the GHG reduction percentage would exceed the local portion of the City's interim target (6.6%).

However, these are raw percentages, which do not take into consideration the GHG sources and their proportionate contributions to total GHG emissions. As shown in Table 2-1 in Chapter 2.0, transportation sources accounted for approximately 64% of all GHG emissions in the City of Stockton in 2005. Commercial/industrial sources and residential sources accounted for smaller shares. Because transportation sources account for a larger share of GHG emissions, GHG reduction measures (typically assigned a percent reduction value) related to transportation would reduce overall GHG emissions by a greater amount, other things being equal. By contrast, reduction measures applicable to commercial/industrial or residential sources would account for a smaller overall GHG emission reduction, due to the smaller shares these sources contribute to overall GHG emissions.

To provide a more accurate estimate of GHG reduction value, the GHG emission reduction measures were weighted according to the emission source – mainly transportation, commercial and residential. The sources were identified in Tables 4-4 through 4-7 in Chapter 4.0. The weighting applied was based on each sector's contribution to total City of Stockton GHG emissions, as determined by the City's preliminary emissions inventory for 2020. As with 2005, transportation sources are responsible for most of the GHG emissions in 2020. Since some measures apply to both commercial and residential land uses, these sectors were combined. The results of this weighting are shown in Table 5-1 below.

TABLE 5-1
WEIGHTED GHG EMISSION REDUCTION MEASURE VALUES
FOR BEAR CREEK EAST SPECIFIC PLAN

	Reduction Values	
	APCD	**CAPCOA**
Unweighted Reduction Values		
Transportation	9.375	12.625
Commercial/Residential	11.000	13.600
Total Unweighted Values	**20.375**	**26.225**
Weighted Reduction Values		
Transportation (64.1%)	6.009	8.093
Commercial/Residential (33.0%)	3.630	4.488
Total Weighted Values	**9.639**	**12.581**

Notes: Refer to Table 9.5-1 for source of information regarding proportionate sector shares of GHG emissions in 2020. Refer to Tables 9.5-4 and 9.5-5 for classification of measures by sector.

Sources: CAPCOA (2008); SJVAPCD (2009)

As shown in Table 5-1, when weighting is applied, the various incorporated or proposed features of the BCESP for which reduction values have been assigned would reduce GHG emissions from business-as-usual levels by approximately 9.6% according to the APCD's quantification system, and by approximately 12.6% according to CAPCOA's quantification system. Under both systems with weighting, the GHG reduction percentage still would exceed the 6.6% local portion of the City's interim target.

In summary, application of the BCESP's proposed design features and GHG reduction measures would exceed the local share of the City of Stockton's interim GHG reduction target. Therefore, the project would be considered to have a less than significant impact on global climate change from a CEQA perspective, and would be consistent with applicable state and local GHG reduction plans, based on the quantification systems described herein.

5.2 FUTURE CONSISTENCY WITH OTHER GHG REDUCTION PLANS AND MEASURES

This GGRPA evaluated the ability of the BCESP to meet the applicable GHG reduction standards. This evaluation was based on measures currently available at this time and identified as feasible. As more attention is devoted to GHG reduction, new technologies and design and construction methods will likely develop that may be more feasible and more effective than the measures now incorporated in the BCESP. It is not the intention of the BCESP to foreclose the use of these new technologies and methods should they become available. Therefore, the BCESP may be amended to substitute new measures in place of those currently incorporated, provided that the new measures demonstrate that 1) they are GHG-reducing measures, and 2) the percentage of reduction can be quantified.

Climate Change Scoping Plan

As previously noted, the proposed BCESP GHG reduction measures are sufficient to reach the local share of the City of Stockton's interim GHG reduction target of 28.7%. The local share emission reduction target is based on additional reductions in potential 2020 GHG emissions that would accrue from the State of California's efforts to implement the Scoping Plan. The Scoping Plan includes a range of GHG reduction measures that would apply to existing and new industrial, energy, commercial and residential development in the state as a whole, and to on- and off-road travel associated with those uses.

A few of the Scoping Plan's GHG reduction measures overlap or are redundant with GHG reduction measures included in the BCESP. The BCESP's potentially redundant measures would include "smart growth" elements of the project that would tend to implement the Regional Transportation-Related GHG Targets recommended measure in the Scoping Plan. This measure, which is linked to implementation of SB 375, is expected to result in a statewide GHG reduction of 5 MMT CO2e, or about 0.8% of the predicted business as usual GHG emissions for the state as a whole, and about 3% of the 28.4% of GHG emissions reductions needed statewide to reach the 2020 GHG reduction goal.

The remaining 97% of the quantified GHG reduction measures identified in the Scoping Plan would produce results in parallel with and independent of the BCESP, adding to the potential GHG emission reductions that are identified in this GGRPA. These measures include GHG emission reductions to be achieved by a proposed cap-and-trade system and complementary measures listed in the Scoping Plan, the complete contents of which are shown in Table 3-1 of this document. GHG reductions associated with the cap-and-trade system and complementary measures include:

- Greenhouse gas standards for new cars and light trucks and other vehicle efficiency measures
- Aerodynamic and hybridization programs for medium and heavy trucks
- Low-carbon fuel requirements
- In-port ship electrification and other goods movement efficiency
- Energy generation efficiency, including combined heat and power generation, solar water heating; expanded solar photovoltaic; increased renewable energy portfolio requirements on utilities
- New building and appliance efficiency programs, outside of the state's green building strategies, discussed below
- New requirements on industrial and refinery operations

These measures together would generate approximately 146.7 MMT CO2e in GHG reductions, or approximately 84% of the reduction to be achieved by 2020. An additional 27.3 MMT CO2e, or approximately 16% of the 2020 GHG reduction, would be achieved

by reducing emissions of gases with high global warming potential, sustainable forest practices, other industrial measures, and improvements in landfill methane capture (see Table 3-1 of this document).

The above-described Scoping Plan GHG emission reductions are projected to generate all of the GHG emission reductions needed statewide by 2020, even subtracting the SB 375 measures. Altogether, the Scoping Plan's quantified GHG reduction measures are predicted to result in 169 MMT CO2e of GHG emission reductions, which is 28.4% of the predicted 2020 GHG emissions and 100% of the statewide reduction sought by the Scoping Plan.

In addition to these measures, the Scoping Plan also identified six other recommended measures that may generate an additional 43 MMT CO2e or more GHG emission reductions. The largest contributor to these, identified as "Green Buildings," would contribute 26 MMT CO2e, an additional 4% reduction in predicted 2020 GHG emissions. The project would contribute to this reduction by requiring the incorporation of the City's green building requirements, including compliance with CALGREEN. Outside this contribution, other GHG reduction measures would result in an additional 2.9% reduction in predicted 2020 GHG emissions statewide.

In summary, the California Climate Change Scoping Plan is predicted to result in a total of 31.2% reduction in predicted 2020 business as usual greenhouse gas reductions. This would consist of contributions of 169 MMT CO2e (28.35%) from the Plan's Recommended Reduction Measures (excluding the Regional Transportation-Related GHG Targets) and 17 MMT CO2E (2.9%) from Other Recommended Measures. These reductions would occur independent of the GHG reduction measures included in the BCESP.

City of Stockton Climate Action Plan

As noted elsewhere in this GGRPA, the City of Stockton is in the process of preparing a CAP. At this time, the transit gap study has been completed, as has a preliminary GHG inventory. No draft CAP has yet been prepared.

It is possible that the CAP, when adopted, may set more stringent GHG reduction goals than those set by the interim target, which is 28.7%. It is also possible that the CAP may contain requirements currently unaddressed in the BCESP, or that are more stringent than BCESP measures. Given the number of GHG reduction measures that would be part of the BCESP, it is expected that development in the BCESP area would meet the GHG emission reduction target set by the CAP, if the CAP does not substantially differ from the current interim target. However, should the CAP reduction target exceed the current interim target, the BCESP will need to be reviewed and additional GHG reduction measures may need to be adopted if necessary to achieve the adopted CAP target. In addition, the BCESP may need to be amended to incorporate any requirements and measures mandated by the CAP once adopted by the City. In the event that a CAP measure and a BCESP measure conflict, the more stringent measure shall apply.

One issue that has been raised is the relative burden of GHG emission reductions between existing development and new development. It is possible that new development would bear more of the burden of reducing emissions than existing development, since new development could more readily incorporate emission reduction measures and could be made more consistent with future land use, transportation and other plans designed to reduce GHG emissions. Based on this assumption, future development would be required to reduce GHG emissions above the City's 6.6% local contribution.

At the moment, there is no indication of what the CAP will require of both new and existing development regarding GHG emission reductions. It is probable that some CAP measures would be targeted towards existing development – for example, more aggressive weather stripping and other home improvements that reduce energy consumption. The extent of such measures applicable to existing development is not known at this time. However, as previously noted, the BCESP may be amended to incorporate any requirements and measures mandated by the CAP. Should the CAP require greater emission reductions from the BCESP than currently required, it is expected that the BCESP would be amended as necessary to meet CAP requirements.

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Appendix E

Air Toxics Health Risk Studies

Technical Note

Evaluation of Health Risks from Existing Train Traffic near Proposed Bear Creek East and West Development Projects

Stockton, California

August 18, 2007

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APPENDIX
Data for Train Locomotive Emissions
Copy of Dispersion Model Output

1.0 INTRODUCTION

Air Permitting Specialists (APS) has been retained by In-Site Environmental, Inc. to evaluate health risks associated with emissions from two rail lines located in Stockton, California. Specifically, this analysis focuses on the impacts of train emissions on two proposed housing development projects planned in the vicinity of the rail lines. The two development projects are:

- Bear Creek East Development Project
- Bear Creek West Development Project

The location of the proposed projects relative to the train tracks is shown in Figure 1. This study focuses on the following Union Pacific train track segments:

1. Western track between Marlette Road and Hammer Lane

2. Eastern track between Morse Road and Mosher Slough

Would locating the two housing development projects near the train tracks expose future residents to significant health risks? In the present study, health risk refers to cancer risk from exposure to diesel particulate matter (PM). A risk above 10 cancers per million is considered significant.

The risk calculation is based on lifetime exposure to diesel PM. Estimates of cancer risk require knowledge of exposure to diesel PM over a person's lifetime. Under Guidelines established by the California Office of Environmental Health Hazard Assessment (OEHHA), lifetime exposure is defined as exposure over 70 years.

To estimate risk, a three-step procedure was used:

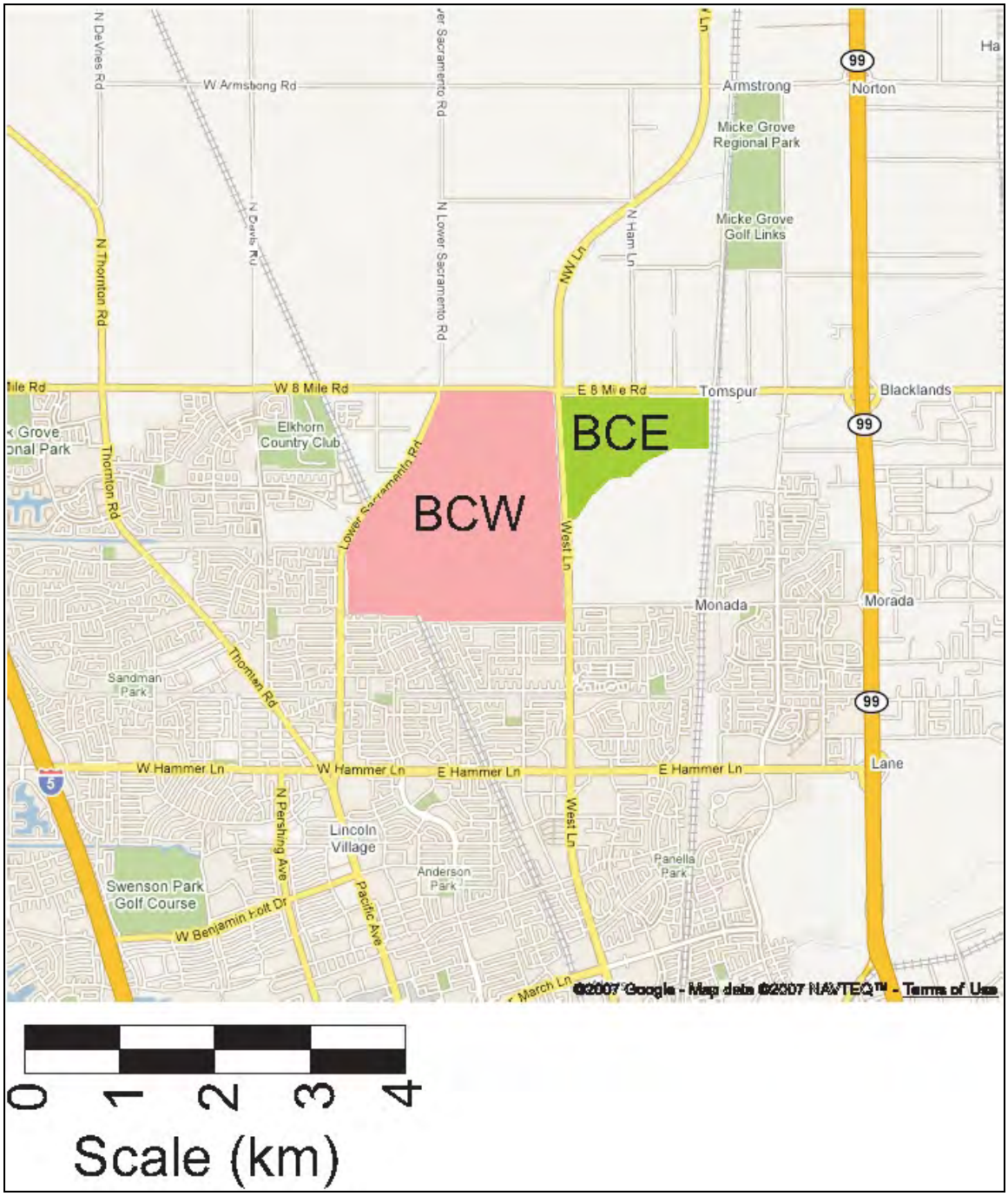
1. Calculate the emission rates of diesel particulate from trains by estimating the annual train volume along each track and the emission rate from each diesel particulate matter (PM) locomotive;

2. Estimate the atmospheric dispersion pattern of diesel particulate in the vicinity of the train tracks;

3. Estimate health risks associated with exposure to diesel particulate. A health risk is considered significant if cancer risk exceeds 10 in a million.

This technical note consists of 4 main sections. Immediately follow this introduction, Section 2 describes the methodology for the estimate of annual diesel particulate emissions from the trains. Section 3 describes the procedure for estimating health risks associated with the diesel particulate emissions. The results of the risk analysis are presented in Section 4. Technical data and model output are provided in the appendix.

Figure 1
Location Map



[MSW1]

2.0 ESTIMATE OF EMISSIONS

Diesel PM is a component of the exhaust released from the train locomotives. The emission rate of diesel PM is related to annual train volume (trains/year), number of train locomotives per train and the size (horsepower) of each locomotive. These are discussed in the next two subsections.

2.1 Estimate of Annual Train Traffic

It is estimated that 28 trains per day will traverse each rail line for an annual estimate of 10,220 trains per year per track. Each train was assumed to be powered by 3 diesel locomotives. The estimated number of trains per day is based on the highest value reported among the measured passby event data documented in JC Brennan's noise studies for the Bear Creek East and West projects and the Federal Railroad Administration Office of Safety Analysis's Highway-Rail Crossing Inventory File record for a crossing near the applicable segment of the eastern track. The locomotive per train estimate is based on through-train operational data published in Sierra Research's Toxic Air Contaminant Emissions Inventory and Air Dispersion Modeling Report for the Stockton Rail Yard, Stockton, CA (January 2007).

2.2 Estimates of Emissions

As noted earlier, each train is assumed to be powered by 3 diesel locomotives. Each locomotive is assumed to be similar to the General Motors Model GP-50, equipped with a 3,866 hp engine operating at notch setting No. 4. Emissions data were taken from the Union Pacific's Roseville Rail Yard Study, Appendix B, Table B-1. A copy of this Table is provided in the Appendix.

This emissions data, however, represents current emissions and does not take into account expected decline in emissions per locomotive due to proposed federal regulations. These regulations would limit emissions from diesel locomotives by 95+ percent over current emissions. In the current analysis, we assumed that there would be a 90% reduction in diesel emissions as compared to current emissions.

Annual emissions are estimated to be 225 and 307 lbs/year for the Western and Eastern tracks respectively. Emissions from the Eastern tracks are higher since this segment is slightly longer (2.2 vs 1.6 miles). Detailed calculations are shown in Tables 1 to 4.

3.0 EXPOSURE ASSESSMENT

Cancer risk is related to the exposure concentration, for example in grams/cubic meter, of diesel PM. Exposure can occur via inhalation, ingestion and dermal pathways. For this study, we limit our analysis to the inhalation pathway.

The ambient air concentration of diesel PM at a given location depends on its distance from the rail lines, the emission rate of diesel PM and the local wind pattern. An air dispersion model that incorporates these variables and parameters was used to calculate the concentration of diesel PM in the vicinity of the train tracks.

The EPA model, known as the Industrial Source Complex Model (ISCST3 Version 02035), was used to estimate the concentration of diesel PM. Train emissions were modeled as two line sources. The ISCST3 model simulates the emissions from each line source as a series of elevated volume sources. The release height of each volume source was estimated to be 10 meters (32.8 ft).

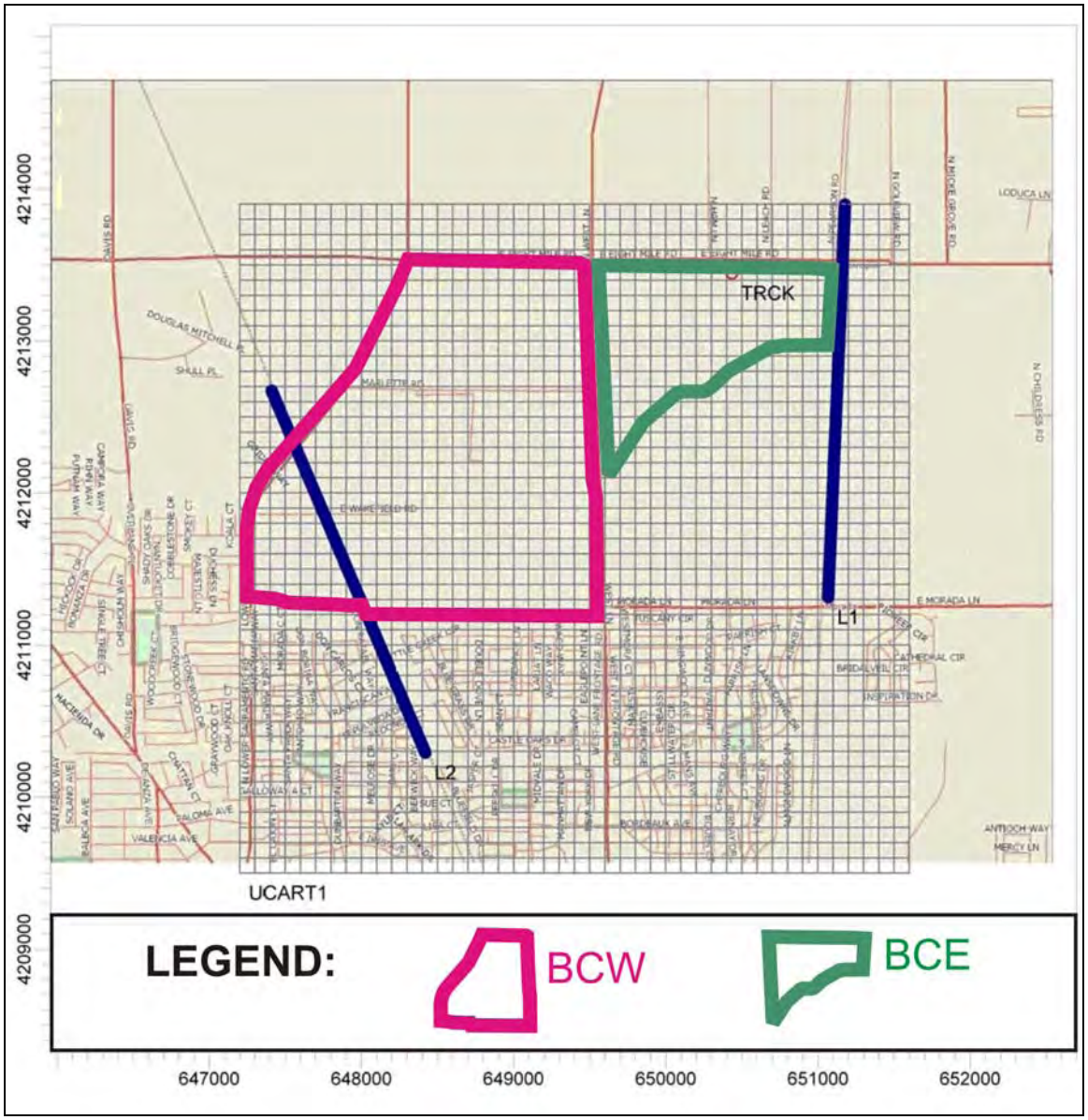
Concentrations were calculated every 100 meters in rectangular grid extending 4,500 meters in each direction. A total of 2,025 receptors were used. The modeling grid is shown in Figure 2.

Other inputs used to model the diesel PM are as follows:

Dispersion Model	ISCST3 Version 02035
Emission Source	Elevated Line Source
Release Height	10 meter
Rural/Urban Mode	Rural
Grid Resolution	100 meters (328 feet)
Grid Extent	4.5 km x 4.5 km (2.8 miles x 2.8 miles)
Number of Receptors	2,025
Regulatory Option	This option was used
Meteorological Data	1 year of hourly 1976 from Stockton
	Total of 8,760 hours modeled
Averaging Time	Annual

The model was run using hourly wind data for 1 year and the highest annual concentration was calculated at each of the 2,025 receptors. These concentrations were used to calculate cancer risk. This is discussed in the next section.

Figure 2
Layout of Modeling Grid
Showing Location of Individual Trucks
(Coordinates are in UTMs)



4.0 RISK CHARACTERIZATION

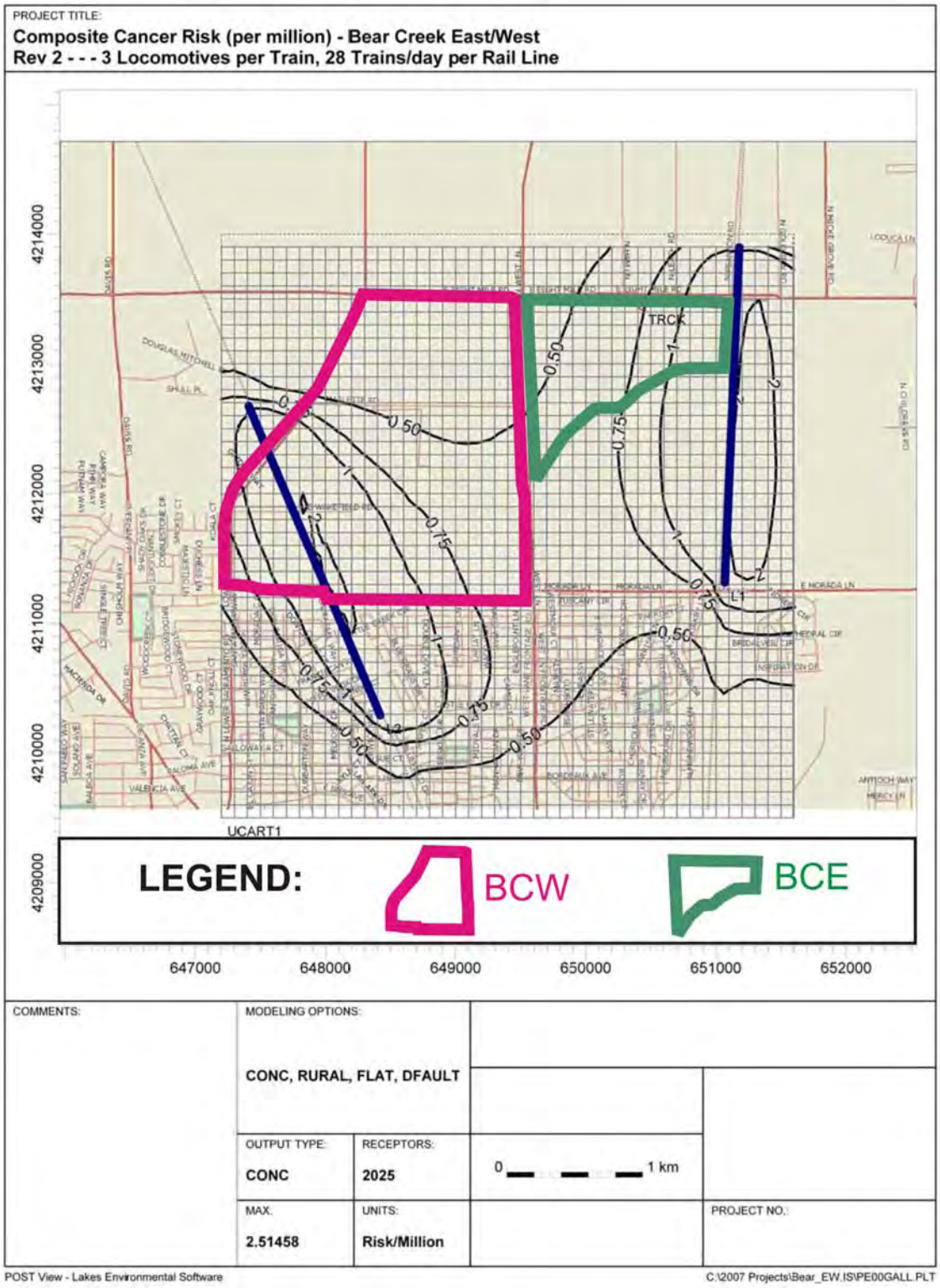
Risk characterization refers to the process of quantifying the risk associated with a given exposure to a toxic air pollutant. In the present study, we have focused on the inhalation pathway as the primary route of exposure. Therefore, risk characterization involves using the atmospheric concentration of diesel PM with toxicity data (diesel PM unit risk factor) to establish 70 year risk. The recommended unit risk factor (by CARB) is 3.0×10^{-04}. For example, if the concentration of diesel PM at a given receptor is 0.5 micrograms per cubic meter, then the 70 year cancer risk associated with this concentration is:

70 Year Risk = 0.5 micrograms/cubic meter x 3.0×10^{-4} (micrograms/cubic meter)$^{-1}$

= 0.15×10^{-4} cancers or 15 cancers per million.

The results of calculating the risk are shown in Figure 3. The numbers on the contours indicate cancer risk per million. The innermost contour represents 2 cancers/million (red color). The results show that risk would not exceed 10 cancers/million for any locations within the Bear Creek Development projects.

Figure 3
Spatial Variation of Cancer Risk *(per million)*



5.0 CONCLUSIONS

Maximum lifetime cancer risk associated with train traffic along two rail lines was estimated. On the basis of diesel emissions and local dispersion patterns, the maximum cancer risk associated the train operations is estimated to be between 2 and 3 cancers per million. The maximum risk occurs 200 meters East of the Eastern train tracks. Risk to future residents of the Bear Creek East and Bear Creek West developments would not be significant.

6.0 REFERENCES

EPA (1995) "User's Guide for the Industrial Source Complex (ISC) Models", Environmental Protection Agency, Research Triangle Park, NC.

Federal Railroad Administration Office of Safety Analysis, Highway-Rail Crossing Inventory File (http://safetydata.fra.dot.gov/OfficeofSafety/Downloads/Default.asp?page=downloaddbf.asp)

Turner, D.B., "Workbook of Atmospheric Dispersion Estimates", 2nd Edition, Lewis Publishers, Boca Raton, FL.

APPENDIX

Table 1
Calculation of Train Emissions from Western Rail Line

Trains/Locomotive Emissions West Side		
Locomotive Model	GP-50	
Notch Setting	4	
Locomotive Speed	50	*mph*
	22.5	*m/sec*
Horse Power	1353	*hp*
Emission Factor (Ref. 1)	0.23	*grams/hp-hr*
Emission Rate (per train)	311.19	*grams/hr*
	0.086	*grams/sec*
Length of Track	2,607	*meters*
	1.62E+00	*miles*
Time required to traverse tracks	115.9	*sec*
Emissions/train trip	10.02	*grams/train trip*

Ref. 1 Table B-1 Diesel PM Emission Factors for Locomotives. Appendix B, Roseville Railyard Study (CARB)

Annual Emissions		
Trains/day	28	*(From Noise Study)*
Emissions/Train	10.02	*grams/train*
Emissions/day	280	*grams/day*
Emissions/year	102,361	*grams/yr*
	225	*lbs/yr*
	3.25E-03	*grams/sec*

Table 2
Calculation of Modeling Parameters for Western Rail Line

Annual Emissions East Track			
Overall Train Emissions Per Track	3.25E-03	*grams/sec (Input to ISC - Results in ug/cu m)*	
Diesel Risk Factor	3.00E-04		
Emission Rate	9.74E-07	*g/sec*	*Input to ISC - Results in 70 Year Risk*
	9.74E-01	*g/sec*	*Input to ISC - Results in 70 Year Risk/million*
Exposure Adjustment	1.0000		
Expected Diesel PM Emission Reduction in Future	90%		*Over 70 years*
Annual Average Emission Rate per Train	9.74E-02	*g/sec*	Input to ISC - Results in 70 Year Risk/million

File:Bear_Creek_East
Sheet:Risk West

Table 3
Calculation of Emissions from Eastern Rail Line

Trains/Locomotive Emissions East Side		
Locomotive Model	GP-50	
Notch Setting	4	
Locomotive Speed	50	*mph*
	22.5	*m/sec*
Horse Power	1353	*hp*
Emission Factor (Ref. 1)	0.23	*grams/hp-hr*
Emission Rate (per train)	311.19	*grams/hr*
	0.086	*grams/sec*
Length of Track	3,548	*meters*
	2.20E+00	*miles*
Time required to traverse tracks	157.7	*sec*
Emissions/train trip	13.63	*grams/train trip*

Ref. 1 Table B-1 Diesel PM Emission Factors for Locomotives. Appendix B, Roseville Railyard Study (CARB)

Annual Emissions		
Trains/day	28	*(From Noise Study)*
Emissions/Train	13.63	*grams/train*
Emissions/day	382	*grams/day*
Emissions/year	139,308	*grams/yr*
	307	*lbs/yr*
	4.42E-03	*grams/sec*

Table 4
Calculation of Modeling Parameters for Eastern Rail Line

Annual Emissions East Track			
Overall Train Emissions Per Track	4.42E-03	*grams/sec (Input to ISC - Results in ug/cu m)*	
Diesel Risk Factor	3.00E-04		
Emission Rate	1.33E-06	*g/sec*	*Input to ISC - Results in 70 Year Risk*
	1.33E+00	*g/sec*	*Input to ISC - Results in 70 Year Risk/million*
Exposure Adjustment	1.0000		
Expected Diesel PM Emission Reduction in Future	90%		*Over 70 years*
Annual Average Emission Rate per Train	1.33E-01	*g/sec*	Input to ISC - Results in 70 Year Risk/million

File:Bear_Creek_East
Sheet:Risk East

Table B-1: Diesel PM Emission Factors for Locomotives

Model Number	Engine Type		Idle	Dynamic Brake*	Throttle Notches								DATA REFERENCES
					1	2	3	4	5	6	7	8	
Switchers (1)	EMD 12-645E	g/bhp/hr	2.07	0.80	0.32	0.33	0.31	0.24	0.23	0.28	0.25	0.28	EPA RSD APPENDIX B, 12/17/97
		hp	15	70	72	233	440	669	885	1109	1372	1586	
		g/hr	31	56	23	76	138	159	201	308	345	448	SWITCHERS
GP-60	EMD 16-710G3A	g/bhp/hr	3.18	4.09	0.25	0.31	0.30	0.23	0.21	0.25	0.21	0.23	EPA Locomotive Emissions Regulation
		hp	5.00	23.00	198.00	430.00	975.00	1351.00	1817.00	2637.00	3496.00	4035.00	RSD, Appendix B, 12/17/97
		g/hr	15.90	94.07	49.50	133.30	292.50	310.73	381.57	659.25	734.16	928.05	LINE-HAUL LOCOMOTIVE
SD-70	EMD 16-710G3B	g/bhp/hr	1.67	2.41	0.26	0.23	0.24	0.20	0.19	0.21	0.24	0.25	EMISSIONS MEASUREMENTS -
Table 14, BN# 9457, avg Part #3 (SD70MAC)		hp	10.80	13.90	202.00	435.00	978.00	1514.00	2003.00	2876.00	3640.00	4187.00	LOCOMOTIVES BY STEVEN G. FRITZ
		g/hr	18.00	33.50	52.12	99.62	229.83	298.26	388.58	603.96	880.88	1030.00	FINAL REPORT AUGUST 1995
GP-40 (3)	EMD 16-645-E3	g/bhp/hr	2.82	1.16	0.34	0.34	0.33	0.25	0.23	0.28	0.24	0.26	EPA RSD APPENDIX B
		hp	17	69	105	395	686	1034	1461	1971	2661	3159	LINE-HAUL LOCOMOTIVE
		g/hr	47.94	80.04	35.7	134.3	226.38	258.5	336.03	551.88	638.64	821.34	EMD 16-645-E3
GP-50	EMD 16-645F3B	g/bhp/hr	2.89	1.78	0.25	0.30	0.30	0.23	0.21	0.24	0.21	0.24	EPA RSD APPENDIX B
		hp	9	36	205	475	1005	1353	1876	2766	3454	3866	LINE-HAUL LOCOMOTIVE
		g/hr	26.01	64.08	51.25	142.5	301.5	311.19	393.96	663.84	725.34	927.84	
GP-38 (4)	EMD 16-645E	g/bhp/hr	2.53	0.88	0.32	0.33	0.32	0.24	0.23	0.28	0.26	0.29	EPA RSD APPENDIX B
		hp	15	82	98	333	589	871	1161	1465	1810	2124	LINE-HAUL LOCOMOTIVE
		g/hr	38.00	72.00	31.00	110.00	186.00	212.00	267.00	417.00	463.00	608.00	
GE Dash 9	GE 7 FDL, 16 cylinde	g/bhp/hr											RECEIVED FROM GENERAL
		hp											ELECTRIC (Cert data)
		g/hr	45.872	47.641	59.3804	115.0184	232.4322	253.4752	430.6692	596.216	671.6898	643.2664	Tier 0 DASH 9 (BNSF 5419) & AC 4400
GE Dash 8	GE 7 FDL, 12 or 16 cylinder	g/bhp/hr	2.48	1.63	0.45	0.32	0.31	0.21	0.16	0.14	0.14	0.15	RECEIVED FROM GENERAL
		hp	14.9	90.5	191.2	416.2	940.2	1396	2048.4	2668	3352.9	4100.6	ELECTRIC (Cert data)
		g/hr	36.952	147.515	86.04	133.184	291.462	293.16	327.744	373.52	469.406	615.09	DASH 8 MFI TIER 0
GE Dash 7	GE 7 FDL, 12 cylinde	g/bhp/hr	9.12	5.32	0.67	0.67	0.35	0.45	0.24	0.18	0.18	0.18	EPA RSD APPENDIX B
		hp	25.00	117.00	150.00	300.00	700.00	1050.00	1550.00	2050.00	2600.00	3000.00	LINE-HAUL LOCOMOTIVE
		g/hr	228.00	622.44	100.50	201.00	245.00	472.50	372.00	369.00	468.00	540.00	
C60-A	GE HDL	g/bhp/hr											RECEIVED FROM GENERAL
		hp											ELECTRIC (Cert data)
		g/hr	67.8019	147.869	108.765	168.545	337.9375	305.4352	500.4864	604.6515	713.461	1063.981	TIER 0 AC6000 UP 7555
SD-90MACH	EMD 16V265H	g/bhp/hr											RECEIVED FROM GENERAL MOTORS
		hp											Emissions test data
		g/hr	61.05	108.50	50.10	99.06	255.85	423.70	561.60	329.28	258.15	933.60	EMD

Locomotives Groups
(1) Includes GP15-1, SW1500, MP15, MP15-AC
(2) Includes SD70, SD75, SD70M & SD70MAC
(3) Includes GP40, GP40-2, SD40-2, SD45-2, GP45, P42DC, F40PH
(4) Includes GP38-2, GP38-2L, GP39-2, GP39-2L, GP38-3L, SD38-2
(5) Includes C44-9, C44-9W, C44-AC, C44AC/60AC
(6) Includes B32-8, C39-8, B39-8, B40-8, C40-8, C41-8
(7) Includes B23-7, C30-7, C36-7, B30-7, B36-7, U36B

```
                                           ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 **Intermediate Terrain Processing is Selected
 **Model Is Setup For Calculation of Average CONCentration Values.

   --  SCAVENGING/DEPOSITION LOGIC --
 **Model Uses NO DRY DEPLETION.  DDPLETE =  F
 **Model Uses NO WET DEPLETION.  WDPLETE =  F
 **NO WET SCAVENGING Data Provided.
 **NO GAS DRY DEPOSITION Data Provided.
 **Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations
 **Model Uses RURAL Dispersion.

 **Model Uses Regulatory DEFAULT Options:
           1. Final Plume Rise.
           2. Stack-tip Downwash.
           3. Buoyancy-induced Dispersion.
           4. Use Calms Processing Routine.
           5. Not Use Missing Data Processing Routine.
           6. Default Wind Profile Exponents.
           7. Default Vertical Potential Temperature Gradients.
           8. "Upper Bound" Values for Supersquat Buildings.
           9. No Exponential Decay for RURAL Mode

 **Model Assumes Receptors on FLAT Terrain.
 **Model Assumes No FLAGPOLE Receptor Heights.
 **Model Calculates PERIOD Averages Only
 **This Run Includes:   521 Sources);      1 Source Group(s); and    2025 Receptor(s)
 **The Model Assumes A Pollutant Type of:  DIESELPM
 **Model Set To Continue RUNning After the Setup Testing.
 **Output Options Selected:
         Model Outputs Tables of PERIOD Averages by Receptor
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Anem. Hgt. (m) =    10.00 ;    Decay Coef. =    0.000     ;    Rot. Angle =     0.0
                  Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =     1.7 MB of RAM.

 **Input Runstream File:          Bear_EW.INP
 **Output Print File:             Bear_EW.OUT
```

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
TRCK	0	0.00000E+00	650435.0	4213444.0	0.0	10.00	400.00	7.00	0.50	NO	

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
L0001065	0	0.20380E-02	651067.7	4211314.5	0.0	10.00	4.64	2.33	
L0001066	0	0.20380E-02	651068.1	4211324.5	0.0	10.00	4.64	2.33	
L0001067	0	0.20380E-02	651068.5	4211334.5	0.0	10.00	4.64	2.33	
L0001068	0	0.20380E-02	651068.9	4211344.5	0.0	10.00	4.64	2.33	
L0001069	0	0.20380E-02	651069.4	4211354.5	0.0	10.00	4.64	2.33	
L0001070	0	0.20380E-02	651069.8	4211364.5	0.0	10.00	4.64	2.33	
L0001071	0	0.20380E-02	651070.3	4211374.5	0.0	10.00	4.64	2.33	
L0001072	0	0.20380E-02	651070.7	4211384.5	0.0	10.00	4.64	2.33	
L0001073	0	0.20380E-02	651071.1	4211394.5	0.0	10.00	4.64	2.33	
L0001074	0	0.20380E-02	651071.5	4211404.5	0.0	10.00	4.64	2.33	
L0001075	0	0.20380E-02	651071.9	4211414.0	0.0	10.00	4.64	2.33	
L0001076	0	0.20380E-02	651072.4	4211424.0	0.0	10.00	4.64	2.33	
L0001077	0	0.20380E-02	651072.8	4211434.0	0.0	10.00	4.64	2.33	
L0001078	0	0.20380E-02	651073.3	4211444.0	0.0	10.00	4.64	2.33	
L0001079	0	0.20380E-02	651073.7	4211454.0	0.0	10.00	4.64	2.33	
L0001080	0	0.20380E-02	651074.1	4211464.0	0.0	10.00	4.64	2.33	
L0001081	0	0.20380E-02	651074.5	4211474.0	0.0	10.00	4.64	2.33	
L0001082	0	0.20380E-02	651074.9	4211484.0	0.0	10.00	4.64	2.33	
L0001083	0	0.20380E-02	651075.4	4211494.0	0.0	10.00	4.64	2.33	
L0001084	0	0.20380E-02	651075.8	4211504.0	0.0	10.00	4.64	2.33	
L0001085	0	0.20380E-02	651076.3	4211514.0	0.0	10.00	4.64	2.33	
L0001086	0	0.20380E-02	651076.7	4211524.0	0.0	10.00	4.64	2.33	
L0001087	0	0.20380E-02	651077.1	4211534.0	0.0	10.00	4.64	2.33	
L0001088	0	0.20380E-02	651077.5	4211544.0	0.0	10.00	4.64	2.33	
L0001089	0	0.20380E-02	651077.9	4211554.0	0.0	10.00	4.64	2.33	
L0001090	0	0.20380E-02	651078.4	4211564.0	0.0	10.00	4.64	2.33	
L0001091	0	0.20380E-02	651078.8	4211574.0	0.0	10.00	4.64	2.33	
L0001092	0	0.20380E-02	651079.3	4211584.0	0.0	10.00	4.64	2.33	
L0001093	0	0.20380E-02	651079.7	4211593.5	0.0	10.00	4.64	2.33	
L0001094	0	0.20380E-02	651080.1	4211603.5	0.0	10.00	4.64	2.33	
L0001095	0	0.20380E-02	651080.5	4211613.5	0.0	10.00	4.64	2.33	
L0001096	0	0.20380E-02	651080.9	4211623.5	0.0	10.00	4.64	2.33	
L0001097	0	0.20380E-02	651081.4	4211633.5	0.0	10.00	4.64	2.33	
L0001098	0	0.20380E-02	651081.8	4211643.5	0.0	10.00	4.64	2.33	
L0001099	0	0.20380E-02	651082.3	4211653.5	0.0	10.00	4.64	2.33	
L0001100	0	0.20380E-02	651082.7	4211663.5	0.0	10.00	4.64	2.33	
L0001101	0	0.20380E-02	651083.1	4211673.5	0.0	10.00	4.64	2.33	
L0001102	0	0.20380E-02	651083.5	4211683.5	0.0	10.00	4.64	2.33	
L0001103	0	0.20380E-02	651083.9	4211693.5	0.0	10.00	4.64	2.33	
L0001104	0	0.20380E-02	651084.4	4211703.5	0.0	10.00	4.64	2.33	

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
L0001805	0	0.14960E-02	647562.0	4212314.5	0.0	10.00	4.64	2.33	
L0001806	0	0.14960E-02	647558.1	4212323.5	0.0	10.00	4.64	2.33	
L0001807	0	0.14960E-02	647554.2	4212332.5	0.0	10.00	4.64	2.33	
L0001808	0	0.14960E-02	647550.3	4212342.0	0.0	10.00	4.64	2.33	
L0001809	0	0.14960E-02	647546.4	4212351.0	0.0	10.00	4.64	2.33	
L0001810	0	0.14960E-02	647542.5	4212360.0	0.0	10.00	4.64	2.33	
L0001811	0	0.14960E-02	647538.6	4212369.5	0.0	10.00	4.64	2.33	
L0001812	0	0.14960E-02	647534.7	4212378.5	0.0	10.00	4.64	2.33	
L0001813	0	0.14960E-02	647530.8	4212388.0	0.0	10.00	4.64	2.33	
L0001814	0	0.14960E-02	647526.9	4212397.0	0.0	10.00	4.64	2.33	
L0001815	0	0.14960E-02	647523.0	4212406.0	0.0	10.00	4.64	2.33	
L0001816	0	0.14960E-02	647519.1	4212415.5	0.0	10.00	4.64	2.33	
L0001817	0	0.14960E-02	647515.2	4212424.5	0.0	10.00	4.64	2.33	
L0001818	0	0.14960E-02	647511.3	4212433.5	0.0	10.00	4.64	2.33	
L0001819	0	0.14960E-02	647507.4	4212443.0	0.0	10.00	4.64	2.33	
L0001820	0	0.14960E-02	647503.5	4212452.0	0.0	10.00	4.64	2.33	
L0001821	0	0.14960E-02	647499.6	4212461.5	0.0	10.00	4.64	2.33	
L0001822	0	0.14960E-02	647495.7	4212470.5	0.0	10.00	4.64	2.33	
L0001823	0	0.14960E-02	647491.8	4212479.5	0.0	10.00	4.64	2.33	
L0001824	0	0.14960E-02	647487.9	4212489.0	0.0	10.00	4.64	2.33	
L0001825	0	0.14960E-02	647484.0	4212498.0	0.0	10.00	4.64	2.33	
L0001826	0	0.14960E-02	647480.1	4212507.5	0.0	10.00	4.64	2.33	
L0001827	0	0.14960E-02	647476.2	4212516.5	0.0	10.00	4.64	2.33	
L0001828	0	0.14960E-02	647472.3	4212525.5	0.0	10.00	4.64	2.33	
L0001829	0	0.14960E-02	647468.4	4212535.0	0.0	10.00	4.64	2.33	
L0001830	0	0.14960E-02	647464.5	4212544.0	0.0	10.00	4.64	2.33	
L0001831	0	0.14960E-02	647460.6	4212553.0	0.0	10.00	4.64	2.33	
L0001832	0	0.14960E-02	647456.7	4212562.5	0.0	10.00	4.64	2.33	
L0001833	0	0.14960E-02	647452.8	4212571.5	0.0	10.00	4.64	2.33	
L0001834	0	0.14960E-02	647448.9	4212581.0	0.0	10.00	4.64	2.33	
L0001835	0	0.14960E-02	647445.0	4212590.0	0.0	10.00	4.64	2.33	
L0001836	0	0.14960E-02	647441.1	4212599.0	0.0	10.00	4.64	2.33	
L0001837	0	0.14960E-02	647437.2	4212608.5	0.0	10.00	4.64	2.33	
L0001838	0	0.14960E-02	647433.3	4212617.5	0.0	10.00	4.64	2.33	
L0001839	0	0.14960E-02	647429.4	4212626.5	0.0	10.00	4.64	2.33	
L0001840	0	0.14960E-02	647425.5	4212636.0	0.0	10.00	4.64	2.33	
L0001841	0	0.14960E-02	647421.6	4212645.0	0.0	10.00	4.64	2.33	
L0001842	0	0.14960E-02	647417.7	4212654.5	0.0	10.00	4.64	2.33	
L0001843	0	0.14960E-02	647413.8	4212663.5	0.0	10.00	4.64	2.33	
L0001844	0	0.14960E-02	647409.9	4212672.5	0.0	10.00	4.64	2.33	

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
ALL	TRCK , L0001065, L0001066, L0001067, L0001068, L0001069, L0001070, L0001071, L0001072, L0001073, L0001074, L0001075, L0001076, L0001077, L0001078, L0001079, L0001080, L0001081, L0001082, L0001083, L0001084, L0001085, L0001086, L0001087, L0001088, L0001089, L0001090, L0001091, L0001092, L0001093, L0001094, L0001095, L0001096, L0001097, L0001098, L0001099, L0001100, L0001101, L0001102, L0001103, L0001104, L0001105, L0001106, L0001107, L0001108, L0001109, L0001110, L0001111, L0001112, L0001113, L0001114, L0001115, L0001116, L0001117, L0001118, L0001119, L0001120, L0001121, L0001122, L0001123, L0001124, L0001125, L0001126, L0001127, L0001128, L0001129, L0001130, L0001131, L0001132, L0001133, L0001134, L0001135, L0001136, L0001137, L0001138, L0001139, L0001140, L0001141, L0001142, L0001143, L0001144, L0001145, L0001146, L0001147, L0001148, L0001149, L0001150, L0001151, L0001152, L0001153, L0001154, L0001155, L0001156, L0001157, L0001158, L0001159, L0001160, L0001161, L0001162, L0001163, L0001164, L0001165, L0001166, L0001167, L0001168, L0001169, L0001170, L0001171, L0001172, L0001173, L0001174, L0001175, L0001176, L0001177, L0001178, L0001179, L0001180, L0001181, L0001182, L0001183, L0001184, L0001185, L0001186, L0001187, L0001188, L0001189, L0001190, L0001191, L0001192, L0001193, L0001194, L0001195, L0001196, L0001197, L0001198, L0001199, L0001200, L0001201, L0001202, L0001203, L0001204, L0001205, L0001206, L0001207, L0001208, L0001209, L0001210, L0001211, L0001212, L0001213, L0001214, L0001215, L0001216, L0001217, L0001218, L0001219, L0001220, L0001221, L0001222, L0001223, L0001224, L0001225, L0001226, L0001227, L0001228, L0001229, L0001230, L0001231, L0001232, L0001233, L0001234, L0001235, L0001236, L0001237, L0001238, L0001239, L0001240, L0001241, L0001242, L0001243, L0001244, L0001245, L0001246, L0001247, L0001248, L0001249, L0001250, L0001251, L0001252, L0001253, L0001254, L0001255, L0001256, L0001257, L0001258, L0001259, L0001260, L0001261, L0001262, L0001263, L0001264, L0001265, L0001266, L0001267, L0001268, L0001269, L0001270, L0001271, L0001272, L0001273, L0001274, L0001275, L0001276, L0001277, L0001278, L0001279, L0001280, L0001281, L0001282, L0001283, L0001284, L0001285, L0001286, L0001287, L0001288, L0001289, L0001290, L0001291, L0001292, L0001293, L0001294, L0001295, L0001296, L0001297, L0001298, L0001299, L0001300, L0001301, L0001302, L0001303,

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID SOURCE IDs

L0001304, L0001305, L0001306, L0001307, L0001308, L0001309, L0001310, L0001311, L0001312, L0001313, L0001314, L0001315,
L0001316, L0001317, L0001318, L0001319, L0001320, L0001321, L0001322, L0001323, L0001324, L0001585, L0001586, L0001587,
L0001588, L0001589, L0001590, L0001591, L0001592, L0001593, L0001594, L0001595, L0001596, L0001597, L0001598, L0001599,
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L0001624, L0001625, L0001626, L0001627, L0001628, L0001629, L0001630, L0001631, L0001632, L0001633, L0001634, L0001635,
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L0001672, L0001673, L0001674, L0001675, L0001676, L0001677, L0001678, L0001679, L0001680, L0001681, L0001682, L0001683,
L0001684, L0001685, L0001686, L0001687, L0001688, L0001689, L0001690, L0001691, L0001692, L0001693, L0001694, L0001695,
L0001696, L0001697, L0001698, L0001699, L0001700, L0001701, L0001702, L0001703, L0001704, L0001705, L0001706, L0001707,
L0001708, L0001709, L0001710, L0001711, L0001712, L0001713, L0001714, L0001715, L0001716, L0001717, L0001718, L0001719,
L0001720, L0001721, L0001722, L0001723, L0001724, L0001725, L0001726, L0001727, L0001728, L0001729, L0001730, L0001731,
L0001732, L0001733, L0001734, L0001735, L0001736, L0001737, L0001738, L0001739, L0001740, L0001741, L0001742, L0001743,
L0001744, L0001745, L0001746, L0001747, L0001748, L0001749, L0001750, L0001751, L0001752, L0001753, L0001754, L0001755,
L0001756, L0001757, L0001758, L0001759, L0001760, L0001761, L0001762, L0001763, L0001764, L0001765, L0001766, L0001767,
L0001768, L0001769, L0001770, L0001771, L0001772, L0001773, L0001774, L0001775, L0001776, L0001777, L0001778, L0001779,
L0001780, L0001781, L0001782, L0001783, L0001784, L0001785, L0001786, L0001787, L0001788, L0001789, L0001790, L0001791,
L0001792, L0001793, L0001794, L0001795, L0001796, L0001797, L0001798, L0001799, L0001800, L0001801, L0001802, L0001803,

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID SOURCE IDs

L0001804, L0001805, L0001806, L0001807, L0001808, L0001809, L0001810, L0001811, L0001812, L0001813, L0001814, L0001815,

L0001816, L0001817, L0001818, L0001819, L0001820, L0001821, L0001822, L0001823, L0001824, L0001825, L0001826, L0001827,

L0001828, L0001829, L0001830, L0001831, L0001832, L0001833, L0001834, L0001835, L0001836, L0001837, L0001838, L0001839,

L0001840, L0001841, L0001842, L0001843, L0001844,

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

*** X-COORDINATES OF GRID ***
(METERS)

647200.0, 647300.0, 647400.0, 647500.0, 647600.0, 647700.0, 647800.0, 647900.0, 648000.0, 648100.0,
648200.0, 648300.0, 648400.0, 648500.0, 648600.0, 648700.0, 648800.0, 648900.0, 649000.0, 649100.0,
649200.0, 649300.0, 649400.0, 649500.0, 649600.0, 649700.0, 649800.0, 649900.0, 650000.0, 650100.0,
650200.0, 650300.0, 650400.0, 650500.0, 650600.0, 650700.0, 650800.0, 650900.0, 651000.0, 651100.0,
651200.0, 651300.0, 651400.0, 651500.0, 651600.0,

*** Y-COORDINATES OF GRID ***
(METERS)

4209500.0, 4209600.0, 4209700.0, 4209800.0, 4209900.0, 4210000.0, 4210100.0, 4210200.0, 4210300.0, 4210400.0,
4210500.0, 4210600.0, 4210700.0, 4210800.0, 4210900.0, 4211000.0, 4211100.0, 4211200.0, 4211300.0, 4211400.0,
4211500.0, 4211600.0, 4211700.0, 4211800.0, 4211900.0, 4212000.0, 4212100.0, 4212200.0, 4212300.0, 4212400.0,
4212500.0, 4212600.0, 4212700.0, 4212800.0, 4212900.0, 4213000.0, 4213100.0, 4213200.0, 4213300.0, 4213400.0,
4213500.0, 4213600.0, 4213700.0, 4213800.0, 4213900.0,

* SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
LESS THAN 1.0 METER OR 3*ZLB IN DISTANCE, OR WITHIN OPEN PIT SOURCE

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS)	YR (METERS)	DISTANCE (METERS)
L0001123	651100.0	4211900.0	0.28
L0001124	651100.0	4211900.0	-2.30
L0001133	651100.0	4212000.0	-1.83
L0001134	651100.0	4212000.0	-6.21
L0001143	651100.0	4212100.0	-2.40
L0001144	651100.0	4212100.0	-7.06
L0001153	651100.0	4212200.0	-0.34
L0001154	651100.0	4212200.0	-3.83
L0001164	651100.0	4212300.0	0.28
L0001618	648300.0	4210600.0	-0.19
L0001640	648200.0	4210800.0	-4.12
L0001641	648200.0	4210800.0	-2.79
L0001694	648000.0	4211300.0	-2.13
L0001695	648000.0	4211300.0	-0.32
L0001716	647900.0	4211500.0	-0.20
L0001717	647900.0	4211500.0	-2.37
L0001770	647700.0	4212000.0	-2.33
L0001771	647700.0	4212000.0	-4.24
L0001793	647600.0	4212200.0	-0.30

CONC RURAL FLAT DFAULT

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: C:\OLD_DE~3\METDAT~1\STCK76.ASC
FORMAT: (4I2,2F9.4,F6.1,I2,2F7.1,f9.4,f10.1,f8.4,i4,f7.2)
SURFACE STATION NO.: 23237 UPPER AIR STATION NO.: 23237
NAME: UNKNOWN NAME: UNKNOWN
YEAR: 1976 YEAR: 1976

YR	MN	DY	HR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	MIXING HEIGHT (M) URBAN	USTAR (M/S)	M-O LENGTH (M)	Z-0 (M)	IPCODE	PRATE (mm/HR)
76	01	01	01	141.0	4.63	274.8	5	900.0	390.0	0.0000	0.0	0.0000	0	0.00
76	01	01	02	328.0	3.09	272.6	6	900.0	390.0	0.0000	0.0	0.0000	0	0.00
76	01	01	03	334.0	0.00	271.5	7	900.0	390.0	0.0000	0.0	0.0000	0	0.00
76	01	01	04	73.0	1.54	270.9	7	900.0	390.0	0.0000	0.0	0.0000	0	0.00
76	01	01	05	243.0	1.54	269.3	7	900.0	390.0	0.0000	0.0	0.0000	0	0.00
76	01	01	06	272.0	1.54	268.7	7	900.0	390.0	0.0000	0.0	0.0000	0	0.00
76	01	01	07	215.0	1.54	268.7	7	900.0	390.0	0.0000	0.0	0.0000	0	0.00
76	01	01	08	33.0	3.09	267.6	6	78.0	434.0	0.0000	0.0	0.0000	0	0.00
76	01	01	09	77.0	3.09	271.5	5	215.0	512.0	0.0000	0.0	0.0000	0	0.00
76	01	01	10	161.0	3.60	275.9	4	352.0	589.0	0.0000	0.0	0.0000	0	0.00
76	01	01	11	154.0	4.63	278.7	3	489.0	667.0	0.0000	0.0	0.0000	0	0.00
76	01	01	12	196.0	3.60	280.9	3	626.0	745.0	0.0000	0.0	0.0000	0	0.00
76	01	01	13	183.0	4.12	283.1	3	763.0	822.0	0.0000	0.0	0.0000	0	0.00
76	01	01	14	159.0	4.63	284.3	3	900.0	900.0	0.0000	0.0	0.0000	0	0.00
76	01	01	15	162.0	5.14	284.3	4	900.0	900.0	0.0000	0.0	0.0000	0	0.00
76	01	01	16	164.0	4.12	284.3	4	900.0	900.0	0.0000	0.0	0.0000	0	0.00
76	01	01	17	131.0	3.09	282.0	5	900.0	889.0	0.0000	0.0	0.0000	0	0.00
76	01	01	18	127.0	3.60	279.8	5	900.0	818.0	0.0000	0.0	0.0000	0	0.00
76	01	01	19	134.0	2.57	279.3	6	900.0	747.0	0.0000	0.0	0.0000	0	0.00
76	01	01	20	97.0	1.54	277.6	7	900.0	675.0	0.0000	0.0	0.0000	0	0.00
76	01	01	21	70.0	2.57	273.7	6	900.0	604.0	0.0000	0.0	0.0000	0	0.00
76	01	01	22	72.0	2.57	273.7	6	900.0	533.0	0.0000	0.0	0.0000	0	0.00
76	01	01	23	90.0	2.06	272.6	6	900.0	461.0	0.0000	0.0	0.0000	0	0.00
76	01	01	24	90.0	0.00	270.4	7	900.0	390.0	0.0000	0.0	0.0000	0	0.00

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.
FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

CONC RURAL FLAT DFAULT

*** THE PERIOD (8784 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): TRCK , L0001065, L0001066, L0001067, L0001068, L0001069, L0001070,
L0001071, L0001072, L0001073, L0001074, L0001075, L0001076, L0001077, L0001078, L0001079, L0001080, L0001081, L0001082,
L0001083, L0001084, L0001085, L0001086, L0001087, L0001088, L0001089, L0001090, L0001091, L0001092, L0001093, . . . ,
*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***
** CONC OF DIESELPM IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) 647200.00	647300.00	647400.00	647500.00	647600.00	647700.00	647800.00	647900.00	648000.00
4213900.00	0.22397	0.21923	0.22078	0.22365	0.22248	0.21798	0.21578	0.21624	0.21760
4213800.00	0.23529	0.22977	0.23102	0.23386	0.23150	0.22591	0.22313	0.22321	0.22472
4213700.00	0.24778	0.24193	0.24266	0.24526	0.24127	0.23468	0.23141	0.23110	0.23329
4213600.00	0.26120	0.25570	0.25562	0.25769	0.25142	0.24374	0.23984	0.23954	0.24262
4213500.00	0.27623	0.27166	0.27028	0.27160	0.26233	0.25347	0.24865	0.24911	0.25274
4213400.00	0.29479	0.29122	0.28750	0.28774	0.27482	0.26468	0.25923	0.26038	0.26209
4213300.00	0.32154	0.31631	0.30866	0.30699	0.28982	0.27811	0.27335	0.27294	0.27020
4213200.00	0.36334	0.34933	0.33610	0.33077	0.30872	0.29564	0.29097	0.28370	0.28183
4213100.00	0.39038	0.39346	0.37330	0.36098	0.33322	0.31990	0.30688	0.29896	0.29847
4213000.00	0.42027	0.45836	0.42594	0.40101	0.36817	0.34674	0.33003	0.32432	0.32738
4212900.00	0.53277	0.53320	0.50566	0.45779	0.41698	0.38594	0.37567	0.36676	0.36142
4212800.00	0.65295	0.64610	0.63920	0.54749	0.49148	0.46640	0.44647	0.43032	0.41818
4212700.00	0.76686	0.82178	0.82595	0.72575	0.68381	0.63490	0.58781	0.54667	0.51376
4212600.00	0.83200	0.91217	0.94985	1.32903	1.13666	0.95104	0.81949	0.72207	0.64962
4212500.00	0.85568	0.95981	1.06899	1.51139	1.59434	1.31127	1.07014	0.90506	0.78779
4212400.00	0.86140	0.97381	1.10930	1.38235	1.84590	1.61606	1.33921	1.11155	0.94384
4212300.00	0.85295	0.96541	1.11219	1.32801	1.89568	1.84121	1.55848	1.30796	1.10998
4212200.00	0.83527	0.94410	1.09450	1.28563	1.68112	2.01434	1.75003	1.47703	1.25637
4212100.00	0.81146	0.91613	1.06389	1.24299	1.50414	2.07124	1.92161	1.63647	1.39211
4212000.00	0.78253	0.88443	1.02544	1.19695	1.40709	1.88713	2.07717	1.78783	1.52478
4211900.00	0.74941	0.84930	0.98307	1.14534	1.33457	1.65579	2.15157	1.94487	1.65291
4211800.00	0.71375	0.81079	0.93883	1.09074	1.26558	1.50117	2.05024	2.08787	1.78892
4211700.00	0.67703	0.76987	0.89234	1.03613	1.19680	1.40192	1.79069	2.17816	1.93388
4211600.00	0.64096	0.72779	0.84363	0.98109	1.13019	1.32072	1.58947	2.15034	2.06962
4211500.00	0.60739	0.68598	0.79356	0.92376	1.06607	1.24250	1.46169	1.90933	2.17274
4211400.00	0.57639	0.64682	0.74348	0.86423	1.00055	1.16563	1.36296	1.67248	2.19528
4211300.00	0.54671	0.61057	0.69639	0.80425	0.93198	1.08860	1.27328	1.51609	2.00286
4211200.00	0.51838	0.57591	0.65292	0.74771	0.86183	1.00726	1.18617	1.39669	1.74835
4211100.00	0.48860	0.54287	0.61200	0.69605	0.79559	0.92340	1.09411	1.29018	1.55971
4211000.00	0.45561	0.50760	0.57305	0.64853	0.73602	0.84459	0.99618	1.18615	1.41918
4210900.00	0.42086	0.46855	0.53033	0.60176	0.68140	0.77466	0.90183	1.07305	1.29233
4210800.00	0.39053	0.43100	0.48407	0.54917	0.62464	0.71046	0.81818	0.96071	1.15676
4210700.00	0.36031	0.39647	0.44304	0.49744	0.56126	0.63973	0.73924	0.86159	1.01687
4210600.00	0.33130	0.36245	0.40257	0.44974	0.50450	0.56807	0.64989	0.76283	0.89703
4210500.00	0.30308	0.33052	0.36515	0.40513	0.45061	0.50297	0.56901	0.65777	0.76981

4210400.00	0.27506	0.29836	0.32764	0.36143	0.39956	0.44245	0.49456	0.56347	0.64973
4210300.00	0.25219	0.27219	0.29688	0.32470	0.35531	0.38856	0.42724	0.47814	0.54210
4210200.00	0.23003	0.24715	0.26802	0.29093	0.31569	0.34186	0.37092	0.40833	0.45549
4210100.00	0.21131	0.22604	0.24369	0.26257	0.28272	0.30407	0.32776	0.35818	0.39662
4210000.00	0.19436	0.20752	0.22348	0.24065	0.25874	0.27717	0.29608	0.31895	0.34850

CONC RURAL FLAT DFAULT

*** THE PERIOD (8784 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): TRCK , L0001065, L0001066, L0001067, L0001068, L0001069, L0001070,
L0001071, L0001072, L0001073, L0001074, L0001075, L0001076, L0001077, L0001078, L0001079, L0001080, L0001081, L0001082,
L0001083, L0001084, L0001085, L0001086, L0001087, L0001088, L0001089, L0001090, L0001091, L0001092, L0001093, . . . ,

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

** CONC OF DIESELPM IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) 650800.00	650900.00	651000.00	651100.00	651200.00	651300.00	651400.00	651500.00	651600.00
4209900.00	0.33213	0.34452	0.38200	0.38254	0.35692	0.33206	0.32859	0.32742	0.33569
4209800.00	0.31964	0.33150	0.36552	0.36450	0.34175	0.31788	0.31245	0.31168	0.31639
4209700.00	0.30839	0.32029	0.35079	0.34839	0.32782	0.30528	0.29753	0.29767	0.29950
4209600.00	0.29712	0.30990	0.33741	0.33415	0.31543	0.29435	0.28438	0.28496	0.28519
4209500.00	0.28423	0.29845	0.32368	0.32029	0.30356	0.28432	0.27276	0.27320	0.27315

CONC RURAL FLAT DFAULT

*** THE SUMMARY OF MAXIMUM PERIOD (8784 HRS) RESULTS ***

** CONC OF DIESELPM IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	2.51458 AT (	651200.00, 4211900.00, 0.00, 0.00)	GC	UCART1
	2ND HIGHEST VALUE IS	2.51181 AT (	651200.00, 4212000.00, 0.00, 0.00)	GC	UCART1
	3RD HIGHEST VALUE IS	2.50949 AT (	651200.00, 4211800.00, 0.00, 0.00)	GC	UCART1
	4TH HIGHEST VALUE IS	2.50828 AT (	651200.00, 4212100.00, 0.00, 0.00)	GC	UCART1
	5TH HIGHEST VALUE IS	2.49741 AT (	651200.00, 4211700.00, 0.00, 0.00)	GC	UCART1
	6TH HIGHEST VALUE IS	2.49734 AT (	651200.00, 4212200.00, 0.00, 0.00)	GC	UCART1
	7TH HIGHEST VALUE IS	2.48680 AT (	651200.00, 4212300.00, 0.00, 0.00)	GC	UCART1
	8TH HIGHEST VALUE IS	2.47258 AT (	651200.00, 4211600.00, 0.00, 0.00)	GC	UCART1
	9TH HIGHEST VALUE IS	2.46902 AT (	651200.00, 4212400.00, 0.00, 0.00)	GC	UCART1
	10TH HIGHEST VALUE IS	2.45230 AT (	651200.00, 4212500.00, 0.00, 0.00)	GC	UCART1

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

CONC RURAL FLAT DFAULT

*** Message Summary : ISCST3 Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 1 Warning Message(s)
A Total of 536 Informational Message(s)

A Total of 536 Calm Hours Identified

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
SO W320 587 PPARM :Input Parameter May Be Out-of-Range for Parameter QS

****
*** ISCST3 Finishes Successfully ***
****

Technical Note

Evaluation of Health Risks from Existing Trucking Operations near Proposed Bear Creek East Development Project

Stockton, California

April 21, 2007

Prepared for:
InSite Environmental, Inc.
6653 Embarcadero Drive, Suite Q
Stockton, California 95219

Prepared By:
Air Permitting Specialists
12247 Welch Road
Wilton, California 95693

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APPENDIX
Copy of EMFAC Emissions Model Output
Copy of Dispersion Model Output

1.0 INTRODUCTION

Air Permitting Specialists (APS) has been retained by InSite Environmental, Inc. to evaluate health risks associated with the operation of several trucking yards near the proposed Bear Creek East Development Project, in Stockton, California. The scope of the evaluation was limited to cancer health risks associated with emissions of diesel particulate from trucks at two trucking yards.

The proposed Bear Creek East Development project would be located southeast or the intersection of West Lane and Eight Mile Road in Stockton. There are two existing truck yards in the vicinity of the proposed development. See Figure 1 for the location of the trucking facilities.

The two trucking operations are:

- Hammer Trucking located on West Lane north of Eight Mile Road
- SBC/Freitas Trucking Yard located on Eight Mile Road East of West Lane

Would tuck exhaust emissions pose a health risk to residents at the proposed Bear Creek East Development?

To answer this question, the emission rates of truck exhaust emissions were calculated and an air dispersion model was employed to translate the emission rate of diesel exhaust particulate (in grams/second) into the concentrations (grams per cubic meter). Cancer health risk associated with exposure to diesel particulate matter (diesel PM) were calculated by use of a toxicity risk factor recommended by the California Air Resources Board (CARB).

This technical note consists of 4 main sections. Immediately follow this introduction, Section 2 describes the methodology for the estimate of annual diesel particulate emissions from the trucking facility. Section 3 describes the procedure for estimating health risks associated with the emissions. The results of the risk analysis is presented in Section 4. The report concludes (Section 4) with a discussion of the findings and implication for development in the vicinity of the trucking yards. Technical data and model output are provided in the appendix.

Figure 1
Location Map

2.0 ESTIMATE OF DIESEL PM EMISSIONS

Diesel PM is a component of the exhaust released from the trucks. On the basis of data presented in the noise study, 5 to 6 trucks enter Hammer Trucking yard daily. Similarly, 45 trucks enter and exit Freitas Trucking yard daily. A single truck would release diesel PM only for a few minutes while entering or exiting the yard. For example, if we assume each truck idles for 10 minutes, then a total of 50 to 60 minutes of truck idling emissions would be released from the Hammer Trucking yard and 450 minutes of truck idling emissions would be released from Freitas trucking yard.

2.1 Current Truck Emissions

For the purposes of this study, it was assumed that there would be four idling trucks at the SBC/Freitas trucking and two idling trucks at the Hammer trucking yard. Each truck would idle 8 hours per day, 365 days per year. This is equivalent to 960 minutes of truck idling at the Hammer Trucking Yard and 1,920 minutes of idling at the Freitas Trucking yard. These estimates of truck idling are a conservative (overstatement) estimate of emissions from truck idling. This is because current regulations enacted by CARB limit truck idling to no more that 5 minutes after a truck reaches its destination. As a result, the risk estimates presented in this report should be viewed as an upper limit of future risk. Actual risk are expected to be much lower.

The hourly emission rate from each truck idling truck was determined using the EMFAC4G emissions model for 2000 to 2005 average truck fleet mix in San Joaquin Valley Unified APCD. The results of EMFAC model indicate that each truck would emit 0.90 grams per hour of diesel PM. See copy of the EMFAC model output provided in the Appendix. This level of emissions is for the current (2000 to 2005) fleet mix.

2.2 Future Truck Emissions

The risk calculation is based on lifetime exposure to diesel PM. Estimates of cancer risk require knowledge of exposure to diesel PM over a person's lifetime. Under Guidelines established by the California Office of Environmental Health Hazard Assessment (OEHHA), lifetime exposure is defined as exposure over 70 years.

For the present study, it was assumed that the trucking operations would continue for the next 30 years, not 70 years. In addition, both the environmental protection agency (EPA) and CARB are promulgating new requirements will stipulate that emissions from diesel locomotive be reduced by 80% over the next 20 years (by 2026). Further declines are expected beyond 20 years. This means that the emission rates that are calculated using the EMFAC emissions model (0.90 grams/hour) would have to be adjusted to reflect average truck emissions over the next 30 years (2007 to 2037). For this study, however, we assumed that truck idling emissions over the next 30 years would be at the current rate.

3.0 EXPOSURE ASSESSMENT

Cancer risk is related to the exposure concentration, for example in grams/cubic meter, of diesel PM. Exposure can occur via inhalation, ingestion and dermal pathways. For this study, we limit our analysis to the inhalation pathway.

The ambient air concentration of diesel PM at a given location depends on its distance from the truck yards, the emission rate of diesel PM and the local wind pattern. An air dispersion model that incorporates these variables and parameters was used to calculate the concentration of diesel PM in the vicinity of the truck yards.

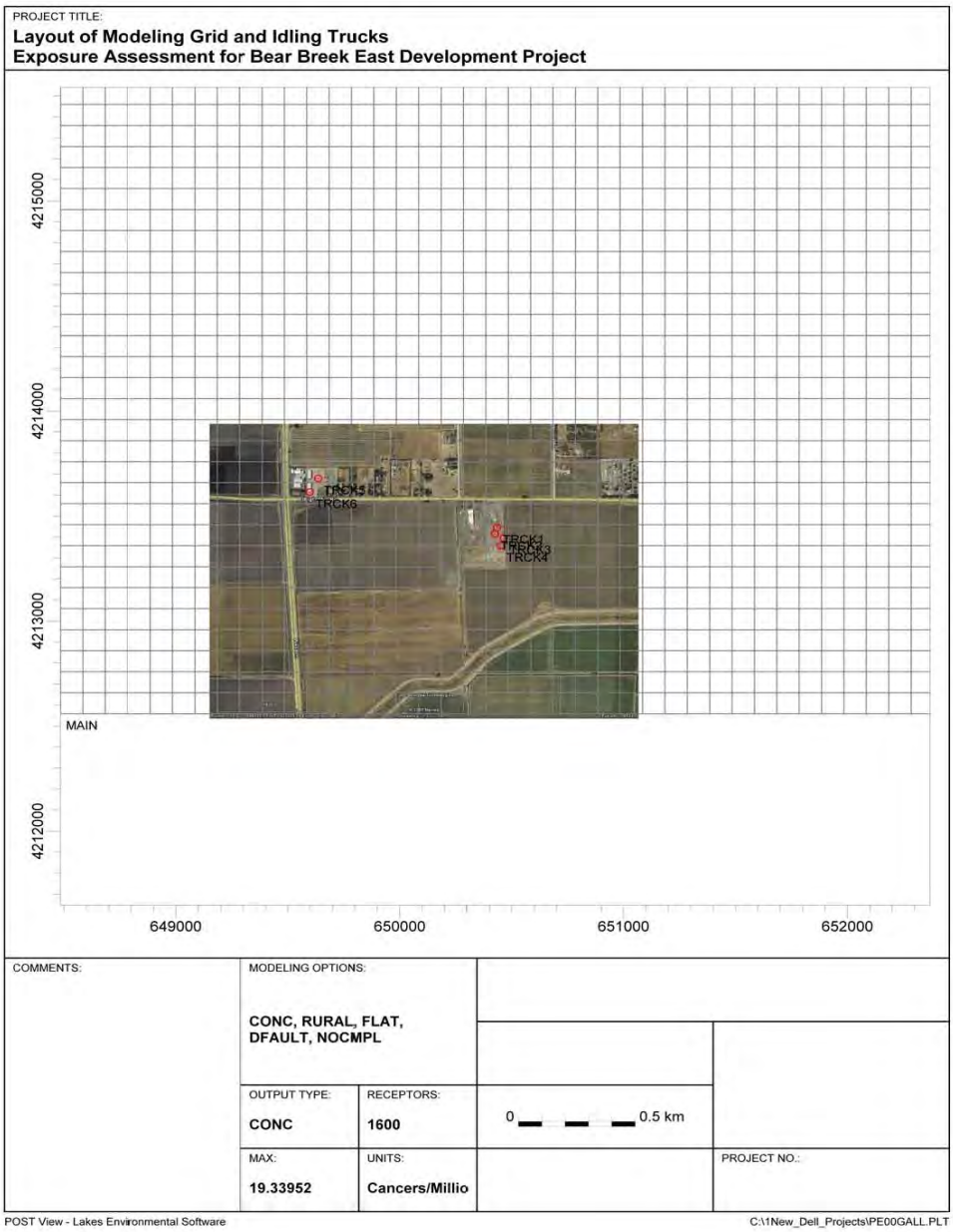
The EPA model, known as the Industrial Source Complex Model , was used to estimate the concentration of diesel PM. Trucks were modeled as individual stationary sources. Emission are assumed to be discharged from a 6 inch exhaust pipe 15 feet above ground. Concentrations were estimated every 100 meters in rectangular grid extending 1,000 meters in each direction. A total of 400 receptors were used. The modeling grid is shown in Figure 2 (next page).

Specific model inputs used to model the diesel PM are as follows:

Model	ISCST3 Version 02035
Emission Source	Stationary Point Source
Release Height	15 feet
Exhaust Flow	5.7 cubic meters/min
Exhaust Temperature	350 F
Rural/Urban Mode	Rural
Grid Resolution	100 meters (328 feet)
Grid Extent	2.0 km x 2.0 km (1.2 miles x 1.2 miles)
Number of Receptors	400
Regulatory Option	Option Used
Meteorological Data	1 year of hourly 1976 from Stockton Total of 8,760 hours modeled
Averaging Time	Annual

The model was run using hourly wind data for 1 year and the highest annual concentration was calculated at each of the 400 receptors. These concentrations were used to calculate cancer risk. This is discussed in the next section.

Figure 2
Layout of Modeling Grid
Showing Location of Individual Trucks
(Coordinates are in UTMs)



4.0 RISK CHARACTERIZATION

Risk characterization refers to the process of quantifying the risk associated with a given exposure to a toxic air pollutant. In the present study, we have focused on the inhalation pathway as the primary route of exposure. Therefore, risk characterization involves using the atmospheric concentration of diesel PM with toxicity data (diesel PM unit risk factor) to establish 70 year risk. The recommended unit risk factor (by CARB) is 3.0×10^{-04}. For example, if the concentration of diesel PM at a given receptor is 0.5 micrograms per cubic meter, then the 70 year cancer risk associated with this concentration is:

Risk (70 year) = 0.5 micrograms/cubic meter x 3.0×10^{-4} (micrograms/cubic meter)$^{-1}$

= 0.15×10^{-4} cancers or 15 cancers per million.

If the duration of exposure is reduced, say from 70 years to 30 years, then the cancer risk is reduced by a factor of 30/70 = 0.429.

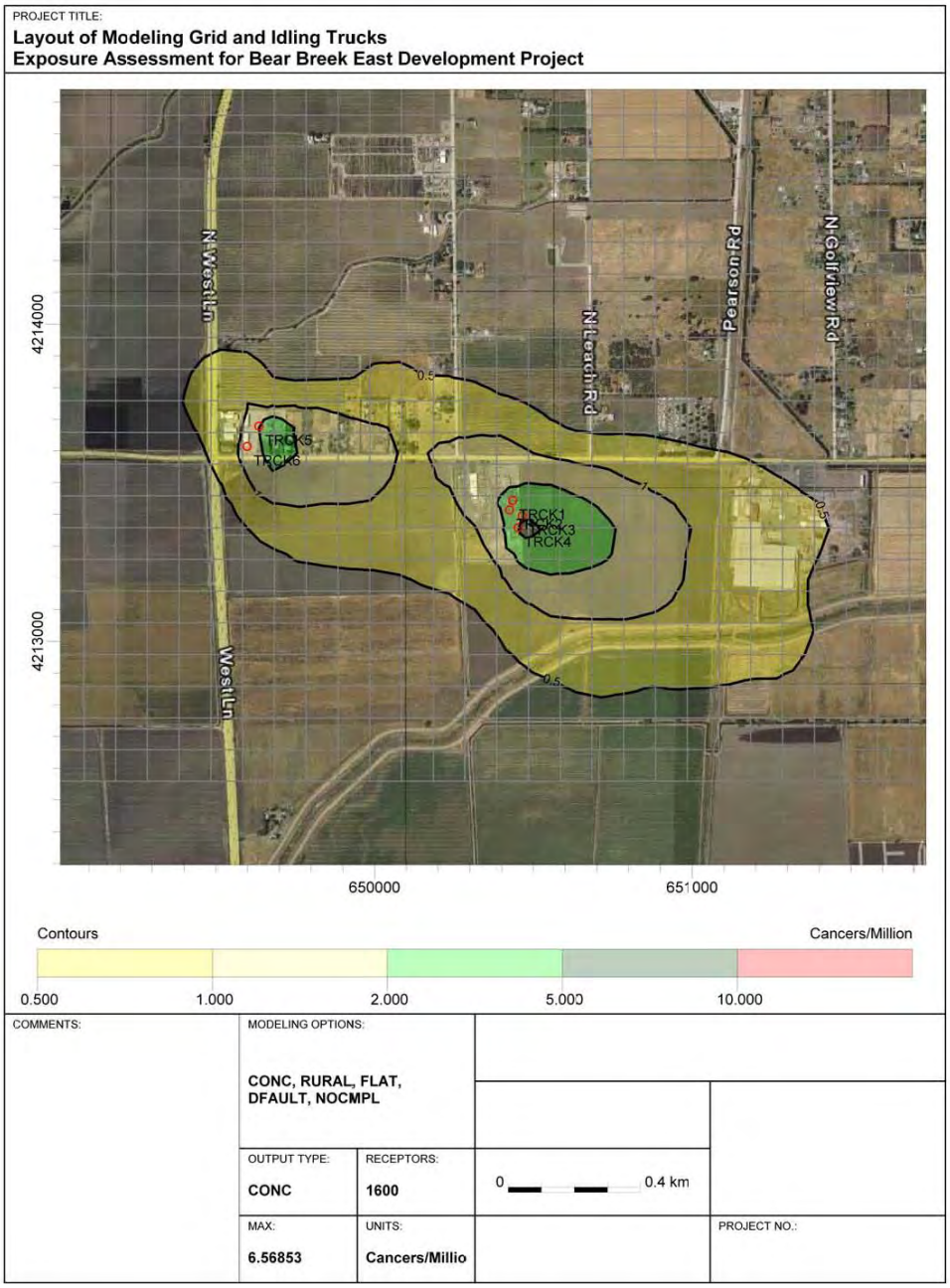
The results of calculating the risk are shown in Figure 3. The numbers on the contours indicate cancer risk per million. The innermost contour represents 2 cancers/million (red color). The results show that risk would not exceed 10 cancers/million for any locations outside the truck yards.

These results should be interpreted within the context of the assumptions noted in Section 3. Specifically,

- Continuous exposure over 30 years;
- No reduction in diesel PM emissions over 30 years;
- 8 hours/day truck idling per truck

In reality, these assumptions are very conservative because of current limits on truck idling. In addition, future diesel PM emissions would be decline by 85% in the next few years. Finally, it is very unlikely that the truck yards will remain in operation for the next 30 years. Judging by current patterns in land use, industrial facilities are relocation to other (non-residential) areas. As a result of these assumptions, actual cancer risk is expected to be well below 1 cancers/million over the next 30 years.

Figure 3
Spatial Variation of Cancer Risk *(per million)*



5.0 CONCLUSIONS

Maximum lifetime cancer risk associated with the operation of two trucking years near the proposed Bear Creek East Development project were calculated. It is estimated that the operation of the two trucking yards would not lead to any significant health risks at the proposed development.

6.0 REFERENCES

EPA (1995) “User’s Guide for the Industrial Source Complex (ISC) Models”, Environmental Protection Agency, Research Triangle Park, NC.

Turner, D.B., “Workbook of Atmospheric Dispersion Estimates”, 2nd Edition, Lewis Publishers, Boca Raton, FL.

APPENDIX

Title : San Joaquin Valley Unified APCD Avg 2005 Annual Default Title
Version : Emfac2002 V2.2 Apr 23 2003
Run Date : 03/07/07 11:44:26
Scen Year: 2005 -- Model Years: 2005 to 2005
Season : Annual
Area : San Joaquin Valley Unified APCD Dis
****
****

Year:2005 -- Model Years 2005 to 2005 Inclusive -- Annual
Emfac2002 Emission Factors: V2.2 Apr 23 2003

District Average District Average San Joaquin Valley Unified APCD

Table 1: Running Exhaust Emissions (grams/mile; grams/idle-hour)

Pollutant Name: Total Organic Gases Temperature: 70F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	9.992	6.053	0.000	0.000	1.369
10	0.050	0.052	0.104	0.326	0.089	4.290	0.099
15	0.034	0.036	0.075	0.260	0.064	3.540	0.074
20	0.025	0.026	0.057	0.212	0.047	3.057	0.058
25	0.019	0.020	0.045	0.177	0.037	2.764	0.048
30	0.015	0.016	0.037	0.151	0.030	2.615	0.041
35	0.013	0.013	0.032	0.132	0.025	2.589	0.037
40	0.011	0.012	0.028	0.118	0.022	2.683	0.035
45	0.011	0.011	0.026	0.108	0.020	2.909	0.035
50	0.010	0.011	0.025	0.101	0.018	3.301	0.037
55	0.011	0.011	0.025	0.097	0.018	3.921	0.041

Pollutant Name: Carbon Monoxide Temperature: 70F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	54.011	31.998	0.000	0.000	7.351
10	0.920	0.925	0.914	2.522	1.369	29.772	1.192
15	0.841	0.845	0.779	1.811	0.926	25.739	1.043
20	0.771	0.775	0.680	1.364	0.665	23.417	0.933
25	0.709	0.713	0.606	1.076	0.506	22.418	0.849
30	0.654	0.657	0.547	0.891	0.409	22.586	0.786
35	0.604	0.607	0.500	0.773	0.350	23.952	0.740
40	0.560	0.563	0.463	0.703	0.318	26.741	0.711
45	0.520	0.523	0.432	0.670	0.307	31.438	0.700
50	0.485	0.487	0.409	0.670	0.313	38.927	0.712
55	0.453	0.455	0.392	0.703	0.340	50.775	0.754

Pollutant Name: Oxides of Nitrogen Temperature: 70F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	8.034	72.472	0.000	0.000	5.498
10	0.066	0.077	0.639	6.985	0.897	1.021	0.582
15	0.059	0.068	0.558	6.010	0.741	1.064	0.505
20	0.053	0.062	0.503	5.358	0.642	1.108	0.452
25	0.049	0.057	0.469	4.949	0.584	1.153	0.418
30	0.046	0.053	0.450	4.735	0.555	1.200	0.400
35	0.043	0.050	0.445	4.694	0.551	1.247	0.395
40	0.042	0.048	0.454	4.819	0.569	1.296	0.403
45	0.041	0.048	0.477	5.125	0.613	1.345	0.425
50	0.041	0.047	0.517	5.646	0.689	1.394	0.463
55	0.041	0.048	0.578	6.442	0.808	1.445	0.521

Pollutant Name: Carbon Dioxide Temperature: 70F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	1965.227	3934.067	0.000	0.000	447.618
10	726.859	916.993	1321.310	1969.140	1947.930	199.527	928.118
15	569.463	718.448	1000.816	1919.343	1635.031	173.217	748.543
20	463.384	584.622	795.547	1889.022	1444.511	152.874	628.782
25	391.548	493.990	662.136	1870.178	1326.106	137.163	548.339
30	343.510	433.378	575.774	1858.438	1252.339	125.122	494.876
35	312.864	394.705	522.084	1851.374	1207.951	116.062	460.928
40	295.783	373.147	492.884	1847.656	1184.588	109.500	442.084
45	290.218	366.117	483.978	1846.629	1178.137	105.112	436.002
50	295.473	372.741	494.103	1848.120	1187.501	102.714	441.909
55	312.075	393.685	524.625	1852.381	1214.280	102.248	460.438

Pollutant Name: Sulfur Dioxide Temperature: 70F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.050	0.330	0.000	0.000	0.026
10	0.007	0.009	0.017	0.162	0.090	0.003	0.019
15	0.005	0.007	0.013	0.162	0.087	0.002	0.017
20	0.004	0.006	0.011	0.161	0.085	0.002	0.016
25	0.004	0.005	0.010	0.161	0.084	0.002	0.015
30	0.003	0.004	0.009	0.161	0.083	0.002	0.015
35	0.003	0.004	0.009	0.161	0.083	0.002	0.014
40	0.003	0.004	0.009	0.161	0.082	0.002	0.014
45	0.003	0.004	0.008	0.161	0.082	0.002	0.014
50	0.003	0.004	0.009	0.161	0.083	0.002	0.014
55	0.003	0.004	0.009	0.161	0.083	0.002	0.014

Pollutant Name: PM10 Temperature: 70F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.093	0.900	0.000	0.000	0.068
10	0.006	0.010	0.019	0.359	0.033	0.053	0.032
15	0.004	0.007	0.014	0.288	0.024	0.043	0.025
20	0.003	0.005	0.011	0.236	0.019	0.038	0.020
25	0.002	0.004	0.009	0.198	0.015	0.034	0.016
30	0.002	0.003	0.007	0.170	0.012	0.032	0.014
35	0.001	0.002	0.006	0.149	0.010	0.032	0.012
40	0.001	0.002	0.006	0.133	0.009	0.033	0.011
45	0.001	0.002	0.005	0.122	0.009	0.036	0.010
50	0.001	0.002	0.005	0.114	0.008	0.041	0.009
55	0.001	0.002	0.005	0.109	0.008	0.048	0.009

Pollutant Name: PM10 - Tire Wear Temperature: 70F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0.008	0.008	0.010	0.028	0.011	0.004	0.009
15	0.008	0.008	0.010	0.028	0.011	0.004	0.009
20	0.008	0.008	0.010	0.028	0.011	0.004	0.009
25	0.008	0.008	0.010	0.028	0.011	0.004	0.009
30	0.008	0.008	0.010	0.028	0.011	0.004	0.009
35	0.008	0.008	0.010	0.028	0.011	0.004	0.009
40	0.008	0.008	0.010	0.028	0.011	0.004	0.009
45	0.008	0.008	0.010	0.028	0.011	0.004	0.009
50	0.008	0.008	0.010	0.028	0.011	0.004	0.009
55	0.008	0.008	0.010	0.028	0.011	0.004	0.009

```
                                           ***     MODEL SETUP OPTIONS SUMMARY       ***
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

**Simple Terrain Model is Selected

**Model Is Setup For Calculation of Average CONCentration Values.

  --  SCAVENGING/DEPOSITION LOGIC --
**Model Uses NO DRY DEPLETION.  DDPLETE =  F
**Model Uses NO WET DEPLETION.  WDPLETE =  F
**NO WET SCAVENGING Data Provided.
**NO GAS DRY DEPOSITION Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations

**Model Uses RURAL Dispersion.

**Model Uses Regulatory DEFAULT Options:
           1. Final Plume Rise.
           2. Stack-tip Downwash.
           3. Buoyancy-induced Dispersion.
           4. Use Calms Processing Routine.
           5. Not Use Missing Data Processing Routine.
           6. Default Wind Profile Exponents.
           7. Default Vertical Potential Temperature Gradients.
           8. "Upper Bound" Values for Supersquat Buildings.
           9. No Exponential Decay for RURAL Mode

**Model Assumes Receptors on FLAT Terrain.
 **Model Assumes No FLAGPOLE Receptor Heights.
 **Model Calculates  1 Short Term Average(s) of:   1-HR
    and Calculates PERIOD Averages
 **This Run Includes:     6 Source(s);      1 Source Group(s); and    1600 Receptor(s)
 **The Model Assumes A Pollutant Type of:  PM

**Model Set To Continue RUNning After the Setup Testing.

**Output Options Selected:
         Model Outputs Tables of PERIOD Averages by Receptor
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs:  Anem. Hgt. (m) =    10.00 ;    Decay Coef. =    0.000     ;    Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Approximate Storage Requirements of Model =     1.3 MB of RAM.

**Input Runstream File:          BrearCk.INP
**Output Print File:             BrearCk.OUT
**File for Saving Result Arrays: test1.sv1
```

CONC RURAL FLAT DFAULT NOCMPL

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
TRCK1	0	0.95100E-01	650435.0	4213444.0	0.0	4.50	450.00	5.18	0.15	NO	
TRCK2	0	0.95100E-01	650425.0	4213414.0	0.0	4.50	450.00	5.18	0.15	NO	
TRCK3	0	0.95100E-01	650465.0	4213395.0	0.0	4.50	450.00	5.18	0.15	NO	
TRCK4	0	0.95100E-01	650452.0	4213358.0	0.0	4.50	450.00	5.18	0.15	NO	
TRCK5	0	0.95100E-01	649636.0	4213678.0	0.0	4.50	450.00	5.18	0.15	NO	
TRCK6	0	0.95100E-01	649599.0	4213614.0	0.0	4.50	450.00	5.18	0.15	NO	

**MODELOPTs:
CONC RURAL FLAT DFAULT NOCMPL

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
ALL	TRCK1 , TRCK2 , TRCK3 , TRCK4 , TRCK5 , TRCK6 ,

CONC RURAL FLAT DFAULT NOCMPL

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: MAIN ; NETWORK TYPE: GRIDCART ***

*** X-COORDINATES OF GRID ***
(METERS)

648485.0,	648585.0,	648685.0,	648785.0,	648885.0,	648985.0,	649085.0,	649185.0,	649285.0,	649385.0,
649485.0,	649585.0,	649685.0,	649785.0,	649885.0,	649985.0,	650085.0,	650185.0,	650285.0,	650385.0,
650485.0,	650585.0,	650685.0,	650785.0,	650885.0,	650985.0,	651085.0,	651185.0,	651285.0,	651385.0,
651485.0,	651585.0,	651685.0,	651785.0,	651885.0,	651985.0,	652085.0,	652185.0,	652285.0,	652385.0,

*** Y-COORDINATES OF GRID ***
(METERS)

4212558.0,	4212658.0,	4212758.0,	4212858.0,	4212958.0,	4213058.0,	4213158.0,	4213258.0,	4213358.0,	4213458.0,
4213558.0,	4213658.0,	4213758.0,	4213858.0,	4213958.0,	4214058.0,	4214158.0,	4214258.0,	4214358.0,	4214458.0,
4214558.0,	4214658.0,	4214758.0,	4214858.0,	4214958.0,	4215058.0,	4215158.0,	4215258.0,	4215358.0,	4215458.0,
4215558.0,	4215658.0,	4215758.0,	4215858.0,	4215958.0,	4216058.0,	4216158.0,	4216258.0,	4216358.0,	4216458.0,

CONC RURAL FLAT DFAULT NOCMPL

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

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1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
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NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

CONC RURAL FLAT DFAULT NOCMPL

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: STCK76.ASC
FORMAT: (4I2,2F9.4,F6.1,I2,2F7.1,f9.4,f10.1,f8.4,i4,f7.2)
SURFACE STATION NO.: 23237 UPPER AIR STATION NO.: 23237
NAME: UNKNOWN NAME: UNKNOWN
YEAR: 1976 YEAR: 1976

YR	MN	DY	HR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	MIXING HEIGHT (M) URBAN	USTAR (M/S)	M-O LENGTH (M)	Z-0 (M)	IPCODE	PRATE (mm/HR)
76	01	01	01	141.0	4.63	274.8	5	900.0	390.0	0.0000	0.0	0.0000	0	0.00
76	01	01	02	328.0	3.09	272.6	6	900.0	390.0	0.0000	0.0	0.0000	0	0.00
76	01	01	03	334.0	0.00	271.5	7	900.0	390.0	0.0000	0.0	0.0000	0	0.00
76	01	01	04	73.0	1.54	270.9	7	900.0	390.0	0.0000	0.0	0.0000	0	0.00
76	01	01	05	243.0	1.54	269.3	7	900.0	390.0	0.0000	0.0	0.0000	0	0.00
76	01	01	06	272.0	1.54	268.7	7	900.0	390.0	0.0000	0.0	0.0000	0	0.00
76	01	01	07	215.0	1.54	268.7	7	900.0	390.0	0.0000	0.0	0.0000	0	0.00
76	01	01	08	33.0	3.09	267.6	6	78.0	434.0	0.0000	0.0	0.0000	0	0.00
76	01	01	09	77.0	3.09	271.5	5	215.0	512.0	0.0000	0.0	0.0000	0	0.00
76	01	01	10	161.0	3.60	275.9	4	352.0	589.0	0.0000	0.0	0.0000	0	0.00
76	01	01	11	154.0	4.63	278.7	3	489.0	667.0	0.0000	0.0	0.0000	0	0.00
76	01	01	12	196.0	3.60	280.9	3	626.0	745.0	0.0000	0.0	0.0000	0	0.00
76	01	01	13	183.0	4.12	283.1	3	763.0	822.0	0.0000	0.0	0.0000	0	0.00
76	01	01	14	159.0	4.63	284.3	3	900.0	900.0	0.0000	0.0	0.0000	0	0.00
76	01	01	15	162.0	5.14	284.3	4	900.0	900.0	0.0000	0.0	0.0000	0	0.00
76	01	01	16	164.0	4.12	284.3	4	900.0	900.0	0.0000	0.0	0.0000	0	0.00
76	01	01	17	131.0	3.09	282.0	5	900.0	889.0	0.0000	0.0	0.0000	0	0.00
76	01	01	18	127.0	3.60	279.8	5	900.0	818.0	0.0000	0.0	0.0000	0	0.00
76	01	01	19	134.0	2.57	279.3	6	900.0	747.0	0.0000	0.0	0.0000	0	0.00
76	01	01	20	97.0	1.54	277.6	7	900.0	675.0	0.0000	0.0	0.0000	0	0.00
76	01	01	21	70.0	2.57	273.7	6	900.0	604.0	0.0000	0.0	0.0000	0	0.00
76	01	01	22	72.0	2.57	273.7	6	900.0	533.0	0.0000	0.0	0.0000	0	0.00
76	01	01	23	90.0	2.06	272.6	6	900.0	461.0	0.0000	0.0	0.0000	0	0.00
76	01	01	24	90.0	0.00	270.4	7	900.0	390.0	0.0000	0.0	0.0000	0	0.00

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.
FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

**MODELOPTs:
CONC RURAL FLAT DFAULT NOCMPL

*** THE PERIOD (8784 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): TRCK1 , TRCK2 , TRCK3 , TRCK4 , TRCK5 , TRCK6 ,

*** NETWORK ID: MAIN ; NETWORK TYPE: GRIDCART ***

** CONC OF PM IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) 648485.00	648585.00	648685.00	648785.00	648885.00	648985.00	649085.00	649185.00	649285.00
4216458.00	0.09599	0.09320	0.09321	0.09064	0.08785	0.09329	0.09693	0.09261	0.08732
4216358.00	0.10382	0.09849	0.09814	0.09798	0.09297	0.09432	0.09949	0.09870	0.09457
4216258.00	0.11414	0.10613	0.10263	0.10476	0.10078	0.09726	0.10106	0.10327	0.10233
4216158.00	0.12548	0.11749	0.10862	0.10999	0.10987	0.10342	0.10304	0.10606	0.10938
4216058.00	0.13601	0.13167	0.11900	0.11456	0.11814	0.11274	0.10742	0.10778	0.11453
4215958.00	0.14594	0.14566	0.13482	0.12190	0.12437	0.12356	0.11571	0.11027	0.11709
4215858.00	0.15747	0.15762	0.15326	0.13602	0.13019	0.13349	0.12746	0.11626	0.11768
4215758.00	0.17164	0.16900	0.17018	0.15694	0.14049	0.14157	0.14022	0.12766	0.11881
4215658.00	0.18624	0.18236	0.18436	0.17988	0.15937	0.15079	0.15149	0.14340	0.12455
4215558.00	0.19693	0.19768	0.19772	0.20049	0.18505	0.16682	0.16204	0.15957	0.13793
4215458.00	0.20109	0.21112	0.21201	0.21788	0.21252	0.19147	0.17783	0.17326	0.15741
4215358.00	0.20484	0.21738	0.22629	0.23259	0.23849	0.22111	0.20354	0.18824	0.17756
4215258.00	0.21895	0.22014	0.23531	0.24530	0.25960	0.25360	0.23516	0.21425	0.19604
4215158.00	0.24208	0.23378	0.23867	0.25462	0.27276	0.28599	0.26878	0.25241	0.22135
4215058.00	0.26304	0.26003	0.25134	0.25989	0.27872	0.30871	0.30648	0.29304	0.26359
4214958.00	0.27682	0.28547	0.27943	0.27282	0.28327	0.31427	0.34263	0.33367	0.31590
4214858.00	0.28844	0.30455	0.31013	0.30128	0.29850	0.31273	0.36061	0.37437	0.36957
4214758.00	0.31049	0.32581	0.33764	0.33682	0.32733	0.32835	0.35736	0.40450	0.41994
4214658.00	0.33487	0.35371	0.37266	0.37795	0.36586	0.35855	0.36807	0.41422	0.45384
4214558.00	0.36349	0.38007	0.40529	0.43103	0.42801	0.40023	0.39530	0.42733	0.47152
4214458.00	0.40092	0.41634	0.43692	0.46895	0.50353	0.48998	0.44412	0.44990	0.50216
4214358.00	0.42029	0.44449	0.47533	0.50771	0.55164	0.59417	0.56673	0.49676	0.53018
4214258.00	0.43639	0.46932	0.49398	0.53449	0.58909	0.66226	0.71181	0.66344	0.58605
4214158.00	0.44317	0.48789	0.53107	0.57039	0.59781	0.67565	0.79940	0.86627	0.78479
4214058.00	0.44924	0.49044	0.54671	0.61064	0.66547	0.70584	0.77874	0.94743	1.05287
4213958.00	0.44476	0.49498	0.55236	0.60479	0.69068	0.78611	0.85630	0.93181	1.11330
4213858.00	0.45112	0.49245	0.54815	0.60853	0.68206	0.77740	0.87946	1.01800	1.13007
4213758.00	0.46841	0.51248	0.56208	0.61707	0.67827	0.75979	0.88405	1.00737	1.10871
4213658.00	0.44467	0.49158	0.54581	0.60802	0.67901	0.75844	0.84663	0.94621	1.06246
4213558.00	0.40406	0.44323	0.48970	0.54530	0.61221	0.68812	0.75895	0.81896	0.90849
4213458.00	0.37413	0.40729	0.44094	0.47406	0.50433	0.53333	0.58286	0.66485	0.76603
4213358.00	0.34937	0.36613	0.38939	0.42575	0.47451	0.53559	0.59589	0.66058	0.70353
4213258.00	0.30562	0.33296	0.36526	0.40082	0.43742	0.47861	0.51842	0.54589	0.67136
4213158.00	0.28556	0.31158	0.33894	0.36945	0.40612	0.43281	0.46164	0.54581	0.55854
4213058.00	0.28394	0.30374	0.32708	0.34377	0.34824	0.36227	0.40528	0.42838	0.43083
4212958.00	0.25359	0.26199	0.26658	0.26223	0.27729	0.30962	0.35163	0.35028	0.39067
4212858.00	0.20864	0.21327	0.21205	0.23269	0.26263	0.30972	0.31247	0.33885	0.35827
4212758.00	0.18218	0.18639	0.20927	0.23366	0.27430	0.28077	0.28867	0.31215	0.32788
4212658.00	0.17132	0.19016	0.20741	0.24146	0.25244	0.25179	0.26928	0.27994	0.29622
4212558.00	0.17146	0.18518	0.21384	0.22594	0.22327	0.23228	0.24848	0.25584	0.26093

CONC RURAL FLAT DFAULT NOCMPL

*** THE PERIOD (8784 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): TRCK1 , TRCK2 , TRCK3 , TRCK4 , TRCK5 , TRCK6 ,

*** NETWORK ID: MAIN ; NETWORK TYPE: GRIDCART ***

** CONC OF PM IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) 649385.00	649485.00	649585.00	649685.00	649785.00	649885.00	649985.00	650085.00	650185.00
4216458.00	0.08865	0.09528	0.09675	0.09563	0.09149	0.07741	0.06234	0.06025	0.06508
4216358.00	0.09278	0.09861	0.10232	0.10066	0.09740	0.08345	0.06510	0.06189	0.06773
4216258.00	0.09892	0.10190	0.10794	0.10641	0.10339	0.09012	0.06857	0.06382	0.07059
4216158.00	0.10728	0.10609	0.11328	0.11304	0.10949	0.09725	0.07290	0.06608	0.07366
4216058.00	0.11710	0.11232	0.11812	0.12043	0.11588	0.10465	0.07828	0.06879	0.07698
4215958.00	0.12674	0.12151	0.12293	0.12817	0.12289	0.11208	0.08489	0.07210	0.08060
4215858.00	0.13420	0.13355	0.12905	0.13564	0.13092	0.11934	0.09286	0.07625	0.08454
4215758.00	0.13802	0.14684	0.13830	0.14245	0.14011	0.12639	0.10220	0.08158	0.08877
4215658.00	0.13834	0.15859	0.15189	0.14923	0.15007	0.13350	0.11277	0.08852	0.09326
4215558.00	0.13816	0.16616	0.16901	0.15814	0.15986	0.14131	0.12424	0.09763	0.09816
4215458.00	0.14298	0.16888	0.18623	0.17204	0.16853	0.15051	0.13621	0.10938	0.10399
4215358.00	0.15684	0.17019	0.19904	0.19218	0.17666	0.16123	0.14848	0.12403	0.11152
4215258.00	0.17708	0.17779	0.20518	0.21565	0.18764	0.17258	0.16162	0.14167	0.12110
4215158.00	0.19690	0.19698	0.20875	0.23577	0.20599	0.18292	0.17687	0.16225	0.13245
4215058.00	0.21857	0.22221	0.22121	0.24674	0.23173	0.19291	0.19544	0.18577	0.14651
4214958.00	0.25923	0.24414	0.25018	0.25226	0.25621	0.20877	0.21642	0.21114	0.16659
4214858.00	0.32235	0.27347	0.28567	0.26968	0.26717	0.23824	0.23675	0.23671	0.19547
4214758.00	0.39230	0.33162	0.31956	0.31015	0.26567	0.27705	0.25787	0.26562	0.23643
4214658.00	0.46321	0.40626	0.37999	0.35612	0.27895	0.30440	0.29156	0.30319	0.29274
4214558.00	0.51866	0.48579	0.47614	0.41152	0.32437	0.31175	0.34622	0.34898	0.34928
4214458.00	0.54187	0.55386	0.57889	0.51979	0.37505	0.34313	0.40303	0.40513	0.41320
4214358.00	0.58556	0.59072	0.66345	0.65098	0.47038	0.42267	0.43676	0.48034	0.43201
4214258.00	0.64131	0.65928	0.69443	0.76059	0.63236	0.52271	0.51273	0.54945	0.48685
4214158.00	0.72591	0.74993	0.74882	0.79283	0.78680	0.75274	0.63971	0.54564	0.62794
4214058.00	0.94206	0.95651	0.83665	0.84385	0.85805	1.01527	0.75905	0.71446	0.82029
4213958.00	1.26187	1.22388	1.15583	0.96369	0.98853	0.99022	1.20850	1.06749	1.03307
4213858.00	1.41125	1.69318	1.78412	1.34653	1.15051	1.22697	1.53176	1.61013	1.27876
4213758.00	1.36788	2.06271	2.86273	2.11538	1.98851	2.02043	1.98916	2.19304	2.14107
4213658.00	1.25463	1.76591	2.85042	9.71963	5.37579	3.78352	3.19404	2.83532	3.01551
4213558.00	1.04410	1.40127	2.86058	8.65616	5.43581	3.97588	3.27546	2.90223	2.82853
4213458.00	0.87113	1.08114	1.96717	3.22032	3.50926	3.35021	3.05693	2.81534	2.66857
4213358.00	0.86391	0.93722	1.43923	1.89963	2.19494	2.27633	2.39212	2.35248	2.27336
4213258.00	0.69156	0.78450	1.14761	1.31805	1.56712	1.57389	1.61329	1.68421	1.80840
4213158.00	0.59237	0.61927	0.87350	0.93851	1.15135	1.23895	1.28844	1.33588	1.46348
4213058.00	0.45520	0.50984	0.74522	0.78496	0.95326	1.04456	1.03872	1.07422	1.19467
4212958.00	0.42196	0.49088	0.66721	0.67143	0.76749	0.86457	0.86407	0.96629	0.92940
4212858.00	0.38178	0.45477	0.58804	0.57361	0.61132	0.71832	0.80457	0.78778	0.79250
4212758.00	0.34225	0.41318	0.50646	0.47712	0.52493	0.64545	0.70273	0.65126	0.68128
4212658.00	0.30494	0.35633	0.43097	0.43221	0.48860	0.55045	0.58887	0.57462	0.57019
4212558.00	0.26376	0.30946	0.39627	0.41855	0.43808	0.45153	0.50205	0.51581	0.48159

CONC RURAL FLAT DFAULT NOCMPL

*** THE PERIOD (8784 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): TRCK1 , TRCK2 , TRCK3 , TRCK4 , TRCK5 , TRCK6 ,

*** NETWORK ID: MAIN ; NETWORK TYPE: GRIDCART ***

** CONC OF PM IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) 650285.00	650385.00	650485.00	650585.00	650685.00	650785.00	650885.00	650985.00	651085.00
4216458.00	0.06790	0.07036	0.07125	0.07033	0.06676	0.05795	0.04559	0.03864	0.03789
4216358.00	0.07127	0.07395	0.07512	0.07412	0.06947	0.05953	0.04663	0.04076	0.04116
4216258.00	0.07503	0.07787	0.07956	0.07802	0.07240	0.06127	0.04800	0.04379	0.04468
4216158.00	0.07913	0.08219	0.08450	0.08195	0.07571	0.06310	0.05007	0.04766	0.04780
4216058.00	0.08353	0.08712	0.08974	0.08610	0.07944	0.06509	0.05324	0.05165	0.05053
4215958.00	0.08827	0.09279	0.09509	0.09082	0.08352	0.06767	0.05745	0.05492	0.05395
4215858.00	0.09345	0.09915	0.10063	0.09632	0.08798	0.07136	0.06168	0.05790	0.05890
4215758.00	0.09936	0.10590	0.10676	0.10263	0.09333	0.07594	0.06508	0.06225	0.06389
4215658.00	0.10625	0.11280	0.11397	0.10986	0.10017	0.07999	0.06877	0.06813	0.06568
4215558.00	0.11400	0.12013	0.12245	0.11875	0.10786	0.08297	0.07457	0.07218	0.06318
4215458.00	0.12208	0.12867	0.13233	0.13030	0.11415	0.08732	0.08036	0.07102	0.05946
4215358.00	0.13024	0.13905	0.14475	0.14352	0.11918	0.09398	0.08081	0.06634	0.05935
4215258.00	0.13922	0.15147	0.16122	0.15557	0.12647	0.09701	0.07551	0.06385	0.06678
4215158.00	0.15006	0.16722	0.17968	0.16850	0.13270	0.09154	0.07119	0.06984	0.07930
4215058.00	0.16305	0.18844	0.19694	0.18501	0.12808	0.08394	0.07611	0.08432	0.09302
4214958.00	0.17988	0.21122	0.21877	0.19312	0.11593	0.08615	0.09125	0.10277	0.11013
4214858.00	0.20350	0.23361	0.24030	0.18700	0.11290	0.10254	0.11132	0.12462	0.12477
4214758.00	0.22661	0.26271	0.24336	0.18644	0.12868	0.12578	0.13741	0.13948	0.13848
4214658.00	0.25321	0.27372	0.24756	0.20908	0.15405	0.15424	0.15658	0.15461	0.17931
4214558.00	0.27619	0.27100	0.28651	0.24305	0.18462	0.17326	0.18210	0.20538	0.24283
4214458.00	0.26935	0.31052	0.34943	0.27774	0.20489	0.21776	0.24583	0.26247	0.26433
4214358.00	0.32083	0.38633	0.41793	0.30354	0.27346	0.29261	0.27457	0.27803	0.27819
4214258.00	0.44970	0.46252	0.50467	0.39662	0.32990	0.29591	0.30065	0.33131	0.29168
4214158.00	0.59686	0.59692	0.64802	0.40517	0.34227	0.35126	0.39489	0.37570	0.26700
4214058.00	0.86182	0.69126	0.70378	0.46603	0.44033	0.46829	0.48358	0.35521	0.34040
4213958.00	1.02216	0.83015	0.88503	0.58728	0.57709	0.62454	0.49381	0.43684	0.49340
4213858.00	1.37246	1.11504	1.12922	0.77374	0.78348	0.67528	0.56310	0.62686	0.68949
4213758.00	1.84323	1.60000	1.46652	1.07025	0.99340	0.81292	0.89742	0.97970	0.93205
4213658.00	2.68693	2.59036	2.01342	1.53664	1.22690	1.33162	1.30896	1.21790	1.11878
4213558.00	3.85073	4.31286	3.04442	2.06034	1.96301	1.96238	1.82882	1.71394	1.56194
4213458.00	3.19419	6.15141	7.07610	6.34376	4.71630	3.77735	3.13255	2.63373	2.24293
4213358.00	2.56353	3.93946	19.33952	13.78052	7.34545	5.09785	3.93066	3.16131	2.60210
4213258.00	2.15599	2.85995	7.71937	8.56282	6.81887	4.99089	3.75093	2.91411	2.34119
4213158.00	1.63455	2.10011	3.50956	4.29163	4.21717	4.04105	3.65294	2.98536	2.45451
4213058.00	1.23468	1.59772	2.21476	2.88246	2.80625	2.76245	2.64976	2.62218	2.36689
4212958.00	0.98630	1.32373	1.60809	1.98639	2.03627	1.97461	2.01734	1.90943	1.89645
4212858.00	0.79467	1.12120	1.28842	1.41857	1.64819	1.61584	1.48010	1.55304	1.47161
4212758.00	0.67529	0.93785	1.06458	1.14216	1.36819	1.20688	1.25854	1.16430	1.23540
4212658.00	0.61060	0.80614	0.88309	0.91154	1.05453	1.06666	1.02529	0.97781	0.94579
4212558.00	0.55339	0.72074	0.75010	0.71266	0.81404	0.97705	0.81800	0.87653	0.78696

**MODELOPTs:
CONC RURAL FLAT DFAULT NOCMPL

*** THE PERIOD (8784 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): TRCK1 , TRCK2 , TRCK3 , TRCK4 , TRCK5 , TRCK6 ,

*** NETWORK ID: MAIN ; NETWORK TYPE: GRIDCART ***

** CONC OF PM IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) 651185.00	651285.00	651385.00	651485.00	651585.00	651685.00	651785.00	651885.00	651985.00
4216458.00	0.03967	0.04088	0.04078	0.04338	0.04478	0.04155	0.03712	0.03358	0.03246
4216358.00	0.04267	0.04287	0.04391	0.04693	0.04536	0.04012	0.03571	0.03338	0.03514
4216258.00	0.04520	0.04546	0.04792	0.04903	0.04402	0.03829	0.03495	0.03518	0.04032
4216158.00	0.04785	0.04917	0.05149	0.04868	0.04167	0.03703	0.03590	0.03995	0.04692
4216058.00	0.05149	0.05325	0.05286	0.04627	0.03971	0.03738	0.03985	0.04725	0.05292
4215958.00	0.05596	0.05587	0.05148	0.04345	0.03943	0.04056	0.04710	0.05496	0.05815
4215858.00	0.05937	0.05579	0.04854	0.04216	0.04207	0.04718	0.05602	0.06184	0.06472
4215758.00	0.05979	0.05366	0.04623	0.04418	0.04817	0.05632	0.06508	0.06901	0.07329
4215658.00	0.05767	0.05142	0.04715	0.05016	0.05681	0.06720	0.07402	0.07743	0.08123
4215558.00	0.05562	0.05168	0.05287	0.05847	0.06824	0.07898	0.08258	0.08620	0.08376
4215458.00	0.05647	0.05684	0.06146	0.06940	0.08282	0.08890	0.09126	0.09125	0.07829
4215358.00	0.06243	0.06561	0.07211	0.08523	0.09573	0.09703	0.09844	0.08867	0.07058
4215258.00	0.07178	0.07672	0.08761	0.10161	0.10414	0.10531	0.10033	0.08318	0.07033
4215158.00	0.08333	0.09212	0.10556	0.11244	0.11249	0.11319	0.09921	0.08343	0.08031
4215058.00	0.09947	0.10903	0.12039	0.12134	0.12721	0.11911	0.09964	0.09072	0.09417
4214958.00	0.11495	0.12593	0.13318	0.14305	0.14301	0.11917	0.10134	0.09940	0.10125
4214858.00	0.13027	0.14747	0.16196	0.17011	0.14186	0.11133	0.10263	0.10454	0.11052
4214758.00	0.16239	0.18592	0.19838	0.16656	0.12018	0.10498	0.11000	0.12121	0.13224
4214658.00	0.21482	0.22504	0.19144	0.12950	0.10944	0.12029	0.13771	0.15133	0.15221
4214558.00	0.24745	0.21570	0.14454	0.12015	0.13741	0.16056	0.17478	0.17226	0.16815
4214458.00	0.24210	0.17330	0.14057	0.16184	0.18878	0.20101	0.19487	0.19561	0.21700
4214358.00	0.22235	0.17176	0.19161	0.22113	0.23118	0.22452	0.23611	0.26694	0.28387
4214258.00	0.21189	0.22620	0.26170	0.27015	0.26748	0.29482	0.32801	0.32443	0.28807
4214158.00	0.27270	0.31656	0.32293	0.33323	0.37658	0.39272	0.35539	0.30496	0.27494
4214058.00	0.39247	0.39931	0.43256	0.47342	0.44399	0.37883	0.33633	0.32297	0.31843
4213958.00	0.51159	0.56394	0.55933	0.48150	0.42149	0.40309	0.39595	0.38503	0.37108
4213858.00	0.72031	0.64654	0.56465	0.53803	0.52613	0.50893	0.48856	0.46940	0.45185
4213758.00	0.82078	0.76472	0.73492	0.69984	0.66444	0.63228	0.60091	0.56963	0.53847
4213658.00	1.06388	0.99835	0.93277	0.86940	0.80729	0.74679	0.68950	0.63718	0.59073
4213558.00	1.40482	1.25875	1.12999	1.02346	0.93641	0.86316	0.80073	0.74663	0.69889
4213458.00	1.93359	1.68675	1.48622	1.32273	1.18850	1.07394	0.97535	0.88993	0.81554
4213358.00	2.18166	1.85810	1.60447	1.40508	1.24713	1.11670	1.00744	0.91481	0.83549
4213258.00	1.97694	1.72002	1.51555	1.34793	1.20914	1.09098	0.98956	0.90182	0.82539
4213158.00	2.04333	1.67682	1.39295	1.20460	1.07961	0.98743	0.91124	0.84377	0.78259
4213058.00	1.99397	1.71651	1.51651	1.32460	1.13369	0.97029	0.84833	0.76274	0.70196
4212958.00	1.84878	1.67035	1.44098	1.27395	1.16425	1.06380	0.95326	0.83793	0.73275
4212858.00	1.43162	1.44587	1.38285	1.26190	1.10975	0.99476	0.92057	0.86074	0.79811
4212758.00	1.18066	1.13328	1.15867	1.14262	1.08726	0.99655	0.88774	0.80381	0.74880
4212658.00	1.01089	0.97617	0.93385	0.94547	0.95719	0.92748	0.88196	0.81135	0.73040
4212558.00	0.79048	0.84816	0.82355	0.78901	0.78574	0.80886	0.79882	0.77053	0.73263

CONC RURAL FLAT DFAULT NOCMPL

*** THE PERIOD (8784 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): TRCK1 , TRCK2 , TRCK3 , TRCK4 , TRCK5 , TRCK6 ,

*** NETWORK ID: MAIN ; NETWORK TYPE: GRIDCART ***

** CONC OF PM IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) 652085.00	652185.00	652285.00	652385.00
4216458.00	0.03541	0.03972	0.04175	0.04327
4216358.00	0.04036	0.04388	0.04519	0.04800
4216258.00	0.04574	0.04757	0.04979	0.05380
4216158.00	0.05029	0.05198	0.05619	0.05859
4216058.00	0.05476	0.05861	0.06244	0.05965
4215958.00	0.06131	0.06609	0.06508	0.05607
4215858.00	0.06963	0.07057	0.06220	0.04927
4215758.00	0.07602	0.06897	0.05487	0.04252
4215658.00	0.07624	0.06150	0.04723	0.04101
4215558.00	0.06927	0.05318	0.04576	0.04926
4215458.00	0.06078	0.05195	0.05524	0.06506
4215358.00	0.05997	0.06238	0.07221	0.08065
4215258.00	0.07075	0.07975	0.08725	0.09148
4215158.00	0.08733	0.09312	0.09586	0.09740
4215058.00	0.09780	0.09969	0.10185	0.10128
4214958.00	0.10400	0.10833	0.10911	0.10580
4214858.00	0.11812	0.12010	0.11692	0.11562
4214758.00	0.13455	0.13101	0.13202	0.14351
4214658.00	0.14787	0.15258	0.16920	0.18636
4214558.00	0.17951	0.20144	0.21584	0.21228
4214458.00	0.24079	0.24505	0.22698	0.19944
4214358.00	0.26963	0.23723	0.20835	0.19273
4214258.00	0.24996	0.22847	0.22164	0.22077
4214158.00	0.26545	0.26317	0.25941	0.25256
4214058.00	0.31111	0.30035	0.28889	0.27861
4213958.00	0.35747	0.34531	0.33428	0.32412
4213858.00	0.43505	0.41850	0.40184	0.38492
4213758.00	0.50757	0.47743	0.44867	0.42173
4213658.00	0.55012	0.51491	0.48448	0.45810
4213558.00	0.65604	0.61707	0.58130	0.54827
4213458.00	0.75042	0.69314	0.64250	0.59753
4213358.00	0.76690	0.70712	0.65461	0.60817
4213258.00	0.75843	0.69952	0.64750	0.60137
4213158.00	0.72703	0.67676	0.63131	0.59019
4213058.00	0.65589	0.61774	0.58370	0.55204
4212958.00	0.64743	0.58294	0.53549	0.50030
4212858.00	0.72704	0.65160	0.58006	0.51869
4212758.00	0.70773	0.66908	0.62625	0.57768
4212658.00	0.66670	0.62381	0.59283	0.56666
4212558.00	0.67631	0.61419	0.56457	0.53067

*** THE SUMMARY OF MAXIMUM PERIOD (8784 HRS) RESULTS ***

** CONC OF PM IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZFLAG)				OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	19.33952 AT (	650485.00,	4213358.00,	0.00,	0.00)	GC	MAIN
	2ND HIGHEST VALUE IS	13.78052 AT (	650585.00,	4213358.00,	0.00,	0.00)	GC	MAIN
	3RD HIGHEST VALUE IS	9.71963 AT (	649685.00,	4213658.00,	0.00,	0.00)	GC	MAIN
	4TH HIGHEST VALUE IS	8.65616 AT (	649685.00,	4213558.00,	0.00,	0.00)	GC	MAIN
	5TH HIGHEST VALUE IS	8.56282 AT (	650585.00,	4213258.00,	0.00,	0.00)	GC	MAIN
	6TH HIGHEST VALUE IS	7.71937 AT (	650485.00,	4213258.00,	0.00,	0.00)	GC	MAIN
	7TH HIGHEST VALUE IS	7.34545 AT (	650685.00,	4213358.00,	0.00,	0.00)	GC	MAIN
	8TH HIGHEST VALUE IS	7.07610 AT (	650485.00,	4213458.00,	0.00,	0.00)	GC	MAIN
	9TH HIGHEST VALUE IS	6.81887 AT (	650685.00,	4213258.00,	0.00,	0.00)	GC	MAIN
	10TH HIGHEST VALUE IS	6.34376 AT (	650585.00,	4213458.00,	0.00,	0.00)	GC	MAIN

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

CONC RURAL FLAT DFAULT NOCMPL

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF PM IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL HIGH 1ST HIGH VALUE IS	369.53864	ON 76091606:	AT (650485.00, 4213258.00, 0.00, 0.00)	GC	MAIN

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

```
**MODELOPTs:
CONC                    RURAL FLAT         DFAULT                                                    NOCMPL


*** Message Summary : ISCST3 Model Execution ***

 --------- Summary of Total Messages --------

A Total of            0 Fatal Error Message(s)
A Total of            0 Warning Message(s)
A Total of          536 Informational Message(s)

A Total of          536 Calm Hours Identified


   ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


   ********   WARNING MESSAGES   ********
              ***  NONE  ***


   ************************************
   *** ISCST3 Finishes Successfully ***
   ************************************
```

Appendix F

Biological Resources Assessment

MOORE BIOLOGICAL CONSULTANTS

May 18, 2010

Mr. Charlie Simpson
Insite Environmental
6653 Embarcadero Drive, Suite Q
Stockton, CA 95219

Subject: BASELINE BIOLOGICAL RESOURCES ASSESSMENT AT THE BEAR CREEK EAST PROJECT SITE, STOCKTON, CALIFORNIA

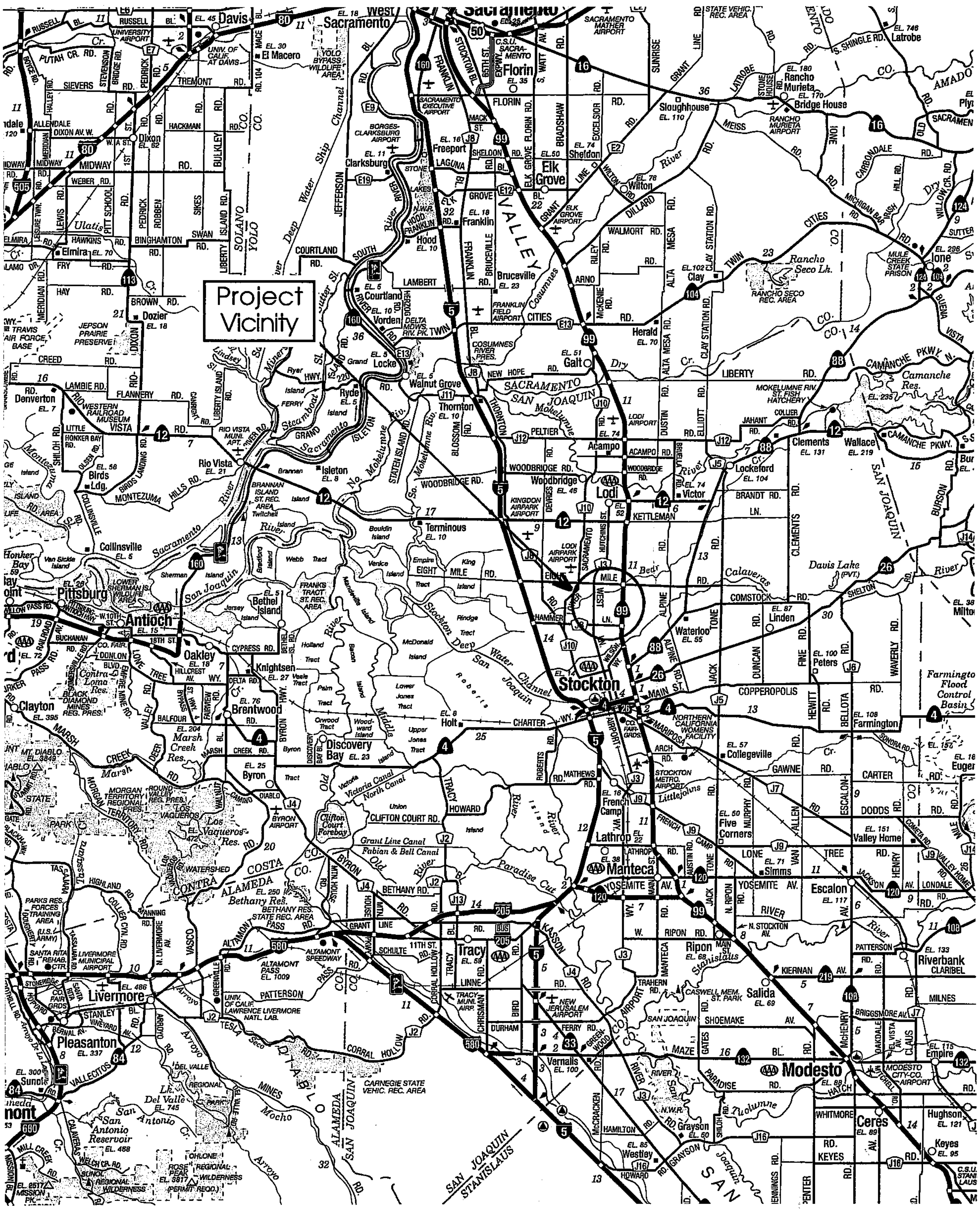
Dear Charlie:

Thank you for asking Moore Biological Consultants to conduct a baseline biological resources assessment for the Bear Creek East project (Figures 1 and 2). The focus of our work was to document existing biological resources in the site, conduct a survey to determine presence or absence of waters of the U.S. and wetlands, and search for suitable habitat for or presence of special-status species in the site. This letter report details the methodology and results of our investigation.

Methods

Prior to the field surveys, we conducted a search of California Department of Fish and Game's (CDFG) California Natural Diversity Database (CNDDB, 2004; 2006); a final search was undertaken in April 2010 (CNDDB, 2010). This information was used to identify wildlife and plant species that have been previously documented in the project vicinity or have the potential to occur based on suitable habitat and geographical distribution. The CNDDB search was conducted on the USGS 7.5-minute Lodi South topographic quadrangle, which is an area encompassing approximately 70 square miles surrounding the site.

10330 Twin Cities Rd., Ste. 30 • Galt, CA 95632
(209) 745-1159 • Fax (209) 745-7513
e-mail: moorebio@softcom.net



Scale: 1 inch = 9 miles

Source: Calif. State Automobile Association

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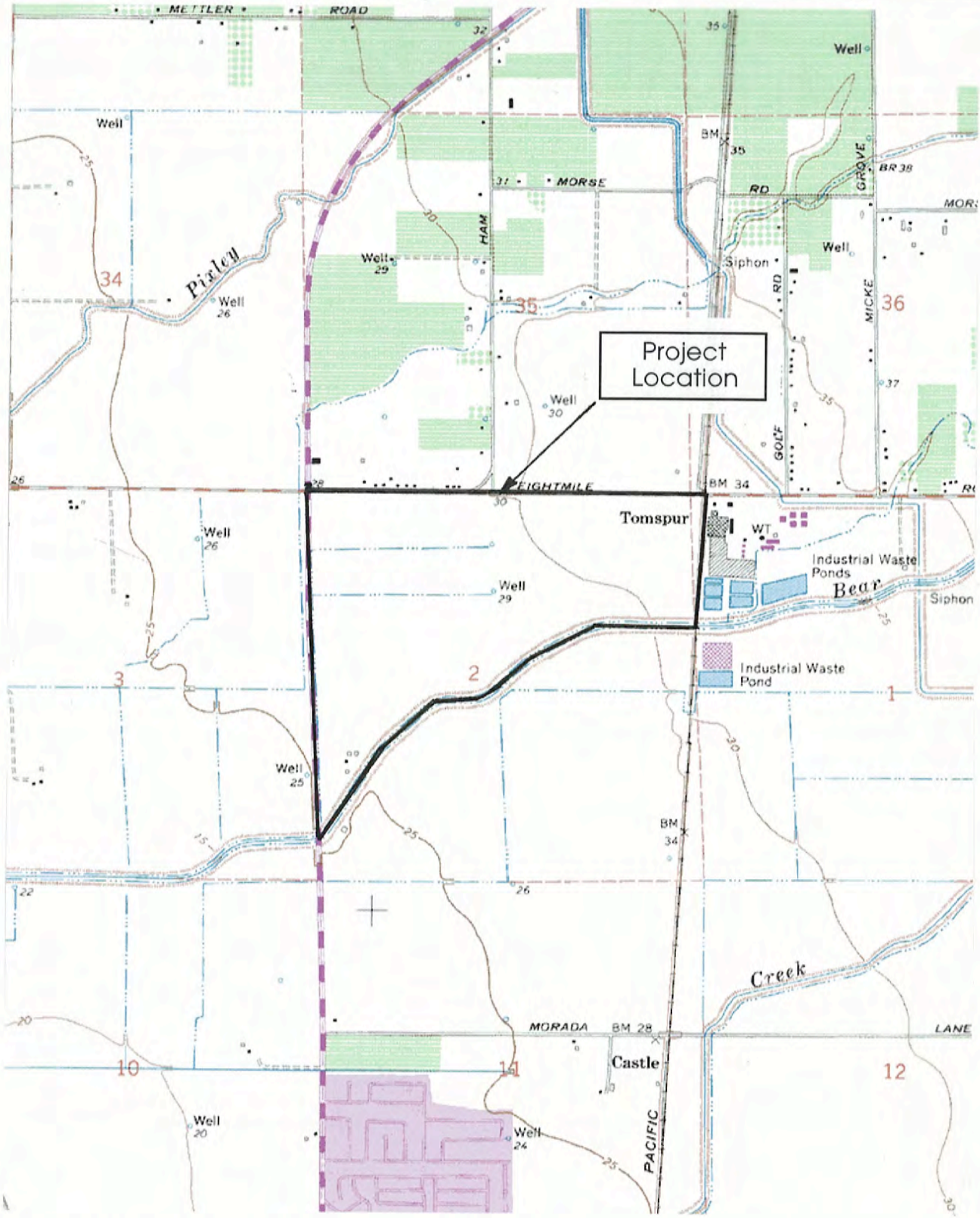
MOORE BIOLOGICAL

FIGURE 1

PROJECT VICINITY



Scale: 1 inch = 2,000 feet
Source: USGS 7.5-minute Lodi South topographic quadrangle

N

MOORE BIOLOGICAL

FIGURE 2
PROJECT LOCATION

Field surveys were conducted on March 25, 2005, May 17 and August 11, 2006, and May 17, 2010. The surveys consisted of driving and walking around the site, making observations and noting habitat conditions, surrounding land uses, and plant and wildlife species. We conducted a search for special-status species, and suitable habitat for special-status species (e.g., elderberry shrubs, vernal pools). Additionally, trees at and near the site was assessed for the potential use by nesting raptors, especially Swainson's hawk (*Buteo swainsoni*), and burrows in the area were inspected burrowing owls (*Athene cunicularia*) or evidence of past occupancy.

Waters of the U.S., including wetlands in the project site were delineated on May 17 and August 11, 2006 (Moore Biological Consultants. 2006). The wetland delineation was conducted in accordance with the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual and Regional Supplement (ACOE, 1987, 2008) and has been submitted to ACOE for verification.

Results

GENERAL SETTING: The project site is located north of Stockton, California (Figures 1). The site is within Section 2, Township 2 North, Range 6 East of the USGS 7.5-minute Lodi South topographic quadrangle (Figure 2). The site is generally flat from past land leveling, with site elevations ranging from 25 to 30 feet above mean sea level. The site primarily consists of annual cropland and alfalfa (see attached aerial and ground-level photographs).

Surrounding land uses in this rapidly urbanizing portion of San Joaquin County are primarily agricultural. Agricultural fields are located to the west across West Lane, to the south across Bear Creek, and to the east across the railroad tracks. There is also an abandoned cannery located to the east of the site. Areas to the north of the site across Eight Mile Road are primarily residential ranchettes; there is also a campground located to the north of the site. There is an in-holding

within the north-central portion of the site occupied by the SBC phone company and a trucking facility.

The project site primarily consists of fields that have been leveled and farmed in both annual and perennial crops in the past. The east part of the site is currently planted in corn and there is an alfalfa field in the southwest part of the site (see attached photographs).

VEGETATION: The field in the northwest part of the site is currently fallow. Vegetation in this field and other patches of grassland on the edges of the fields are vegetated with various native and non-native annual grass and weed species Grasses including oats (*Avena* sp.), soft chess brome (*Bromus hordeaceus*), ripgut brome (*B. diandrus*), foxtail barley (*Hordeum murinum*), Bermuda grass (*Cynodon dactylon*), and perennial ryegrass (*Lolium perenne*) are dominant grass species on-site. Other grassland species such as fiddleneck (*Amsinckia menziesii*), black mustard (*Brassica nigra*), bull thistle (*Cirsium vulgare*), prickly lettuce (*Lactuca serriola*), pigweed (*Amaranthus albus*), dove weed (*Eremocarpus setigerus*), common mallow (*Malva neglecta*), and filaree (*Erodium botrys*) are intermixed with the grasses. Table 1 is a list of plant species observed in the site.

Vegetation along the fringes of Bear Creek consists of emergent wetland species including tule (*Scirpus acutus*), water primrose (*Ludwigia peploides*), cattail (*Typha* sp.), Mediterranean barley (*Hordeum marinum*), umbrella sedge (*Cyperus eragrostis*) and California wild rose (*Rosa californica*).

Trees and shrubs within the project site consist primarily of ornamentals located near a home site that was in the southwestern portion of the site. Trees include cedar (*Cedrus deodara*), pine (*Pinus* sp.), buckeye (*Aesculus californicus*), and tree-of-heaven (*Ailanthus altissima*). No blue elderberry (*Sambucus* sp.) shrubs were observed within or adjacent to the project site.

TABLE 1
PLANT SPECIES OBSERVED IN THE SITE

Acer negundo	box elder
Ailanthus altissima	tree-of-heaven
Aira caryophyllea	European hairgrass
Amaranthus albus	pigweed
Amsinckia intermedia	fiddleneck
Avena sp.	oat
Brassica nigra	black mustard
Brassica rapa	field mustard
Briza minor	quaking grass
Bromus diandrus	ripgut brome
Bromus hordeaceus	soft chess brome
Capsella bursa pastoris	shepherds purse
Carduus pycnocephalus	Italian thistle
Centaurea solstitialis	yellow star-thistle
Convolvulus arvenis	morning glory
Conyza canadensis	horseweed
Cirsium vulgare	bull thistle
Cynodon dactylon	Bermuda grass
Cyperus eragrostis	umbrella sedge
Dactylis glomerata	orchard grass
Daucus carota	wild carrot
Eleocharis macrostachya	creeping spikerush
Epilobium angustifolium	fireweed
Epilobium brachycarpum	willow weed
Eremocarpus setigerus	doveweed
Erodium botrys	filaree
Erodium cicutarium	red-stem filaree
Ficus carica	edible fig
Foeniculum vulgare	sweet fennel
Gallium sp.	bedstraw
Geranium spp.	geranium
Hordeum marinum	Mediterranean barley
Hordeum murinum	foxtail barley

TABLE 1 (continued)
PLANT SPECIES OBSERVED IN THE SITE

Hypochaeris glabra	smooth cat's ear
Juglans californicus	black walnut
Juncus sp.	rush
Lactuca serriola	prickly lettuce
Lolium perenne	perennial ryegrass
Ludwigia peploides	water primrose
Lupinus sp.	lupine
Malva neglecta	common mallow
Paspalum dilatatum	dallis grass
Picris echioides	bristly ox-tongue
Pinus sp.	pine
Quercus lobata	valley oak
Quercus suber	cork oak
Raphanus sativus	wild radish
Robinia pseudoacacia	black locust
Rosa californica	California wild rose
Rubus discolor	Himalayan blackberry
Rumex crispus	curly dock
Salix sp.	willow
Salsola tragus	tumbleweed
Scirpus acutus	tule
Silybum marianum	milk thistle
Sonchus asper	prickly sow-thistle
Sonchus oleraceous	sow thistle
Sorghum halepense	Johnson grass
Tribulus terrestris	puncture vine
Typha sp.	cattail
Urtica urens	dwarf nettle
Verbena hastata	common verbena
Vicia sativa	common vetch
Vulpia myuros	rattail fescue
Xanthium strumarium	cocklebur

There are three valley oak (*Quercus lobata*) trees located in the south portion of the site near the toe of the landward side of the Bear Creek levee. At least one of these oaks appears to be large enough to fall into San Joaquin County's classification of "Heritage Oaks" (i.e., trunk diameter of 32 inches or greater measured 4.5 feet above ground level).

WILDLIFE: A limited number of wildlife species were observed in the site. Some of the more common birds observed include red-tailed hawk (*Buteo jamaicensis*), yellow-billed magpie (*Pica nuttalli*), northern mockingbird (*Mimus polyglottos*), mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), northern mockingbird (*Mimus polyglottos*), yellow-billed magpie (*Pica nuttalli*), western scrub jay (*Aphelocoma coerulescens*), and red-winged blackbird (*Agelaius phoeniceus*). All of these are species commonly found in rural areas in the greater project vicinity (Table 2).

There are a few potential nest trees in the site that are suitable for nesting raptors and other protected migratory birds, including Swainson's hawk. Given the size of the site, the presence of nesting habitat (large trees), as well as the presence of foraging habitat (large open fields), it is considered likely one or more pairs of raptors, plus a variety of songbirds, nest in the site each year.

A limited variety of mammals common to agricultural and semi-rural areas occur in the project site. Desert cottontail (*Sylvilagus audubonii*), muskrat (*Ondatra zibethicus*), and ground squirrels (*Spermophilus beecheyi*) were the only mammals observed at the site. Coyote (*Canis latrans*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*) and opossum (*Didelphis virginiana*) are expected to occur at the site. A number of species of small rodents including mice (*Mus musculus, Reithrodontomys megalotis,* and *Peromyscus maniculatus*) and voles (*Microtus californicus*) also likely occur.

Based on habitat types present, a limited variety of amphibians and reptiles are expected to use habitats in the site. Pacific chorus frog (*Pseudacris regilla*) was

TABLE 2

WILDLIFE SPECIES OBSERVED IN THE SITE

Birds	
Great blue heron	*Ardea herodias*
Great egret	*Casmerodius albus*
Mallard	*Anas platyrhynchos*
Turkey vulture	*Cathartes aura*
Swainson's hawk	*Buteo swainsoni*
Red-tailed hawk	*Buteo jamaicensis*
American kestrel	*Falco sparverius*
Killdeer	*Charadrius vociferus*
Rock dove	*Columba livia*
Mourning dove	*Zenaida macroura*
Barn swallow	*Hirundo rustica*
Western scrub jay	*Aphelocoma coerulescens*
Yellow-billed magpie	*Pica nuttalli*
American crow	*Corvus brachyrhynchos*
American robin	*Turdus migratorius*
Red-winged blackbird	*Agelaius phoeniceus*
Northern mockingbird	*Mimus polyglottos*
Song sparrow	*Melospiza melodia*
House finch	*Carpodacus mexicanus*
Mammals	
California ground squirrel	*Spermophilus beecheyi*
Desert cottontail	*Sylvilagus audubonii*
Muskrat	*Ondatra zibethicus*
Amphibians and Reptiles	
Western fence lizard	*Sceloporus occidentalis*
Pacific chorus frog	*Pseudacris regilla*

the only amphibian observed in the site; western fence lizard (*Sceloporus occidentalis*) was the only reptiles observed. Although none were observed, the site and surrounding lands provide suitable habitat for species including coast horned lizard (*Phrynosoma coronatum*), western toad (*Bufo boreas*), common king snake (*Lampropeltis getulus*), gopher snake (*Pituophis melanoleucus*), and common garter snake (*Thamnophis sirtalis*).

WATERS OF THE U.S. AND WETLANDS: Waters of the U.S., including wetlands, are broadly defined under 33 Code of Federal Regulations (CFR) 328 to include navigable waterways, many of their tributaries, and adjacent wetlands. State and federal agencies regulate these habitats and Section 404 of the Clean Water Act requires that a permit be secured prior to the discharge of dredged or fill materials into waters of the U.S. Both CDFG and ACOE have jurisdiction over modifications to riverbanks, lakes, stream channels and other wetland features.

Although definitions vary to some degree, wetlands are generally considered to be areas that are periodically or permanently inundated by surface or ground water, and support vegetation adapted to life in saturated soil. Jurisdictional wetlands are vegetated areas that meet specific vegetation, soil, and hydrologic criteria defined by the ACOE *Wetlands Delineation Manual* and Regional Supplement (ACOE, 1987; 2008). Waters of the U.S. are drainage features or water bodies as described in 33 CFR 328.4. Currently, ACOE and the U.S. Environmental Protection Agency (EPA) share authority to determine the jurisdictional status of waters of the U.S., including wetlands.

Jurisdictional wetlands and Waters of the U.S. include, but are not limited to, perennial and intermittent creeks and drainages, lakes, seeps, and springs; emergent marshes; riparian wetlands; and seasonal wetlands. Wetlands and Waters of the U.S. provide critical habitat components, such as nest sites and a reliable source of water, for a wide variety of wildlife species.

There are a few potential waters of the U.S., including wetlands, located throughout the project site that may fall under the jurisdiction of ACOE and CDFG. A total of 7.47 acres of potential waters of the U.S. and wetlands were delineated within the project site. This acreage consists of a portion of Bear Creek (5.87 acre), a pair of parallel irrigation laterals (0.68 acres), two detention basins (0.43 acres), and a roadside ditch along Eight Mile Road and West Lane (0.49 acres).

Bear Creek, which flows east to west across the southern edge of the site, is a Waters of the U.S. under the jurisdiction of both ACOE and CDFG. There is a levee along this section of Bear Creek, providing clear separation between jurisdictional waters and adjacent farmlands.

There are two well-developed agricultural ditches located within the site that have potential to fall under ACOE jurisdiction due to connectivity with Bear Creek via culverts. Smaller annually installed irrigation ditches in the site are believed to be non-jurisdictional because they originate and terminate on site, are created, and hydrologically manipulated for crop irrigation. Similarly, the two detention basins and the roadside ditch are believed to be non-jurisdictional because they were excavated in uplands and are maintained. The jurisdictional status of these created features will be established when ACOE verifies the wetland delineation.

SPECIAL-STATUS SPECIES: Special-status species are plants and animals that are legally protected under the state and/or federal Endangered Species Act or other regulations. The Federal Endangered Species Act (FESA) of 1973 declares that all federal departments and agencies shall utilize their authority to conserve endangered and threatened plant and animal species. The California Endangered Species Act (CESA) of 1984 parallels the policies of FESA and pertains to native California species. Both FESA and CESA prohibit unauthorized "take" (i.e., killing) of listed species, with take broadly defined in both acts to include activities such as harassment, pursuit and possession.

Special-status wildlife species also includes species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts, and other essential habitat. The federal Migratory Bird Treaty Act and Fish and Game Code of California protect special-status bird species year-round, as well as their eggs and nests during the nesting season. Fish and Game Code of California also provides protection for mammals and fish.

Special-status plants include species which are designated rare, threatened, or endangered and candidate species for listing by the U.S. Fish and Wildlife Service (USFWS). Special-status plants also include species considered rare or endangered under the conditions of Section 15380 of the California Environmental Quality Act (CEQA) Guidelines, such as those plant species identified on Lists 1A, 1B and 2 in the Inventory of Rare and Endangered Vascular Plants of California by the California Native Plant Society (CNPS, 2001). Finally, special-status plants may include other species that are considered sensitive or of special concern due to limited distribution or lack of adequate information to permit listing or rejection for state or federal status, such as those included on List 3 in the CNPS Inventory.

Table 3 provides a summary of the listing status and habitat requirements of special-status plant and wildlife species that have been documented in the greater project vicinity or for which there is potentially suitable habitat within the site. This table also includes an assessment of the likelihood of occurrence of each of these species within the site. The evaluation of the potential for occurrence of each species is based on the distribution of regional occurrences (if any), habitat suitability, and field observations.

Based on the level of disturbance from past and ongoing farming practices, the likelihood of occurrence of listed, candidate, and other sensitive species in the project site is considered to be generally low. A few sensitive species of regional

TABLE 3

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status[1]	State Status[2]	CNPS List[3]	Habitat	Potential for Occurrence in the Site
PLANTS						
Mason's lilaeopsis	*Lilaeopsis masonii*	None	R	1B	Freshwater and brackish marshes, riparian scrub.	Unlikely: Bear Creek and the various irrigation canals and ditches on site do not provide suitable habitat for this species. The nearest occurrence of Mason's lilaeopsis is located in the delta, approximately 3.5 miles southwest of the site (CNDDB, :2010).
WILDLIFE						
Swainson's hawk	*Buteo swainsoni*	None	T	N/A	Nesting: large trees, usually within riparian corridors. Foraging: agricultural fields and annual grasslands.	Moderate: the site provides cropland that Swainson's hawks use for foraging, as well as suitable nest trees. The nearest occurrence of nesting Swainson's hawk is located approximately 1 mile southwest of the site (CNDDB, 2010).
Burrowing owl	*Athene cunicularia*	None	SC	N/A	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation.	Low: the site contains suitable burrowing habitat, but no burrowing owls or evidence of past owl occupancy were found at the site. Burrowing owls are documented in the CNDDB (2010) approximately 2 miles southeast of the site.
Sensitive salmonids.	*Oncorhynchus mykiss, O. tshawytscha*	None	SC	N/A	Spawns in streams with adequate spawning substrate (cobbles and gravel) and water temperature.	Unlikely: any use of Bear Creek by salmonids (i.e., trout and salmon) would be considered accidental. Further, Bear Creek does not serve as spawning or rearing habitat for salmonids.

TABLE 3

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status[1]	State Status[2]	CNPS List[3]	Habitat	Potential for Occurrence in the Site
Western pond turtle	*Actinemys marmorata*	None	SC	N/A	Freshwater marsh and low gradient streams. Requires basking sites such as logs and snags.	Unlikely: Bear Creek serves as potentially suitable habitat for western pond turtle. However, this species was not observed during the site surveys and is not recorded in the CNDDB (2010) search area.
Giant garter snake	*Thamnophis gigas*	T	T	N/A	Freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches.	Unlikely: Bear Creek provides very marginal habitat for giant garter snake. This species has not been observed in the project vicinity for several decades; the nearest documented sighting of this species is a 1976 observation at Eight Mile Road and the Western Pacific Rail Road tracks, 1+/- mile west of the site (CNDDB, 2010).
Vernal pool tadpole shrimp	*Lepidurus packardi*	E	None	N/A	Vernal pools	Unlikely: there are no vernal pools at the project site. The only occurrence of vernal pool tadpole shrimp in the CNDDB (2010) search area is several miles north of the project site, near Lodi.

1 T = Threatened; E = Endangered.

2 T = Threatened; R = Rare; SC= State of California Species of Special Concern.

3 CNPS List 1B includes species that are rare, threatened, or endangered in California and elsewhere.

concern with the greatest potential of occurrence or for which there is potential habitat at the site are further discussed in detail below.

SPECIAL-STATUS PLANTS: No special-status plants were observed during the recent surveys. Special-status plants found within the greater project vicinity generally occur in relatively undisturbed areas and are largely found in vegetation communities not present within the project site. Rare plants that occur within the greater project vicinity are found in habitats such as marshes, swamps and riparian scrub, which are not found in or adjacent to the project site. Mason's lilaeopsis (*Lilaeopsis masonii*) is the only sensitive plant species reported in the CNDDB (2010) in the search area (i.e., the Lodi South topographic quadrangle). Bear Creek and some of the on-site irrigation canals and ditches provide very low quality habitat for Mason's lilaeopsis, which is mostly known from habitats in the San Joaquin Delta several miles west of the site.

SPECIAL-STATUS WILDLIFE: The potential for intensive use of habitats within the project site by sensitive wildlife species is generally considered low. Sensitive wildlife species that have been recorded in greater project vicinity in the CNDDB (2010) include Swainson's hawk, burrowing owl (*Athene cunicularia*), giant garter snake (*Thamnophis gigas*), and vernal pool tadpole shrimp (*Lepidurus packardi*). Swainson's hawk and burrowing owl have at least a low potential to occur within the project site on more than a transitory or very occasional basis. These species could be adversely affected by site construction if they nested on or near the project site during construction and are discussed further below. Giant garter snake, western pond turtle, and sensitive fish are also discussed below due to the presence of Bear Creek within the site.

SWAINSON'S HAWK: The Swainson's hawk is a migratory hawk listed by the State of California as a Threatened species. The Migratory Bird Treaty Act and Fish and Game Code of California protect Swainson's hawks year-round, as well as their nests during the nesting season (March 1 through September 15).

Swainson's hawk are found in the Central Valley primarily during their breeding season, a population is known to winter in the San Joaquin Valley.

Swainson's hawks prefer nesting sites that provide sweeping views of nearby foraging grounds consisting of grasslands, irrigated pasture, hay, and wheat crops. Most Swainson's hawks are migratory, wintering in Mexico and breeding in California and elsewhere in the western United States. This raptor generally arrives in the Central Valley in mid-March, and begins courtship and nest construction immediately upon arrival at the breeding sites. The young fledge in early July, and most Swainson's hawks leave their breeding territories by late August.

The CNDDB (2010) contains several records of nesting Swainson's hawk in the greater project vicinity. Further, the project site provides suitable foraging habitat for this species and there are suitable nest trees located within and surrounding the site. While on-site nesting was not confirmed, Swainson's hawks were observed foraging during the 2005 and 2006 surveys.

BURROWING OWL: The Migratory Bird Treaty Act and Fish and Game Code of California protect burrowing owls year-round, as well as their nests during the nesting season (February 1 through August 31). Burrowing owls are a year-long resident in a variety of grasslands as well as scrub lands that have a low density of trees and shrubs with low growing vegetation; burrowing owls that nest in the Central Valley may winter elsewhere.

The primary habitat requirement of the burrowing owl is small mammal burrows for nesting. The owl usually nests in abandoned ground squirrel burrows, although they have been known to dig their own burrows in softer soils. In urban areas, burrowing owls often utilize artificial burrows including pipes, culverts, and piles of concrete pieces. This semi-colonial owl breeds from March through August, and is most active while hunting during dawn and dusk. Burrowing owls

are documented in the CNDDB (2010) in two locations in the search area, with the closest occurrence being approximately 2 miles southeast of the site.

There are ground squirrels and ground squirrel burrows within the site, although no burrowing owl signs (i.e., whitewash, pellets, feathers) were observed in any of the burrows. The burrows within the site are located along the field margins, dirt roads, railroad tracks and the Bear Creek levee). Intensive agriculture and development within and surrounding the site substantially reduce the likelihood of owls potentially using the site for nesting. However, this species likely flies over the site on an occasional basis and could nest in the site during some years.

GIANT GARTER SNAKE: The giant garter snake is listed as a Threatened species on the state and federal endangered species acts. This species is associated with freshwater marshes, low gradient streams, and has adapted to drainage canals and irrigation ditches within the Central Valley. The habitat requirements for the giant garter snake and distribution within San Joaquin County are described in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (HCP) (SJCOG, 2000). Bear Creek is not included in the HCP list of creeks as providing potential habitat for the species.

There was an observation of giant garter snake in 1976 within Pixley Slough, approximately 1 mile west of the site along Eight Mile Road and the Western Pacific Rail Road tracks. However, when follow-up surveys were conducted by CDFG at this location over a three-day period in 1995, no giant garter snakes were observed and the habitat was rated only as "fair" at the site (Hansen, 1995). Within the search area, the CNDDB contains no other occurrences of giant garter snake. The likelihood of occurrence of this species in the project site is considered low; giant garter snake has not been found in Bear Creek has not been documented in the greater project vicinity in the recent past.

WESTERN POND TURTLE: Western pond turtle is considered a Species of Concern by CDFG. This species is found in association with perennial aquatic habitats or

in permanent pools in intermittent streams in a variety of habitat types. The CNDDB (2006) does not contain any records of western pond turtle within the Lodi South topographic quadrangle, but there is one in the Terminous topographic quadrangle, approximately 5 miles northwest of the site. While Bear Creek provides marginally suitable habitat for western pond turtle, none were observed during the site surveys.

SENSITIVE FISH: A number of sensitive fish species occur in Delta waterways during various times of the year. These include delta smelt (*Hypomesus transpacificus*), fall/late-fall run, spring-run and winter-run chinook salmon (*Oncorhynchus tshawytscha*), Central Valley steelhead (*O. mykiss*), green sturgeon (*Acipenser medirostris*), river lamprey (*Lampetra ayersi*), Pacific lamprey (*Lampetra tridentata*), and longfin smelt (*Spirinchus thaleichthys*). It is considered likely that some of these sensitive fish utilize Bear Creek, at least on a seasonal basis. However, sensitive fish would not be expected to occur in the on-site portion of Bear Creek on more than a very occasional basis, if at all, due to lack of suitable spawning and rearing habitat.

Conclusions and Recommendations

- The site consists of annual cropland, alfalfa, and an industrial facility. Virtually all of the lands in the site are either intensively cultivated or highly disturbed, and biologically unremarkable.

- Due to lack of suitable habitat, the likelihood of occurrence of special-status plants within the site is considered very low.

- Development of the site may involve removal of a handful of oaks. On-site oaks should be inventoried by an arborist; this inventory should be conducted pursuant to San Joaquin County and/or City of Stockton standards. Heritage oaks should be retained and incorporated into the

project design, if possible. Alternately, if heritage oaks need to be removed, this should be undertaken pursuant to either the San Joaquin County Development Title or City of Stockton ordinance for heritage oaks, both of which require replacement plantings.

- A total of 7.47 acres of potential waters of the U.S. and wetlands were delineated within the project site. This acreage consists of a portion of Bear Creek (5.87 acre), a pair of parallel irrigation laterals (0.68 acres), two detention basins (0.43 acres), and a roadside ditch along Eight Mile Road and West Lane (0.49 acres).

- Bear Creek is Waters of the U.S., which falls under the jurisdiction of agencies including ACOE, CDFG, the State Reclamation Board, and the California Regional Water Quality Control Board (RWQCB).

- Irrigation ditches, detention basins, and a roadside ditch in the site could also fall under the jurisdiction of ACOE. Some of the ditches are connected with Bear Creek, which could trigger jurisdiction due to the hydrological relationship with jurisdictional waters of the U.S. Other ditches and the detention basins are believed to be non-jurisdictional because they were created and/or are not tributary to Bear Creek. The jurisdictional status of these created feature will be established when ACOE verifies the wetland delineation.

- Jurisdictional waters of the U.S. should be avoided to the maximum extent practicable through thoughtful project design. If fill (i.e. utility lines, structures, culverts, road crossings, outfall structures, etc.) is to be placed within jurisdictional waters of the U.S., including wetlands, wetland permits and/or certification may be required from ACOE, CDFG, and Regional Water Quality Control Board.

- Development of the project site will result in a loss of Swainson's hawk foraging habitat, and will contribute to a cumulative loss of Open Space and associated biological resource values. Mitigation for the loss Open Space may be accomplished through participation in the HCP.

- If the project participates in the HCP, standard Take Avoidance measures outlined in the HCP for nesting Swainson's hawks and burrowing owl should be undertaken. Otherwise, pre-construction surveys for nesting Swainson's hawks within 0.25 miles of the project site and burrowing owls within 250 feet of the site should be conducted for construction activities between March 1 and September 15 (for hawks) and February 1 through August 31 (for owls). If active nests are found, a qualified biologist should determine the need (if any) for temporal restrictions on construction. These determination(s) should be made pursuant to criteria set forth by CDFG (1994) and/or CDFG (1995).

- Trees in the site could be used by nesting raptors and other protected birds. In the event any trees that need to be removed or trimmed to facilitate the project, they should be felled or trimmed outside of the general bird nesting season (February 1 through August 31) or a nesting bird survey should be conducted immediately prior to tree removal. If active nests are found, tree felling should be delayed until the young have fledged.

Thank you, again, for asking Moore Biological Consultants to assist with the project. Please feel free to call me at (209) 745-1159 with any questions.

Sincerely,

Diane S. Moore, M.S.
Principal Biologist

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Stantec

BEAR CREEK EAST

PROJECT BOUNDARY AERIAL EXHIBIT

STOCKTON, CALIFORNIA

Alfalfa field in the southwest part of the site, looking north; 05/17/10.

Annual crop field in the northwest part of the site, looking east; 05/17/10.

Corn field in the east part of the site, looking southeast; 05/17/10.

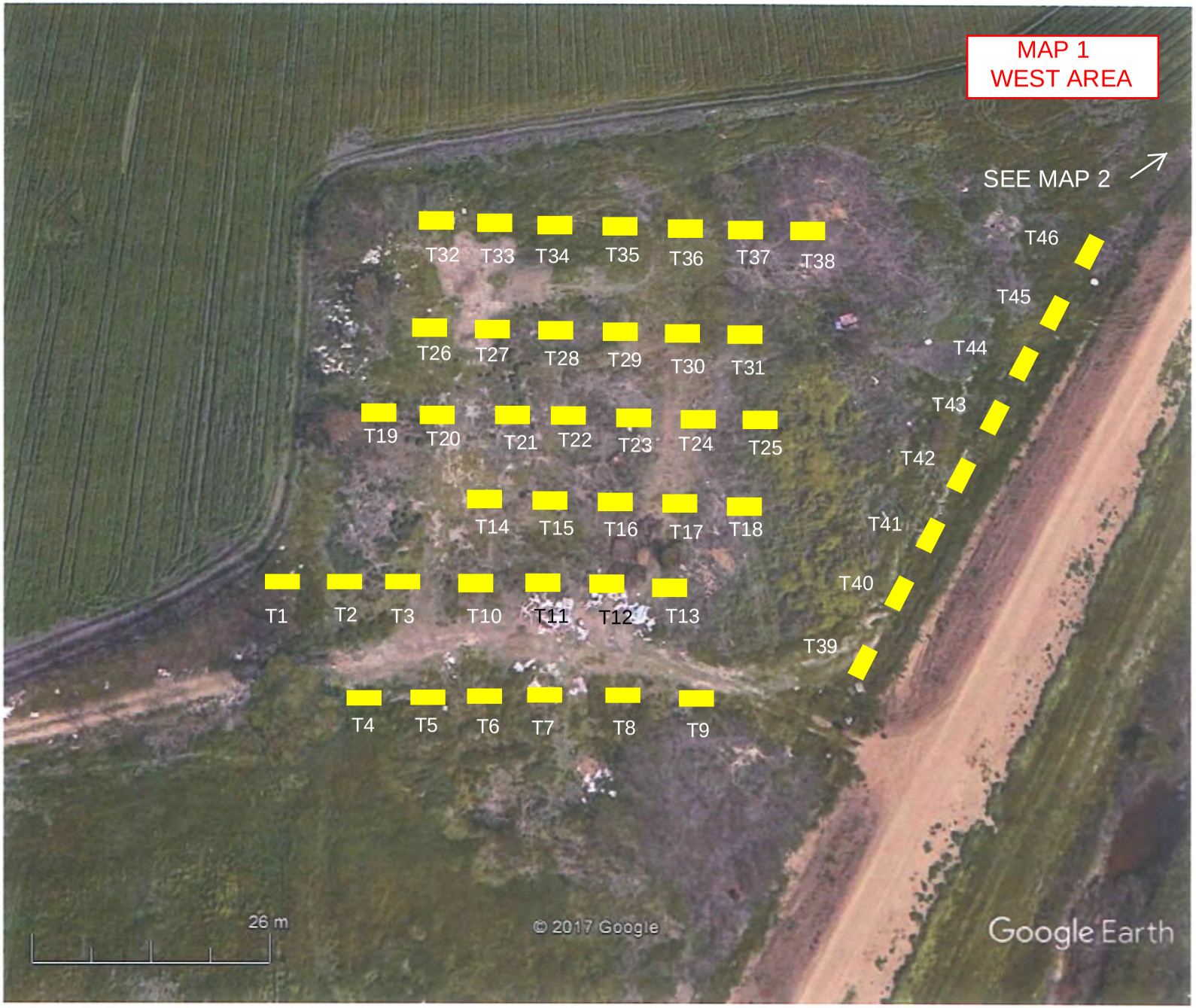
Ruderal strip of land along the railroad tracks on the east edge of the site, looking north; 05/17/10.

Middle section of Bear Creek, looking northeast; 05/17/10.

Detention basin in the north-central part of the site, looking east; 05/17/10.

Appendix G

Cultural Resources Information (Confidential)


MAP 1
WEST AREA
SEE MAP 2
T32
T33
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T41
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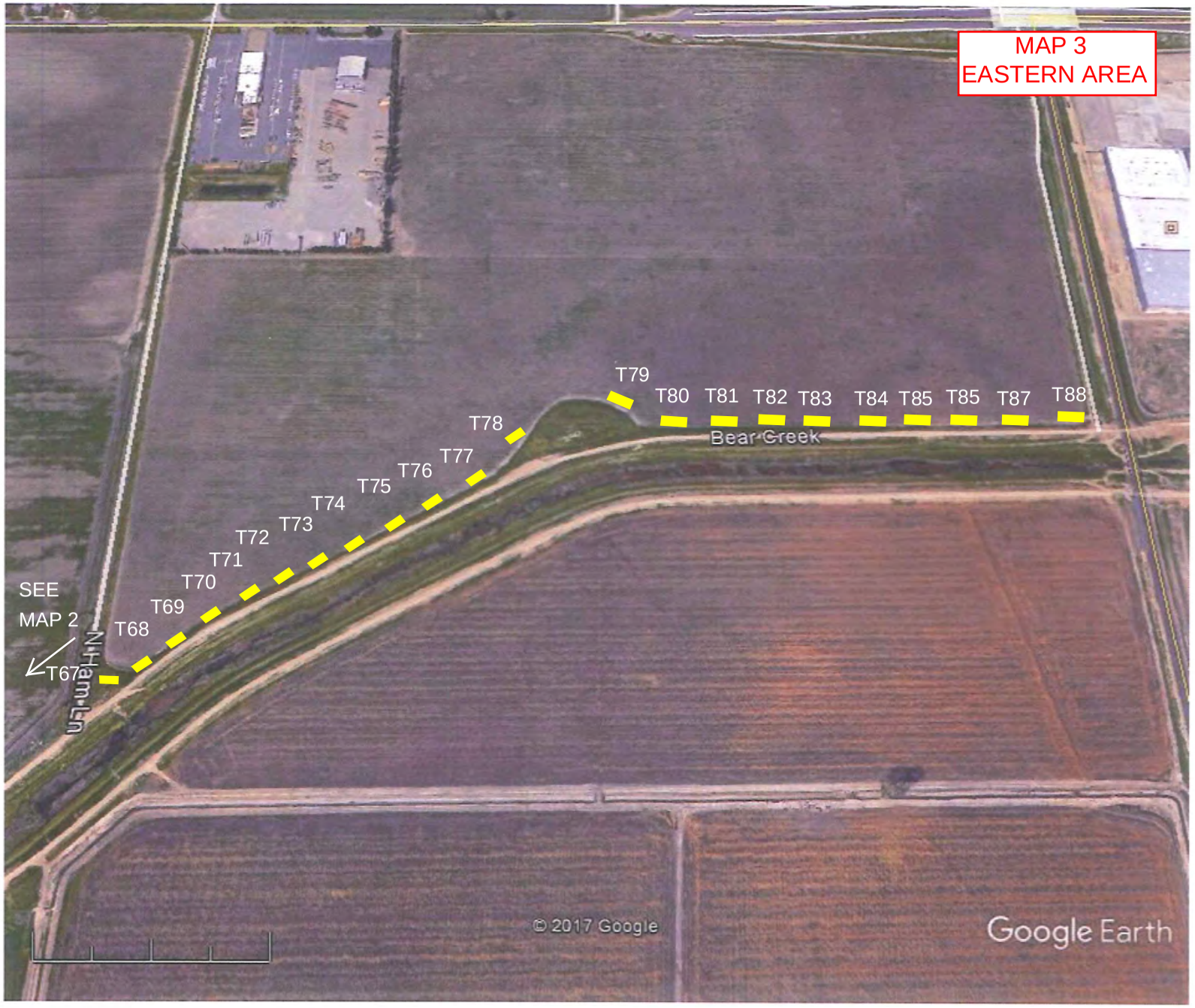
26 m
© 2017 Google
Google Earth

Google Earth
feet
meters
300
90
True
North



Google Earth

feet 1000

meters 500

True North

Google Earth

feet 1000

meters 400

True North

Appendix H

Hazards and Hazardous Materials Studies and Reports

TRACK ➤ INFO SERVICES, LLC

Environmental FirstSearch™ Report

Target Property: Bear Creek East Specific Plan

EIGHT MILE RD, WEST LN & BEAR CREEK

STOCKTON CA 95212

Job Number: 1563BCE

PREPARED FOR:

InSite Environmental, Inc.

6653 Embarcadero, Suite Q

Stockton, CA 95219

(209) 472-8653

03-12-10

Tel: (866) 664-9981 *Fax: (818) 249-4227*

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Environmental FirstSearch
Site Information Report

Request Date:	03-12-10	**Search Type:**	COORD
Requestor Name:	Victoria Jordan - Insite Env	**Job Number:**	1563BCE
Standard:	ASTM-05	**Filtered Report**	

Target Site: EIGHT MILE RD, WEST LN & BEAR CREEK
STOCKTON CA 95212

Demographics

Sites:	18	**Non-Geocoded:**	3	**Population:**	NA
Radon:	2.7 PCI/L				

Site Location

	Degrees (Decimal)	Degrees (Min/Sec)		UTMs
Longitude:	-121.288098	-121:17:17	**Easting:**	650194.824
Latitude:	38.056201	38:3:22	**Northing:**	4213228.235
			Zone:	10

Comment

Comment:

Additional Requests/Services

Adjacent ZIP Codes: 1.25 Mile(s)

ZIP Code	City Name	ST	Dist/Dir	Sel
95210	STOCKTON	CA	0.44 SW	Y
95240	LODI	CA	0.10 NE	Y
95242	LODI	CA	0.09 NW	Y

Services:

	Requested?	Date
Sanborns	No	
Aerial Photographs	No	
Historical Topos	No	
City Directories	No	
Title Search/Env Liens	No	
Municipal Reports	No	
Online Topos	No	

Environmental FirstSearch
Search Summary Report

Target Site: EIGHT MILE RD, WEST LN & BEAR CREEK
STOCKTON CA 95212

FirstSearch Summary

Database	Sel	Updated	Radius	Site	1/8	1/4	1/2	1/2>	ZIP	TOTALS
NPL	Y	02-23-10	1.25	0	0	0	0	0	0	0
NPL Delisted	Y	02-23-10	0.75	0	0	0	0	0	0	0
CERCLIS	Y	01-29-10	0.75	0	0	0	0	0	0	0
NFRAP	Y	01-29-10	0.75	0	0	0	0	0	0	0
RCRA COR ACT	Y	01-13-10	1.25	0	0	0	0	0	0	0
RCRA TSD	Y	01-13-10	0.75	0	0	0	0	0	0	0
RCRA GEN	Y	12-11-09	0.50	0	0	1	1	-	0	2
RCRA NLR	Y	12-11-09	0.25	0	0	2	-	-	0	2
Federal IC / EC	Y	01-19-10	0.50	0	0	0	0	-	0	0
ERNS	Y	02-08-10	0.25	0	1	1	-	-	0	2
Tribal Lands	Y	12-01-05	1.25	0	0	0	0	0	1	1
State/Tribal Sites	Y	02-08-10	1.25	0	0	0	0	0	1	1
State Spills 90	Y	03-11-10	0.25	0	0	0	-	-	0	0
State/Tribal SWL	Y	02-22-10	0.75	0	0	0	0	0	0	0
State/Tribal LUST	Y	03-01-10	0.75	0	0	0	1	1	0	2
State/Tribal UST/AST	Y	05-13-09	0.50	0	1	1	3	-	0	5
State/Tribal EC	Y	NA	0.50	0	0	0	0	-	0	0
State/Tribal IC	Y	03-02-10	0.50	0	0	0	0	-	0	0
State/Tribal VCP	Y	02-08-10	0.75	0	0	0	0	0	0	0
State/Tribal Brownfields	Y	NA	0.75	0	0	0	0	0	0	0
State Permits	Y	02-19-10	0.50	0	0	2	0	-	0	2
State Other	Y	02-08-10	0.50	0	0	0	0	-	1	1
- TOTALS -				0	2	7	5	1	3	18

Notice of Disclaimer

Due to the limitations, constraints, inaccuracies and incompleteness of government information and computer mapping data currently available to TRACK Info Services, certain conventions have been utilized in preparing the locations of all federal, state and local agency sites residing in TRACK Info Services's databases. All EPA NPL and state landfill sites are depicted by a rectangle approximating their location and size. The boundaries of the rectangles represent the eastern and western most longitudes; the northern and southern most latitudes. As such, the mapped areas may exceed the actual areas and do not represent the actual boundaries of these properties. All other sites are depicted by a point representing their approximate address location and make no attempt to represent the actual areas of the associated property. Actual boundaries and locations of individual properties can be found in the files residing at the agency responsible for such information.

Waiver of Liability

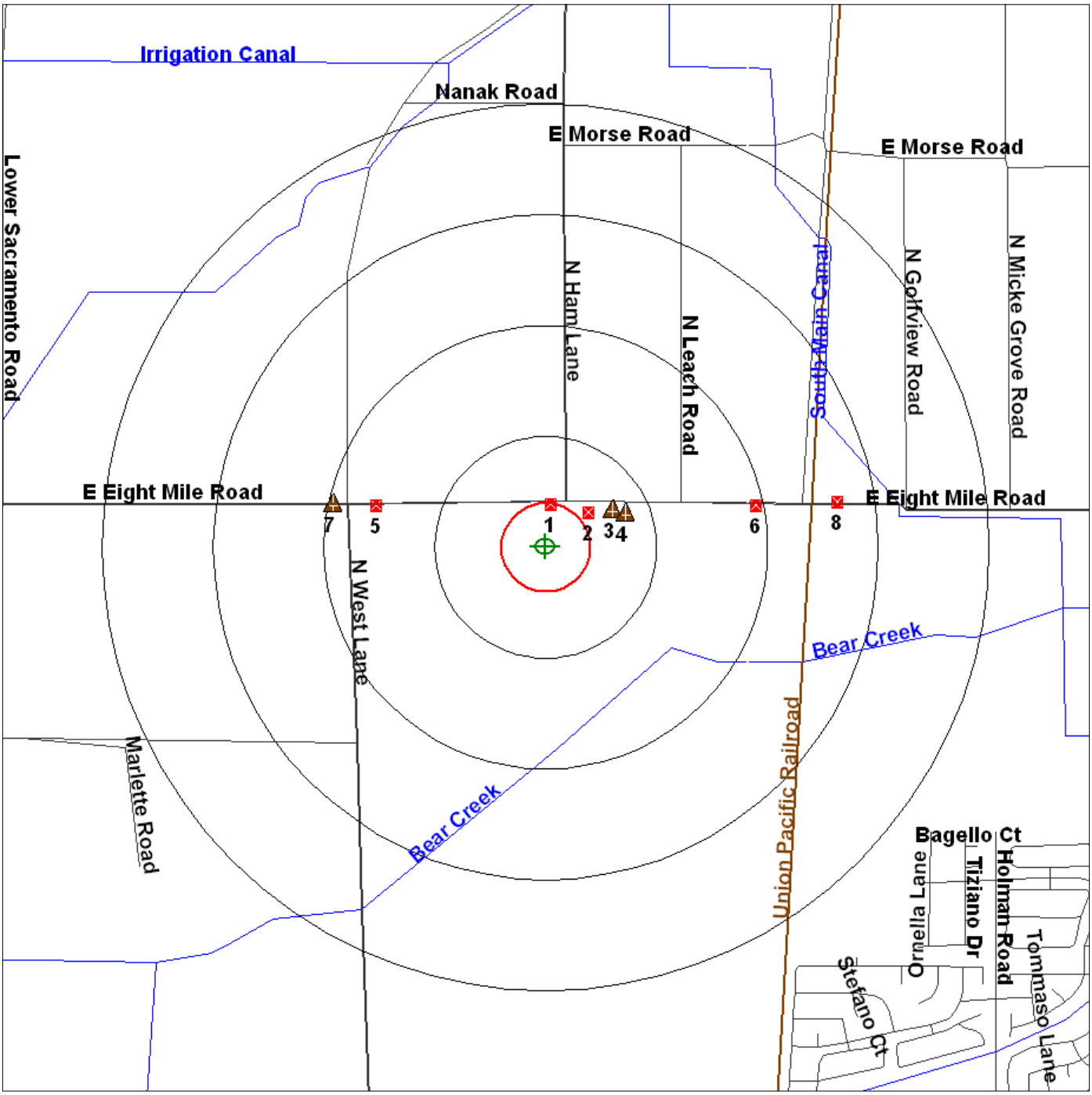
Although TRACK Info Services uses its best efforts to research the actual location of each site, TRACK Info Services does not and can not warrant the accuracy of these sites with regard to exact location and size. All authorized users of TRACK Info Services's services proceeding are signifying an understanding of TRACK Info Services's searching and mapping conventions, and agree to waive any and all liability claims associated with search and map results showing incomplete and or inaccurate site locations.

Environmental FirstSearch

1 Mile Radius

Single Map:

EIGHT MILE RD, WEST LN & BEAR CREEK, STOCKTON CA 9521:



Source: U.S. Census TIGER Files

Target Site (Latitude: 38.056201 Longitude: -121.288098) .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

Railroads .....

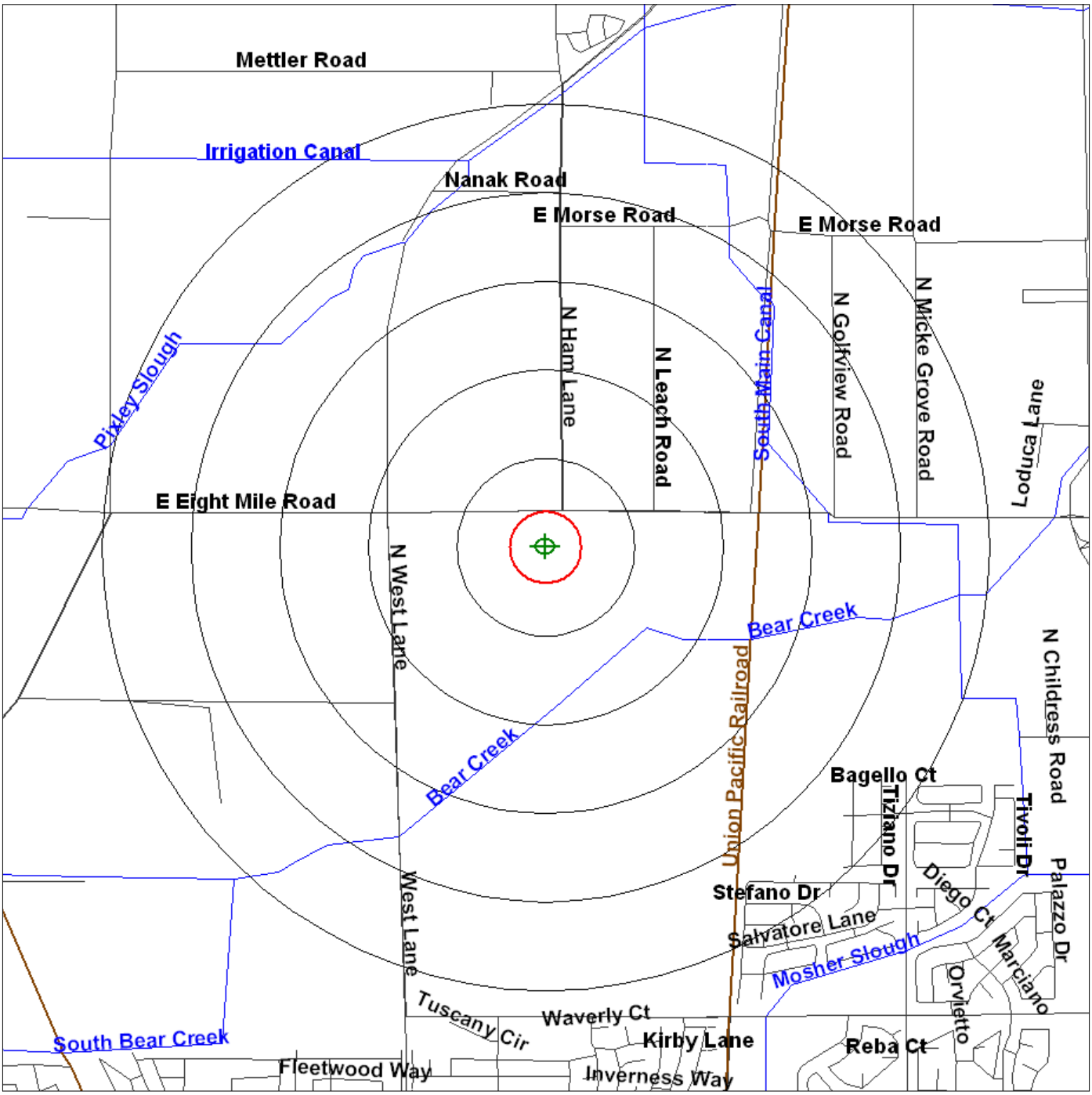
Black Rings Represent 1/4 Mile Radius; Red Ring Represents 500 ft. Radius

Environmental FirstSearch

1.25 Mile Radius

ASTM-05: NPL, RCRACOR, STATE

EIGHT MILE RD, WEST LN & BEAR CREEK, STOCKTON CA 9521:



Source: U.S. Census TIGER Files

Target Site (Latitude: 38.056201 Longitude: -121.288098) .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

Railroads .....

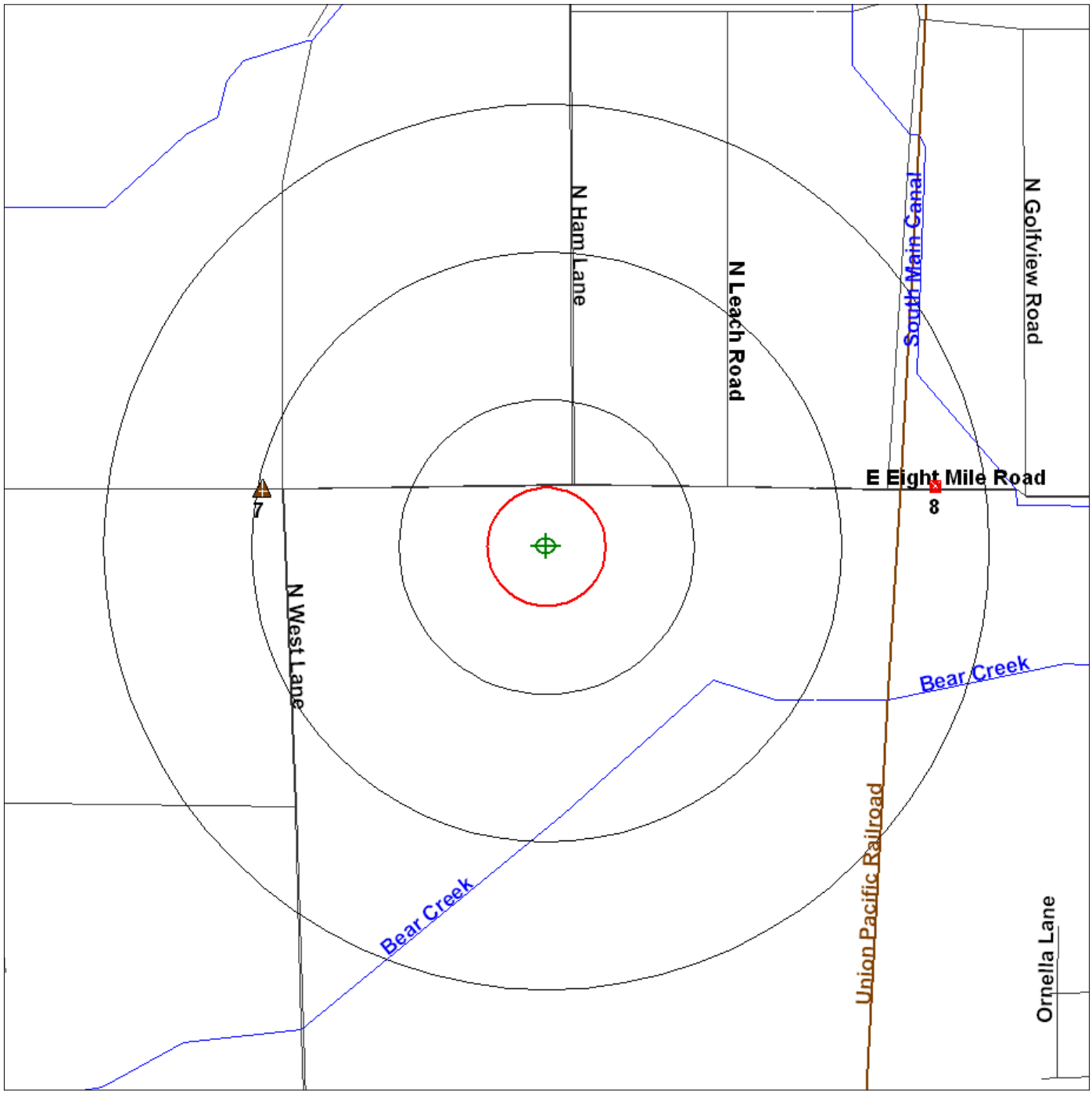
Black Rings Represent 1/4 Mile Radius; Red Ring Represents 500 ft. Radius

Environmental FirstSearch

.75 Mile Radius

ASTM-05: Multiple Databases

EIGHT MILE RD, WEST LN & BEAR CREEK, STOCKTON CA 9521:



Source: U.S. Census TIGER Files

Target Site (Latitude: 38.056201 Longitude: -121.288098) .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

Railroads .....

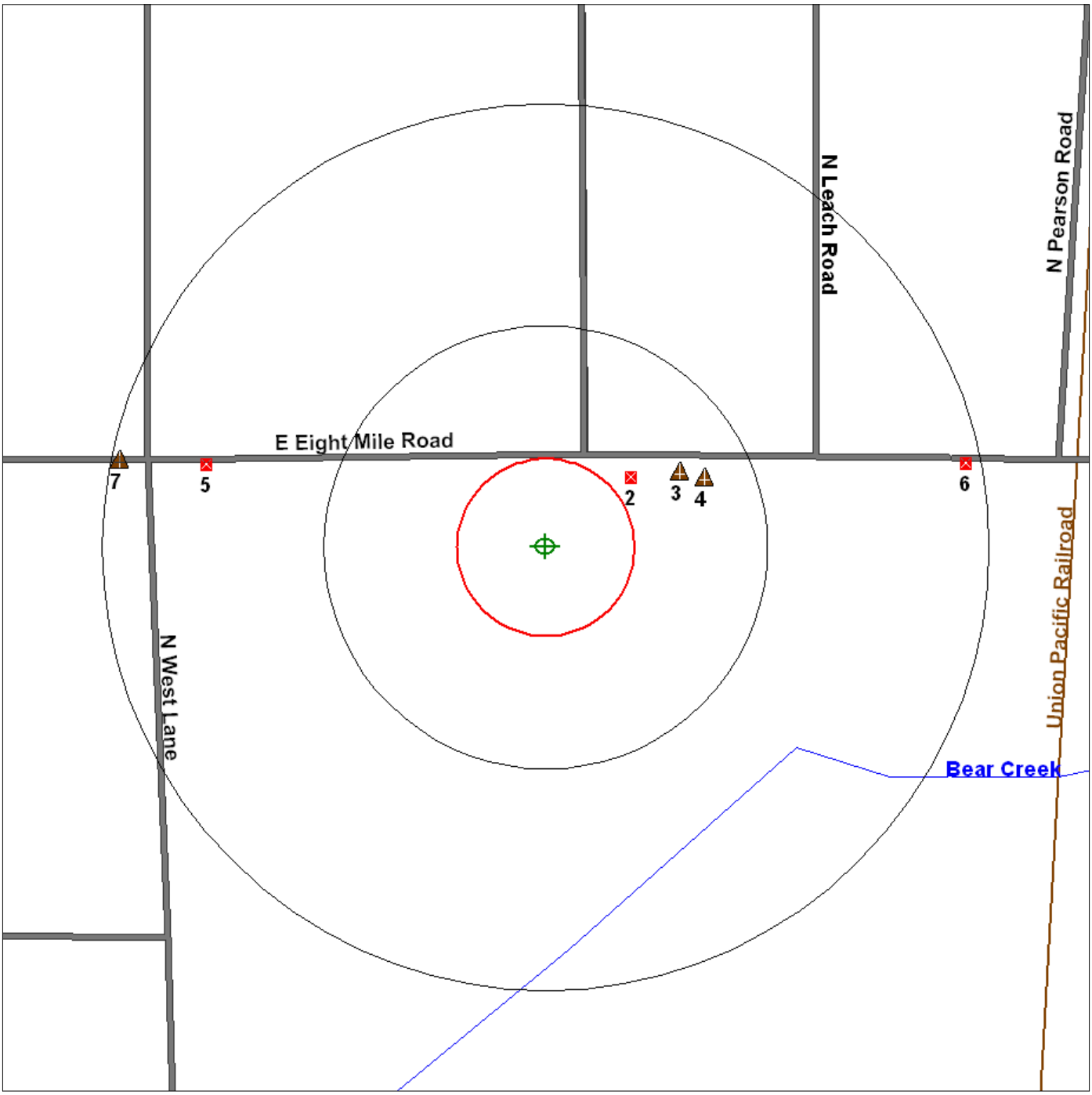
Black Rings Represent 1/4 Mile Radius; Red Ring Represents 500 ft. Radius

Environmental FirstSearch

.5 Mile Radius

ASTM-05: RCRAGEN, UST, PERMITS, OTHER

EIGHT MILE RD, WEST LN & BEAR CREEK, STOCKTON CA 9521:



Source: U.S. Census TIGER Files

Target Site (Latitude: 38.056201 Longitude: -121.288098) .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

Railroads .....

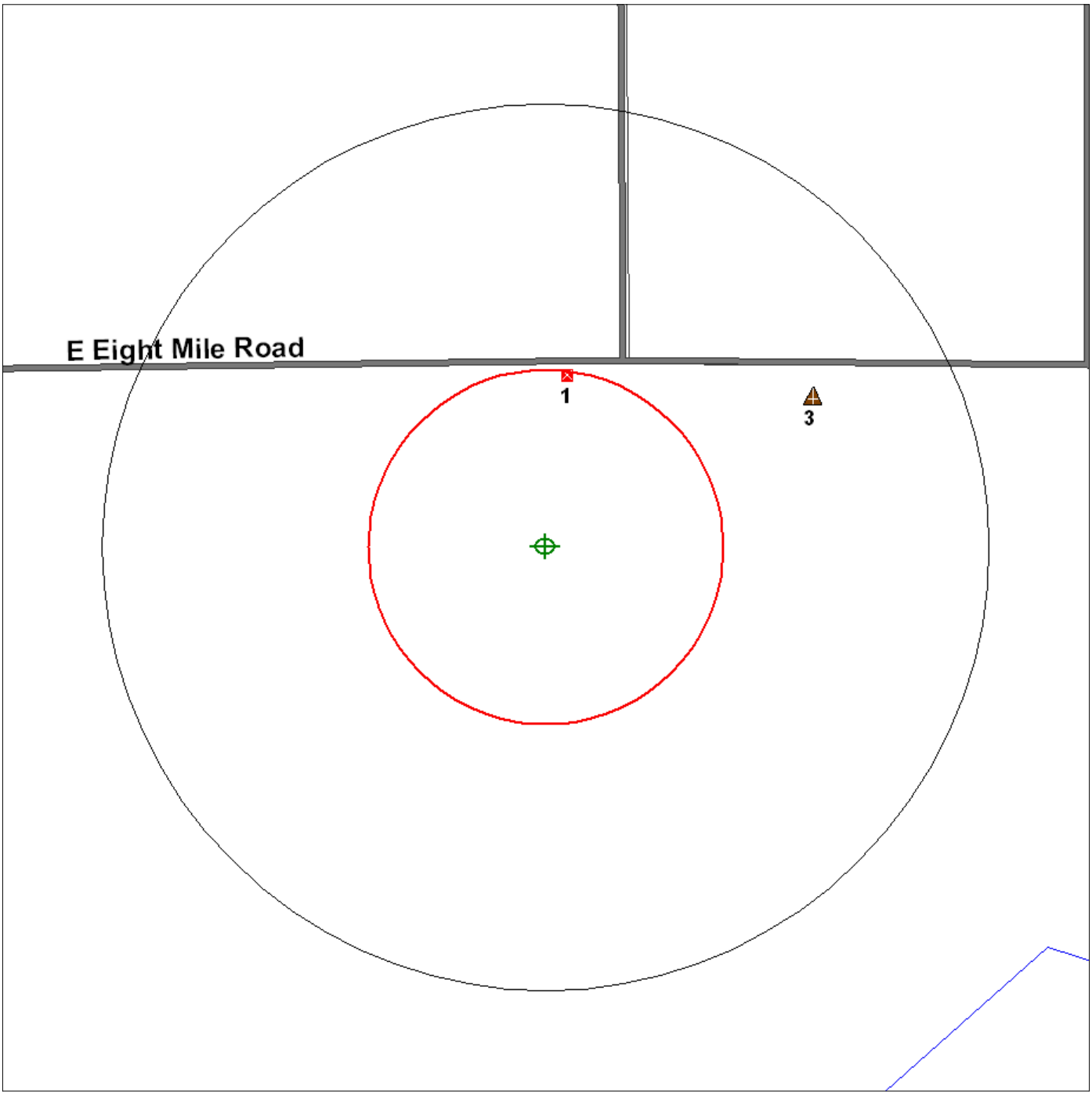
Black Rings Represent 1/4 Mile Radius; Red Ring Represents 500 ft. Radius

Environmental FirstSearch

.25 Mile Radius

ASTM-05: SPILLS90, ERNS, RCRANLR

EIGHT MILE RD, WEST LN & BEAR CREEK, STOCKTON CA 9521:



Source: U.S. Census TIGER Files

Target Site (Latitude: 38.056201 Longitude: -121.288098) .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

Railroads .....

Black Rings Represent 1/4 Mile Radius; Red Ring Represents 500 ft. Radius

Environmental FirstSearch
Sites Summary Report

Target Property: EIGHT MILE RD, WEST LN & BEAR CREEK
STOCKTON CA 95212

JOB: 1563BCE

TOTAL: 18 **GEOCODED:** 15 **NON GEOCODED:** 3 **SELECTED:** 18

Page No.	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
1	*ERNS*	*TRI VALLEY GROWERS* *475675/FIXED FACILITY*	*2200 EAST 8 MILE RD.; PACKI* *STOCKTON CA 95212*	*0.10 NE*	*1*
2	*UST*	*PACIFIC BELL (UE-708) STKN CA* *TISID-STATE42576/ACTIVE*	*2300 EIGHT MI* *STOCKTON CA 95210*	*0.12 NE*	*2*
3	*RCRAGN*	*SIGNATURE FRUIT (TOMATO), INC. - P* *CAL000223341/LGN*	*3200 E. EIGHT MILE ROAD* *STOCKTON CA 95212*	*0.17 NE*	*3*
4	*RCRANLR*	*TRI VALLEY GROWERS PLANT 4* *CAD981577059/NLR*	*3200 E. EIGHT MILE ROAD* *STOCKTON CA 95201*	*0.17 NE*	*3*
5	*RCRANLR*	*TRI VALLEY GROWERS PLANT 4* *CAD983635186/NLR*	*3200 E EIGHT MILE ROAD* *STOCKTON CA 95212*	*0.17 NE*	*3*
6	*ERNS*	*TRI-VALLEY GROWERS* *393419/UNKNOWN (NRC)*	*3200 E. 8-MILE RD* *STOCKTON CA 95212*	*0.17 NE*	*3*
7	*PERMITS*	*SAM FREITAS TRUCKING INC* *CAL000182315/ACTIVE*	*2420 E EIGHT MILE RD* *STOCKTON CA 95210*	*0.20 NE*	*4*
8	*PERMITS*	*VALLEY AGGREGATE TRANSPORT INC* *CAL000329573/ACTIVE*	*2420 E EIGHT MILE RD* *STOCKTON CA 95210*	*0.20 NE*	*4*
8	*UST*	*SAM FREITAS TRUCKING INC* *AST101003/AST SWRCB REG.5S*	*2420 E EIGHT MILE RD* *STOCKTON CA 95210*	*0.20 NE*	*4*
9	*UST*	*WESTERN METER* *TISID-STATE8478/INACTIVE*	*1551 EIGHT MI* *LODI CA 95242*	*0.39 NW*	*5*
10	*UST*	*STOCKTON-LODI KOA* *TISID-STATE42429/ACTIVE*	*2851 EIGHT MI* *LODI CA 95240*	*0.48 NE*	*6*
11	*RCRAGN*	*PACIFIC BELL* *CAT080026420/SGN*	*2300 E EIGHT MILE ROAD* *STOCKTON CA 95210*	*0.49 NW*	*7*
12	*LUST*	*PACIFIC BELL* *T0607700738/COMPLETED - CASE CLO*	*2300 EIGHT MILE RD* *STOCKTON CA 95210*	*0.49 NW*	*7*
13	*UST*	*PACIFIC BELL UE-708* *SANJOAQUIN004048*	*2300 E EIGHT MILE RD* *STOCKTON CA 95210*	*0.49 NW*	*7*
14	*LUST*	*STOCKTON/LODI KOA CAMP GROUND* *T0607700698/COMPLETED - CASE CLO*	*2851 EIGHT MILE RD* *LODI CA 95240*	*0.67 NE*	*8*

Environmental FirstSearch
Sites Summary Report

Target Property: EIGHT MILE RD, WEST LN & BEAR CREEK
STOCKTON CA 95212

JOB: 1563BCE

TOTAL: 18 **GEOCODED:** 15 **NON GEOCODED:** 3 **SELECTED:** 18

Page No.	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
15	*TRIBALLAND*	*BUREAU OF INDIAN AFFAIRS CONTACT I* *BIA-95212*	*UNKNOWN* *CA 95212*	*NON GC*	
16	*STATE*	*GEORGE LINCOLN MOSHER* *CAL39010050/NO FURTHER ACTION*	*SOUTHEAST OF EIGHT MILE ROA* *STOCKTON CA 95212*	*NON GC*	
18	*OTHER*	*GEORGE LINCOLN MOSHER* *CAL39010050/NO FURTHER ACTION*	*SOUTHEAST OF EIGHT MILE ROA* *STOCKTON CA 95212*	*NON GC*	

Environmental FirstSearch
Site Detail Report

Target Property: EIGHT MILE RD, WEST LN & BEAR CREEK
STOCKTON CA 95212

JOB: 1563BCE

ERNS

SEARCH ID: 5 **DIST/DIR:** 0.10 NE **MAP ID:** 1

NAME: TRI VALLEY GROWERS
ADDRESS: 2200 EAST 8 MILE RD.; PACKING SHED AREA
STOCKTON CA 95212
San Joaquin
CONTACT:

REV: 7/31/95
ID1: 475675
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION

DATE OF SPILL: 7/31/1995 **TIME OF SPILL:** 1430

PRODUCT RELEASED (1): AMMONIA,ANHYDROUS
QUANTITY (1): 10
UNITS (1): LBS

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR: NO **GROUNDWATER:** NO
LAND: NO **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE

DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: YES **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: DISSAPATED
RELEASE DETECTION: DUE TO HEAT, PRESSURE RELIEF VALVE OPENED
MISC. NOTES:

DISCHARGER INFORMATION

DISCHARGER ID: 475675 **DUN and BRADSTREET :**
TYPE OF DISCHARGER: UNKNOWN
NAME OF DISCHARGER: TRI VALLEY GROWERS
ADDRESS: 2200 EAST 8 MILE RD.
STOCKTON CA 95212-

Environmental FirstSearch
Site Detail Report

Target Property: EIGHT MILE RD, WEST LN & BEAR CREEK
STOCKTON CA 95212

JOB: 1563BCE

UST

SEARCH ID: 9 **DIST/DIR:** 0.12 NE **MAP ID:** 2

NAME:	PACIFIC BELL (UE-708) STKN CA	**REV:**	01/01/94
ADDRESS:	2300 EIGHT MI	**ID1:**	TISID-STATE42576
	STOCKTON CA 95205	**ID2:**	
	San Joaquin	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	

UST HISTORICAL DATA

This site was listed in the FIDS Zip Code List as a UST site. The Office of Hazardous Data Management produced the FIDS list. The FIDS list is an index of names and locations of sites recorded in various California State environmental agency databases. It is sorted by zip code and as an index, details regarding the sites were never included.

The UST information included in FIDS as provided by the Office of Hazardous Data Management was originally collected from the SWEEPS database. The SWEEPS database recorded Underground Storage Tanks and was maintained by the State Water Resources Control Board (SWRCB). That agency no longer maintains the SWEEPS database and last updated it in 1994. The last release of that 1994 database was in 1997.

Oversight of Underground Storage Tanks within California is now conducted by Certified Unified Program Agencies referred to as CUPA s. There are approximately 102 CUPA s and Local Oversight Programs (LOP s) in the State of California. Most are city or county government agencies. As of 1998, all sites or facilities with underground storage tanks were required by Federal mandate to obtain certification by designated UST oversight agencies (in this case, CUPA s) that the UST/s at their location were upgraded or removed in adherence with the 1998 RCRA standards.

Information from the FIDS/SWEEPS lists were included in this report search to help identify where underground storage tanks may have existed that were not recorded in CUPA databases or lists collected by us. This may occur if a tank was removed prior to development of recent CUPA UST lists or never registered with a CUPA.

Environmental FirstSearch
Site Detail Report

Target Property: EIGHT MILE RD, WEST LN & BEAR CREEK
STOCKTON CA 95212

JOB: 1563BCE

RCRAGN

SEARCH ID: 2 **DIST/DIR:** 0.17 NE **MAP ID:** 3

NAME:	SIGNATURE FRUIT (TOMATO), INC. - PLANT 4	**REV:**	1/13/10
ADDRESS:	3200 E. EIGHT MILE ROAD	**ID1:**	CAL000223341
	STOCKTON CA 95212	**ID2:**	
	SAN JOAQUIN	**STATUS:**	LGN
CONTACT:		**PHONE:**	

SITE INFORMATION

UNIVERSE INFORMATION:

NAIC INFORMATION

311421 - FRUIT AND VEGETABLE CANNING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

Ignitable waste
Corrosive waste
Chromium

Environmental FirstSearch
Site Detail Report

Target Property: EIGHT MILE RD, WEST LN & BEAR CREEK
STOCKTON CA 95212

JOB: 1563BCE

RCRANLR

SEARCH ID: 3 **DIST/DIR:** 0.17 NE **MAP ID:** 3

NAME:	TRI VALLEY GROWERS PLANT 4	**REV:**	6/6/06
ADDRESS:	3200 E. EIGHT MILE ROAD	**ID1:**	CAD981577059
	STOCKTON CA 95201	**ID2:**	
	CA077	**STATUS:**	NLR
CONTACT:	CHRISTOPHER J SAVAGE	**PHONE:**	2095725514

SITE INFORMATION

UNIVERSE INFORMATION:

NAIC INFORMATION

311421 - FRUIT AND VEGETABLE CANNING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

Target Property: EIGHT MILE RD, WEST LN & BEAR CREEK
STOCKTON CA 95212

JOB: 1563BCE

RCRANLR

SEARCH ID: 4 **DIST/DIR:** 0.17 NE **MAP ID:** 3

NAME:	TRI VALLEY GROWERS PLANT 4	**REV:**	1/13/10
ADDRESS:	3200 E EIGHT MILE ROAD	**ID1:**	CAD983635186
	STOCKTON CA 95212	**ID2:**	
	SAN JOAQUIN	**STATUS:**	NLR
CONTACT:		**PHONE:**	

SITE INFORMATION

CONTACT INFORMATION: ROBERT PARODI
3200 E EIGHT MILE ROAD
STOCKTON CA 95212

PHONE: 2095725912

UNIVERSE INFORMATION:

NAIC INFORMATION

311421 - FRUIT AND VEGETABLE CANNING
311421 - FRUIT AND VEGETABLE CANNING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

Target Property: EIGHT MILE RD, WEST LN & BEAR CREEK
STOCKTON CA 95212

JOB: 1563BCE

ERNS

SEARCH ID: 6 **DIST/DIR:** 0.17 NE **MAP ID:** 3

NAME: TRI-VALLEY GROWERS
ADDRESS: 3200 E. 8-MILE RD
STOCKTON CA 95212
San Joaquin
CONTACT:

REV: 7/6/94
ID1: 393419
ID2:
STATUS: UNKNOWN (NRC)
PHONE:

SPILL INFORMATION

DATE OF SPILL: 7/6/1994 **TIME OF SPILL:** 1030

PRODUCT RELEASED (1): TOMATO/CHERRY WASTEWATER PROCESS
QUANTITY (1): 0
UNITS (1): UNK

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR: NO **GROUNDWATER:** YES
LAND: NO **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: CREEK (UNKNOWN)

CAUSE OF RELEASE

DUMPING: NO **EQUIPMENT FAILURE:** YES
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: CLEANUP BY TRI-VALLEY
RELEASE DETECTION: OTHER= WASTE WATER PROCESSING BURIED PIPELINE BACKED UP
MISC. NOTES:

DISCHARGER INFORMATION

DISCHARGER ID: 393419 **DUN and BRADSTREET :**
TYPE OF DISCHARGER: PRIVATE ENTERPRISE
NAME OF DISCHARGER: TRI-VALLEY GROWERS
ADDRESS: 3200 E. 8-MILE RD
STOCKTON CA 95212-

Environmental FirstSearch
Site Detail Report

Target Property: EIGHT MILE RD, WEST LN & BEAR CREEK
STOCKTON CA 95212

JOB: 1563BCE

PERMITS

SEARCH ID: 7 **DIST/DIR:** 0.20 NE **MAP ID:** 4

NAME:	SAM FREITAS TRUCKING INC	**REV:**	02/19/10
ADDRESS:	2420 E EIGHT MILE RD	**ID1:**	CAL000182315
	STOCKTON CA 95210	**ID2:**	
	SAN JOAQUIN	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI)
SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created:	*7/27/1999*
Inactivity Date:	
Facility Mail Name:	
Facility Mailing Address:	*2420 E EIGHT MILE RD, STOCKTON, CA 95210-0000*
Owner Name:	*SAM FREITAS TRUCKING INC*
Owner Address:	*2420 E EIGHT MILE RD, STOCKTON, CA 95210-0000*
Contact Name:	*MARIA FREITAS-V PRESIDENT*
Contact Address:	*, STOCKTON, CA 95210-0000*
Contact Phone:	*2094740294*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:
1993 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2008:

2008 Waste Type:
2008 Total Tonnage:
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type:
2006 Total Tonnage:
2005 Waste Type:
2005 Total Tonnage:
2004 Waste Type:
2004 Total Tonnage:
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type:
2001 Total Tonnage:
2000 Waste Type:
2000 Total Tonnage:

Environmental FirstSearch
Site Detail Report

Target Property: EIGHT MILE RD, WEST LN & BEAR CREEK
STOCKTON CA 95212

JOB: 1563BCE

PERMITS

SEARCH ID: 8 **DIST/DIR:** 0.20 NE **MAP ID:** 4

NAME: VALLEY AGGREGATE TRANSPORT INC
ADDRESS: 2420 E EIGHT MILE RD
STOCKTON CA 95210
SAN JOAQUIN
CONTACT:

REV: 02/19/10
ID1: CAL000329573
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI)
SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *2/8/2008 2:39:38 PM*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *753 N GEORGE WASHINGTON BLVD, YUBA CITY, CA 95993-9065*
Owner Name: *VALLEY AGGREGATE TRANSPORT INC*
Owner Address: *753 N GEORGE WASHINGTON BLVD, YUBA CITY, CA 95993-9065*
Contact Name: *PETE HALL*
Contact Address: *753 N GEORGE WASHINGTON BLVD, YUBA CITY, CA 95993-9065*
Contact Phone: *5308701184*

UST

SEARCH ID: 11 **DIST/DIR:** 0.20 NE **MAP ID:** 4

NAME: SAM FREITAS TRUCKING INC
ADDRESS: 2420 E EIGHT MILE RD
STOCKTON CA 95210
SAN JOAQUIN
CONTACT:

REV: 05/30/01
ID1: AST101003
ID2:
STATUS: AST SWRCB REG.5S
PHONE:

Region: *5S*
Company Name: *SAM FREITAS TRUCKING, INC.*
Company Name 2:

Environmental FirstSearch
Site Detail Report

Target Property: EIGHT MILE RD, WEST LN & BEAR CREEK
STOCKTON CA 95212

JOB: 1563BCE

UST

SEARCH ID: 13 **DIST/DIR:** 0.39 NW **MAP ID:** 5

NAME:	WESTERN METER	**REV:**	01/01/94
ADDRESS:	1551 EIGHT MI	**ID1:**	TISID-STATE8478
	LODI CA 95240	**ID2:**	
	San Joaquin	**STATUS:**	INACTIVE
CONTACT:		**PHONE:**	

UST HISTORICAL DATA

This site was listed in the FIDS Zip Code List as a UST site. The Office of Hazardous Data Management produced the FIDS list. The FIDS list is an index of names and locations of sites recorded in various California State environmental agency databases. It is sorted by zip code and as an index, details regarding the sites were never included.

The UST information included in FIDS as provided by the Office of Hazardous Data Management was originally collected from the SWEEPS database. The SWEEPS database recorded Underground Storage Tanks and was maintained by the State Water Resources Control Board (SWRCB). That agency no longer maintains the SWEEPS database and last updated it in 1994. The last release of that 1994 database was in 1997.

Oversight of Underground Storage Tanks within California is now conducted by Certified Unified Program Agencies referred to as CUPA s. There are approximately 102 CUPA s and Local Oversight Programs (LOP s) in the State of California. Most are city or county government agencies. As of 1998, all sites or facilities with underground storage tanks were required by Federal mandate to obtain certification by designated UST oversight agencies (in this case, CUPA s) that the UST/s at their location were upgraded or removed in adherence with the 1998 RCRA standards.

Information from the FIDS/SWEEPS lists were included in this report search to help identify where underground storage tanks may have existed that were not recorded in CUPA databases or lists collected by us. This may occur if a tank was removed prior to development of recent CUPA UST lists or never registered with a CUPA.

Environmental FirstSearch
Site Detail Report

Target Property: EIGHT MILE RD, WEST LN & BEAR CREEK
STOCKTON CA 95212

JOB: 1563BCE

UST

SEARCH ID: 12 **DIST/DIR:** 0.48 NE **MAP ID:** 6

NAME:	STOCKTON-LODI KOA	**REV:**	01/01/94
ADDRESS:	2851 EIGHT MI	**ID1:**	TISID-STATE42429
	LODI CA 95240	**ID2:**	
	San Joaquin	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	

UST HISTORICAL DATA

This site was listed in the FIDS Zip Code List as a UST site. The Office of Hazardous Data Management produced the FIDS list. The FIDS list is an index of names and locations of sites recorded in various California State environmental agency databases. It is sorted by zip code and as an index, details regarding the sites were never included.

The UST information included in FIDS as provided by the Office of Hazardous Data Management was originally collected from the SWEEPS database. The SWEEPS database recorded Underground Storage Tanks and was maintained by the State Water Resources Control Board (SWRCB). That agency no longer maintains the SWEEPS database and last updated it in 1994. The last release of that 1994 database was in 1997.

Oversight of Underground Storage Tanks within California is now conducted by Certified Unified Program Agencies referred to as CUPA s. There are approximately 102 CUPA s and Local Oversight Programs (LOP s) in the State of California. Most are city or county government agencies. As of 1998, all sites or facilities with underground storage tanks were required by Federal mandate to obtain certification by designated UST oversight agencies (in this case, CUPA s) that the UST/s at their location were upgraded or removed in adherence with the 1998 RCRA standards.

Information from the FIDS/SWEEPS lists were included in this report search to help identify where underground storage tanks may have existed that were not recorded in CUPA databases or lists collected by us. This may occur if a tank was removed prior to development of recent CUPA UST lists or never registered with a CUPA.

Environmental FirstSearch
Site Detail Report

Target Property: EIGHT MILE RD, WEST LN & BEAR CREEK
STOCKTON CA 95212

JOB: 1563BCE

RCRAGN

SEARCH ID: 1 **DIST/DIR:** 0.49 NW **MAP ID:** 7

NAME: PACIFIC BELL
ADDRESS: 2300 E EIGHT MILE ROAD
STOCKTON CA 95205
SAN JOAQUIN
CONTACT:

REV: 1/13/10
ID1: CAT080026420
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
2300 E EIGHT MILE ROAD
STOCKTON CA 95205

PHONE: 9164850997

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

Target Property: EIGHT MILE RD, WEST LN & BEAR CREEK
STOCKTON CA 95212

JOB: 1563BCE

LUST

SEARCH ID: 14 **DIST/DIR:** 0.49 NW **MAP ID:** 7

NAME: PACIFIC BELL
ADDRESS: 2300 EIGHT MILE RD
STOCKTON CA 95209
SAN JOAQUIN
CONTACT:

REV: 03/01/10
ID1: T0607700738
ID2:
STATUS: COMPLETED - CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *SAN JOAQUIN COUNTY LOP*
REGIONAL BOARD CASE NUMBER: *390916*
LOCAL AGENCY:
LOCAL CASE NUMBER: *1893*
RESPONSIBLE PARTY:
ADDRESS OF RESPONSIBLE PARTY:
SITE OPERATOR:
WATER SYSTEM:

CASE TYPE: *LUST Cleanup Site*
POTENTIAL CONTAMINANTS OF CONCERN: *Gasoline*
POTENTIAL MEDIA AFFECTED: *Soil*
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *Completed - Case Closed*
STATUS DATE: *1996-11-27*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):
SITE HISTORY (blank if not reported):

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Discovery*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Reported*

Environmental FirstSearch
Site Detail Report

Target Property: EIGHT MILE RD, WEST LN & BEAR CREEK
STOCKTON CA 95212

JOB: 1563BCE

UST

SEARCH ID: 10 **DIST/DIR:** 0.49 NW **MAP ID:** 7

NAME: PACIFIC BELL UE-708
ADDRESS: 2300 E EIGHT MILE RD
STOCKTON CA 95210
SAN JOAQUIN
CONTACT:

REV: 08/27/99
ID1: SANJOAQUIN004048
ID2:
STATUS:
PHONE:

COUNTY OF SAN JOAQUIN UNDERGROUND TANKS LIST INFORMATION FOR TANK ID *TA506061*

Tank ID Number: *TA506061*
Compliant (if blank undefined by agency): *YES*
Tank Capacity: *10000*
Tank Contents: *001 UNLEADED*
Tank Billing Status: *01*

COUNTY OF SAN JOAQUIN UNDERGROUND TANKS LIST INFORMATION FOR TANK ID *TA506062*

Tank ID Number: *TA506062*
Compliant (if blank undefined by agency): *YES*
Tank Capacity: *5000*
Tank Contents: *003 DIESEL*
Tank Billing Status: *01*

Environmental FirstSearch
Site Detail Report

Target Property: EIGHT MILE RD, WEST LN & BEAR CREEK
STOCKTON CA 95212

JOB: 1563BCE

LUST

SEARCH ID: 15 **DIST/DIR:** 0.67 NE **MAP ID:** 8

NAME: STOCKTON/LODI KOA CAMP GROUND
ADDRESS: 2851 EIGHT MILE RD
LODI CA 95240
SAN JOAQUIN
CONTACT:

REV: 03/01/10
ID1: T0607700698
ID2:
STATUS: COMPLETED - CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *SAN JOAQUIN COUNTY LOP*
REGIONAL BOARD CASE NUMBER: *390871*
LOCAL AGENCY: *SAN JOAQUIN COUNTY LOP*
LOCAL CASE NUMBER: *0001441*
RESPONSIBLE PARTY:
ADDRESS OF RESPONSIBLE PARTY:
SITE OPERATOR:
WATER SYSTEM:

CASE TYPE: *LUST Cleanup Site*
POTENTIAL CONTAMINANTS OF CONCERN: *Gasoline*
POTENTIAL MEDIA AFFECTED: *Soil*
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *Completed - Case Closed*
STATUS DATE: *1996-06-28*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):
SITE HISTORY (blank if not reported):

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Reported*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Discovery*

Environmental FirstSearch
Site Detail Report

Target Property: EIGHT MILE RD, WEST LN & BEAR CREEK
STOCKTON CA 95212

JOB: 1563BCE

TRIBALLAND

SEARCH ID: 18 **DIST/DIR:** NON GC **MAP ID:**

NAME: BUREAU OF INDIAN AFFAIRS CONTACT INFORMATION
ADDRESS: UNKNOWN
CA 95212
SAN JOAQUIN
CONTACT:

REV: 01/15/08
ID1: BIA-95212
ID2:
STATUS:
PHONE:

BUREAU OF INDIAN AFFAIRS CONTACT INFORMATION

OFFICE: Pacific Regional Office
CONTACT: CLAY GREGORY,REGIONAL DIRECTOR

ADDRESS: 2800 Cottage Way
Sacramento CA 95825
PHONE: Phone: 916-978-6000
FAX: Fax: 916-978-6099

The Native American Consultation Database (NACD) is a tool for identifying consultation contacts for Indian tribes, Alaska Native villages and corporations, and Native Hawaiian organizations. The database is not a comprehensive source of information, but it does provide a starting point for the consultation process by identifying tribal leaders and NAGPRA contacts. This database can be accessed online at the following web address http://home.nps.gov/nacd/

Environmental FirstSearch
Site Detail Report

Target Property: EIGHT MILE RD, WEST LN & BEAR CREEK
STOCKTON CA 95212

JOB: 1563BCE

STATE

SEARCH ID: 16 **DIST/DIR:** NON GC **MAP ID:**

NAME: GEORGE LINCOLN MOSHER
ADDRESS: SOUTHEAST OF EIGHT MILE ROAD AND UNION PACIFIC RAILROAD.

STOCKTON CA 95212
SAN JOAQUIN
CONTACT:

REV: 02/08/10
ID1: CAL39010050
ID2: SCHOOL
STATUS: NO FURTHER ACTION
PHONE:

GENERAL SITE INFORMATION

Site Type:	*School Investigation*
Status:	*No Further Action*
Status Date:	*2005-10-20 00:00:00*
NPL Site:	*NO*
Funding:	*School District*
Regulatory Agencies Involved:	*SMBRP*
Lead Agency:	*SMBRP*
Project Manager:	
Supervisor:	*Javier Hinojosa*
Branch:	*Chatsworth*
Acres:	*11*
Assessor s Parcel Number:	*122-02-12*
Past Uses:	*AGRICULTURAL - ROW CROPS*
Potential Contaminants:	*NONE SPECIFIED 31000*
Confirmed Contaminants:	*31000*
Potential Media Affected:	*NMA*
Restricted Use:	*NO*
Site Management Required:	*NONE SPECIFIED*
Special Programs Associated with this Site:	

OTHER SITE NAMES (blank below = not reported by agency)

39010050

122-02-12

104461

COMPLETED ACTIVITIES AND DTSC COMMENTS REGARDING THIS SITE (blank below = not reported by agency)

Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Preliminary Endangerment Assessment Report***
Completion Date:	***2005-10-11 00:00:00***
Comments:	*NFA.*
Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Technical Report***
Completion Date:	***2005-03-23 00:00:00***
Comments:	
Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Environmental Oversight Agreement***
Completion Date:	***2005-02-28 00:00:00***
Comments:	
Area Name:	***PROJECT WIDE***
Sub- Area Name:	

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: EIGHT MILE RD, WEST LN & BEAR CREEK
STOCKTON CA 95212

JOB: 1563BCE

STATE

SEARCH ID: 16 **DIST/DIR:** NON GC **MAP ID:**

NAME: GEORGE LINCOLN MOSHER
ADDRESS: SOUTHEAST OF EIGHT MILE ROAD AND UNION PACIFIC RAILROAD.
STOCKTON CA 95212
SAN JOAQUIN
CONTACT:

REV: 02/08/10
ID1: CAL39010050
ID2: SCHOOL
STATUS: NO FURTHER ACTION
PHONE:

Document Type: *Site Inspections/Visit (Non LUR)*
Completion Date: *2005-03-28 00:00:00*
Comments:

Area Name: *PROJECT WIDE*
Sub- Area Name:
Document Type: *Cost Recovery Closeout Memo*
Completion Date: *2005-10-20 00:00:00*
Comments:

Environmental FirstSearch
Site Detail Report

Target Property: EIGHT MILE RD, WEST LN & BEAR CREEK
STOCKTON CA 95212

JOB: 1563BCE

OTHER

SEARCH ID: 17 **DIST/DIR:** NON GC **MAP ID:**

NAME:	GEORGE LINCOLN MOSHER	**REV:**	02/08/10
ADDRESS:	SOUTHEAST OF EIGHT MILE ROAD AND UNION PACIFIC RAILROAD.		
		ID1:	CAL39010050
	STOCKTON CA 95212	**ID2:**	
	SAN JOAQUIN	**STATUS:**	NO FURTHER ACTION
CONTACT:		**PHONE:**	

GENERAL SITE INFORMATION

Site Type:	*School Investigation*
Status:	*No Further Action*
Status Date:	*2005-10-20 00:00:00*
NPL Site:	*NO*
Funding:	*School District*
Regulatory Agencies Involved:	*SMBRP*
Lead Agency:	*SMBRP*
Project Manager:	
Supervisor:	*Javier Hinojosa*
Branch:	*Chatsworth*
Acres:	*11*
Assessor s Parcel Number:	*122-02-12*
Past Uses:	*AGRICULTURAL - ROW CROPS*
Potential Contaminants:	*NONE SPECIFIED 31000*
Confirmed Contaminants:	*31000*
Potential Media Affected:	*NMA*
Restricted Use:	*NO*
Site Management Required:	*NONE SPECIFIED*
Special Programs Associated with this Site:	

Environmental FirstSearch Descriptions

NPL: ***EPA*** NATIONAL PRIORITY LIST - The National Priorities List is a list of the worst hazardous waste sites that have been identified by Superfund. Sites are only put on the list after they have been scored using the Hazard Ranking System (HRS), and have been subjected to public comment. Any site on the NPL is eligible for cleanup using Superfund Trust money.
A Superfund site is any land in the United States that has been contaminated by hazardous waste and identified by the Environmental Protection Agency (EPA) as a candidate for cleanup because it poses a risk to human health and/or the environment.
FINAL - Currently on the Final NPL
PROPOSED - Proposed for NPL

NPL DELISTED: ***EPA*** NATIONAL PRIORITY LIST Subset - Database of delisted NPL sites. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.
DELISTED - Deleted from the Final NPL

CERCLIS: ***EPA*** COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY INFORMATION SYSTEM (CERCLIS)- CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL.
PART OF NPL- Site is part of NPL site
DELETED - Deleted from the Final NPL
FINAL - Currently on the Final NPL
NOT PROPOSED - Not on the NPL
NOT VALID - Not Valid Site or Incident
PROPOSED - Proposed for NPL
REMOVED - Removed from Proposed NPL
SCAN PLAN - Pre-proposal Site
WITHDRAWN - Withdrawn

NFRAP: ***EPA*** COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY INFORMATION SYSTEM ARCHIVED SITES - database of Archive designated CERCLA sites that, to the best of EPA's knowledge, assessment has been completed and has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.
NFRAP – No Further Remedial Action Plan
P - Site is part of NPL site
D - Deleted from the Final NPL
F - Currently on the Final NPL
N - Not on the NPL
O - Not Valid Site or Incident
P - Proposed for NPL
R - Removed from Proposed NPL
S - Pre-proposal Site
W – Withdrawn

RCRA COR ACT: ***EPA*** RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM SITES - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.
RCRAInfo facilities that have reported violations and subject to corrective actions.

RCRA TSD: ***EPA*** RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM

TREATMENT, STORAGE, and DISPOSAL FACILITIES. - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.
Facilities that treat, store, dispose, or incinerate hazardous waste.

RCRA GEN: ***EPA*** RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM GENERATORS - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.
Facilities that generate or transport hazardous waste or meet other RCRA requirements.
LGN - Large Quantity Generators
SGN - Small Quantity Generators
VGN – Conditionally Exempt Generator.
Included are RAATS (RCRA Administrative Action Tracking System) and CMEL (Compliance Monitoring & Enforcement List) facilities.

RCRA NLR: ***EPA*** RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM SITES - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.
Facilities not currently classified by the EPA but are still included in the RCRAInfo database. Reasons for non classification:
Failure to report in a timely matter.
No longer in business.
No longer in business at the listed address.
No longer generating hazardous waste materials in quantities which require reporting.

Federal IC / EC: ***EPA*** BROWNFIELD MANAGEMENT SYSTEM (BMS) - database designed to assist EPA in collecting, tracking, and updating information, as well as reporting on the major activities and accomplishments of the various Brownfield grant Programs.
FEDERAL ENGINEERING AND INSTITUTIONAL CONTROLS- Superfund sites that have either an engineering or an institutional control. The data includes the control and the media contaminated.

ERNS: ***EPA/NRC*** EMERGENCY RESPONSE NOTIFICATION SYSTEM (ERNS) - Database of incidents reported to the National Response Center. These incidents include chemical spills, accidents involving chemicals (such as fires or explosions), oil spills, transportation accidents that involve oil or chemicals, releases of radioactive materials, sightings of oil sheens on bodies of water, terrorist incidents involving chemicals, incidents where illegally dumped chemicals have been found, and drills intended to prepare responders to handle these kinds of incidents. Data since January 2001 has been received from the National Response System database as the EPA no longer maintains this data.

Tribal Lands: ***DOI/BIA*** INDIAN LANDS OF THE UNITED STATES - Database of areas with boundaries established by treaty, statute, and (or) executive or court order, recognized by the Federal Government as territory in which American Indian tribes have primary governmental authority. The Indian Lands of the United States map layer shows areas of 640 acres or more, administered by the Bureau of Indian Affairs. Included are Federally-administered lands within a reservation which may or may not be considered part of the reservation.

State/Tribal Sites: ***CA EPA*** SMBRPD / CAL SITES- The California Department of Toxic Substances Control (DTSC) has developed an electronic database system with information about sites that are known to be contaminated with hazardous substances as well as information on uncharacterized properties where further studies may reveal problems. The Site Mitigation and Brownfields Reuse Program Database (SMBRPD), also known as CalSites, is used primarily by DTSC's staff as an informational tool to evaluate and track activities at

properties that may have been affected by the release of hazardous substances.
The SMBRPD displays information in six categories. The categories are:
1. CalSites Properties (CS)
2. School Property Evaluation Program Properties (SCH)
3. Voluntary Cleanup Program Properties (VCP)
4. Unconfirmed Properties Needing Further Evaluation (RFE)
Please Note: FirstSearch Reports list the above sites as DB Type (STATE).
5. Unconfirmed Properties Referred to Another Local or State Agency (REF)
6. Properties where a No Further Action Determination has been made (NFA)
Please Note: FirstSearch Reports list the above sites as DB Type (OTHER).
Each Category contains information on properties based upon the type of work taking place at the site. For example, the CalSites database is now one of the six categories within SMPBRD and contains only confirmed sites considered as posing the greatest threat to the public and/or the potential public school sites will be found within the School Property Evaluation Program, and those properties undergoing voluntary investigation and/or cleanup are in the Voluntary Cleanup Program.
CORTESE LIST-Pursuant to Government Code Section 65962.5, the Hazardous Waste and Substances Sites List has been compiled by Cal/EPA, Hazardous Materials Data Management Program. The CAL EPA Dept. of Toxic Substances Control compiles information from subsets of the following databases to make up the CORTESE list:
1. The Dept. of Toxic Substances Control; contaminated or potentially contaminated hazardous waste sites listed in the CAL Sites database. Formerly known as ASPIS are included (CALSITES formerly known as ASPIS).
2. The California State Water Resources Control Board; listing of Leaking Underground Storage Tanks are included (LTANK)
3. The California Integrated Waste Management Board; Sanitary Landfills which have evidence of groundwater contamination or known migration of hazardous materials (formerly WB-LF, now AB 3750).
Note: Track Info Services collects each of the above data sets individually and lists them separately in the following First Search categories in order to provide more current and comprehensive information: CALSITES: SPL, LTANK: LUST, WB-LF: SWL

State Spills 90: ***CA EPA*** SLIC REGIONS 1 - 9- The California Regional Water Quality Control Boards maintain report of sites that have records of spills, leaks, investigation, and cleanups.

State/Tribal SWL: ***CA IWMB/SWRCB/COUNTY*** SWIS SOLID WASTE INFORMATION SYSTEM-The California Integrated Waste Management Board maintains a database on solid waste facilities, operations, and disposal sites throughout the state of California. The types of facilities found in this database include landfills, transfer stations, material recovery facilities, composting sites, transformation facilities, waste tire sites, and closed disposal sites. For more information on individual sites call the number listed in the source field..
Please Note: This database contains poor site location information for many sites in the First Search reports; therefore, it may not be possible to locate or plot some sites in First Search reports.
WMUDS-The State Water Resources Control Board maintained the Waste Management Unit Database System (WMUDS). It is no longer updated. It tracked management units for several regulatory programs related to waste management and its potential impact on groundwater. Two of these programs (SWAT & TPCA) are no longer on-going regulatory programs as described below. Chapter 15 (SC15) is still an on-going regulatory program and information is updated periodically but not to the WMUDS database. The WMUDS System contains information from the following agency databases: Facility, Waste Management Unit (WMU), Waste Discharger System (WDS), SWAT, Chapter 15, TPCA, RCRA, Inspections, Violations, and Enforcement's.
Note: This database contains poor site location information for many sites in the First Search reports; therefore, it may not be possible to locate or plot some sites in First Search reports.
ORANGE COUNTY LANDFILLS LIST- A list maintained by the Orange County Health Department.

State/Tribal LUST: ***CA SWRCB/COUNTY*** LUSTIS- The State Water Resources Control Board maintains a database of sites with confirmed or unconfirmed leaking underground storage tanks. Information for this database is collected from the states regional boards quarterly and integrated with this database.
SAN DIEGO COUNTY LEAKING TANKS- The San Diego County Department of Environmental Health maintains a database of sites with confirmed or unconfirmed leaking underground storage tanks within its HE17/58 database. For more information on a specific file call the HazMat Duty Specialist at phone number listed in the source information field.

State/Tribal UST/AST: ***CA EPA/COUNTY/CITY*** ABOVEGROUND STORAGE TANKS LISTING-The Above Ground Petroleum Storage Act became State Law effective January 1, 1990. In general, the law requires owners or operators of AST's with petroleum products to file a storage statement and pay a fee by July 1, 1990 and every two years thereafter, take specific action to prevent spills, and in certain instances implement a

groundwater monitoring program. This law does not apply to that portion of a tank facility associated with the production oil and regulated by the State Division of Oil and Gas of the Dept. of Conservation.
SWEEPS / FIDS STATE REGISTERED UNDEGROUND STORAGE TANKS- Until 1994 the State Water Resources Control Board maintained a database of registered underground storage tanks statewide referred to as the SWEEPS System. The SWEEPS UST information was integrated with the CAL EPA's Facility Index System database (FIDS) which is a master index of information from numerous California agency environmental databases. That was last updated in 1994. Track Info Services included the UST information from the FIDS database in its First Search reports for historical purposes to help its clients identify where tanks may possibly have existed. For more information on specific sites from individual paper files archived at the State Water Resources Control Board call the number listed with the source information.
INDIAN LANDS UNDERGROUND STORAGE TANKS LIST- A listing of underground storage tanks currently on Indian Lands under federal jurisdiction. California Indian Land USTS are administered by US EPA Region 9.
CUPA DATABASES & SOURCES- Definition of a CUPA: A Certified Unified Program Agency (CUPA) is a local agency that has been certified by the CAL EPA to implement six state environmental programs within the local agency's jurisdiction. These can be a county, city, or JPA (Joint Powers Authority). This program was established under the amendments to the California Health and Safety Code made by SB 1082 in 1994.
A Participating Agency (PA) is a local agency that has been designated by the local CUPA to administer one or more Unified Programs within their jurisdiction on behalf of the CUPA. A Designated Agency (DA) is an agency that has not been certified by the CUPA but is the responsible local agency that would implement the six unified programs until they are certified.
Please Note: Track Info Services, LLC collects and maintains information regarding Underground Storage Tanks from majority of the CUPAS and Participating Agencies in the State of California. These agencies typically do not maintain nor release such information on a uniform or consistent schedule; therefor, currency of the data may vary. Please look at the details on a specific site with a UST record in the First Search Report to determine the actual currency date of the record as provided by the relevant agency. Numerous efforts are made on a regular basis to obtain updated records.

State/Tribal IC: ***CA EPA*** DEED-RESTRICTED SITES LISTING- The California EPA's Department of Toxic Substances Control Board maintains a list of deed-restricted sites, properties where the DTSC has placed limits or requirements on the future use of the property due to varying levels of cleanup possible, practical or necessary at the site.

State/Tribal VCP: ***CA EPA*** SMBRPD / CAL SITES- The California Department of Toxic Substances Control (DTSC) has developed an electronic database system with information about sites that are known to be contaminated with hazardous substances as well as information on uncharacterized properties where further studies may reveal problems. The Site Mitigation and Brownfields Reuse Program Database (SMBRPD), also known as CalSites, is used primarily by DTSC's staff as an informational tool to evaluate and track activities at properties that may have been affected by the release of hazardous substances.
The SMBRPD displays information in six categories. The categories are:
1. CalSites Properties (CS)
2. School Property Evaluation Program Properties (SCH)
3. Voluntary Cleanup Program Properties (VCP)
4. Unconfirmed Properties Needing Further Evaluation (RFE)
5. Unconfirmed Properties Referred to Another Local or State Agency (REF)
6. Properties where a No Further Action Determination has been made (NFA)
Please Note: FirstSearch Reports list the above sites as DB Type VC. Each Category contains information on properties based upon the type of work taking place at the site. The VC category contains only those properties undergoing voluntary investigation and/or cleanup and which are listed in the Voluntary Cleanup Program.

RADON: ***NTIS*** NATIONAL RADON DATABASE - EPA radon data from 1990-1991 national radon project collected for a variety of zip codes across the United States.

State Permits: ***CA COUNTY*** SAN DIEGO COUNTY HE17 PERMITS- The HE17/58 database tracks establishments issued permits and the status of their permits in relation to compliance with federal, state, and local regulations that the County oversees. It tracks if a site is a hazardous waste generator, TSD, gas station, has underground tanks, violations, or unauthorized releases. For more information on a specific file call the HazMat Duty Specialist at the phone number listed in the source information field.
SAN BERNARDINO COUNTY HAZARDOUS MATERIALS PERMITS- Handlers and Generators Permit Information Maintained by the Hazardous Materials Division.

State Other: ***CA EPA/COUNTY*** SMBRPD / CAL SITES- The California Department of Toxic Substances

Control (DTSC) has developed an electronic database system with information about sites that are known to be contaminated with hazardous substances as well as information on uncharacterized properties where further studies may reveal problems. The Site Mitigation and Brownfields Reuse Program Database (SMBRPD), also known as CalSites, is used primarily by DTSC's staff as an informational tool to evaluate and track activities at properties that may have been affected by the release of hazardous substances.
The SMBRPD displays information in six categories. The categories are:
1. CalSites Properties (CS)
2. School Property Evaluation Program Properties (SCH)
3. Voluntary Cleanup Program Properties (VCP)
4. Unconfirmed Properties Needing Further Evaluation (RFE)
Please Note: FirstSearch Reports list the above sites as DB Type (STATE).
5. Unconfirmed Properties Referred to Another Local or State Agency (REF)
6. Properties where a No Further Action Determination has been made (NFA)
Please Note: FirstSearch Reports list the above sites as DB Type (OTHER).
Each Category contains information on properties based upon the type of work taking place at the site. For example, the CalSites database is now one of the six categories within SMPBRD and contains only confirmed sites considered as posing the greatest threat to the public and/or the potential public school sites will be found within the School Property Evaluation Program, and those properties undergoing voluntary investigation and/or cleanup are in the Voluntary Cleanup Program.
LA COUNTY SITE MITIGATION COMPLAINT CONTROL LOG- The County of Los Angeles Public Health Investigation Compliant Control Log.
ORANGE COUNTY INDUSTRIAL SITE CLEANUPS- List maintained by the Orange County Environmental Health Agency.
RIVERSIDE COUNTY WASTE GENERATORS-A list of facilities in Riverside County which generate hazardous waste.
SACRAMENTO COUNTY MASTER HAZMAT LIST-Master list of facilities within Sacramento County with potentially hazardous materials.
SACRAMENTO COUNTY TOXIC SITE CLEANUPS-A list of sites where unauthorized releases of potentially hazardous materials have occurred.

State Other: ***US DOJ*** NATIONAL CLANDESTINE LABORATORY REGISTER - Database of addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the U.S. Department of Justice ("the Department"), and the Department has not verified the entry and does not guarantee its accuracy. All sites that are included in this data set will have an id that starts with NCLR.

1403
Hazards

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& ASSOCIATES INC.

Geotechnical Engineering

Engineering Geology

Environmental Consulting

Remediation Services

Construction Inspection

Materials Testing

August 8, 2005

Mr. Charlie Simpson, Principal
InSite Environmental, Inc.
6653 Embarcadero, Suite Q
Stockton, California 95219

Peer Review – Phase I Environmental Site Assessments
BEAR CREEK EAST SPECIFIC PLAN
WKA No. 5885.03

Mr. Simpson:

In accordance with our scope of work dated April 7, 2005, Wallace-Kuhl & Associates Inc. (WKA) has complete a peer review of existing Bear Creek East Specific Plan (Plan) Phase 1 Environmental Site Assessments (ESAs). The purpose of the peer review was to determine whether further action to investigate pesticide usage at the proposed residential subdivisions within the Plan area is warranted and to evaluate the need for soil sampling along the Santa Fe Pacific liquid petroleum pipeline bordering the east side of the Plan area.

The Bear Creek East Specific Plan environmental documents reviewed as part of this task included:

- Aqua Science Engineers Inc., *Phase I Environmental Site Assessment*, July 30, 2002
- ATC Associates Inc., *Environmental Site Assessment*, September 12, 2003
- Environmental Science Services Inc., *Phase 1 Environmental Site Assessment*, March 2004
- M.J. Kloberdanz & Associates, *Phase 1 Environmental Assessment*, February 9, 2005.

In addition to reviewing the aforementioned environmental documents, aerial photographs for the years 1963, 1973, 1984, 1990, and 1999 were evaluated to develop a reasonably continuous indication of the site history.

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Recycled paper

FINDINGS

The Plan area in the earliest decades of available air photo coverage supported predominantly rice, with a lesser area devoted to dry-farmed crops. By the 1980s, the Plan area supported some dry-farmed crops, although aerial photographs indicate certain fields appear to contain irrigated haycrops or irrigated pastures. By the 1990s, irrigated pastures or haycrops, and dry-farmed land areas again predominated. These agricultural uses are considered to be low-intensity and are not typically prone to attack by pests. As such, the land areas would not have been subject to application of persistent pesticides, i.e. the organochlorine variety.

One of the ESA's reviewed recommended collecting soil samples from the fields to evaluate the potential for elevated concentrations of pesticides and herbicides. However, it appears that the other firm did not opine the crop history based on air photo observations. The other firm limited their discussion to the fact that their studied site is "agricultural" or "farmland."

Concerning the liquid petroleum pipeline located on the Santa Fe Pacific Railroad right-of-way, there was no surficial evidence presented in the existing ESA's or identified during WKA's site reconnaissance to warrant further investigations. To further support this determination, WKA reviewed the regulatory agency databases obtained by Environmental Data Resources, Inc. (EDR) for known "dig-ins" or known leaks along the segment of pipeline that is adjacent to and within about one-quarter mile from the nearest boundaries of the Plan area. No documented releases were found in EDR's search of available government records either within the Plan area or within the required search radius around the Plan area.

CONCLUSIONS

In WKA's opinion, surficial soils sampling and testing for potential persistent pesticide residuals appears unwarranted given the crop histories for the various project sites comprising the Plan area. We do not make a recommendation to sample and test on the subject property nearest to the petroleum products pipeline. That is something that a client has to decide whether to do based on their own risk tolerance policies. With respect to future development requirements, normally WKA observes that the entitlement agency (City or County Planning Dept., for example), instructs the developer as to how far the set back must be between the edge of the future subdivision and the pipeline location.

WKA's opinions as presented above may not be in line with the Department of Toxic Substances Control requirements on these topics in consideration of a proposed school site. Additionally, it will be critical that the proposed school within the Plan area be a minimum of 1500 feet away from the petroleum pipeline location.

If you have any questions with regard to this letter, please do not hesitate to call me at (209) 234-7722.

Wallace-Kuhl & Associates, Inc.

Fred W. Gius, P.G.
Project Geologist

PROFESSIONAL GEOLOGIST
Fred W. Gius
No. 7768
STATE OF CALIFORNIA

aqua science engineers inc.

July 30, 2002

Phase I Environmental Site Assessment
98-Acre Parcel
2420-2750 Eight Mile Road
Stockton, California 94212
A.P.N. 092-020-15
A.S.E. Job #3824

Prepared for:

Fran Mar Corp., Inc., Thomas Cattani, etal

Prepared by:

Aqua Science Engineers, Inc.
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1.0 EXECUTIVE SUMMARY

Based on the visual inspection of the subject site, the historical and database reviews, and local agency contact, the following environmental observations are noted.

On-Site

The subject site is an agricultural property at the address of 2420-2750 Eight Mile Road, Stockton, California 95212. The property has a recorded history of being an agricultural field with no history of development. The site improvements are limited to a dirt perimeter road, to surface irrigation channels, and to a raised levee/roadway bordering Bear Creek. The site has no structures. The property is currently planted in a corn crop, but the type of crop is reportedly rotated year by year.

The property contains no groundwater wells, wastewater clarifiers, or septic treatment systems.

need to investigate

The subject site has no agency record of historical fuel storage tanks, and no obvious external signs of fuel-storage tank equipment. The east adjacent SPRR line incorporates a fuel pipeline. This pipeline represents a significant potential for hydrocarbon releases to the subject site, and is a Recognized Environmental Concern.

The property's agricultural crop production and its setting in the San Joaquin Valley of Central California associate it with agricultural applications of herbicide, pesticide, and fertilizer. Our findings did not reveal any direct evidence that the subject site has significantly experienced undue or improper application of these agricultural chemicals. However, the potential for elevated concentrations of agricultural chemicals represents a Recognized Environmental Concern should the site usage change.

Two Recognized Environmental Concerns (RECs) were found in respect to the 98-Acre Parcel, the subject site:

- a potential for elevated agricultural chemical residues, and,
- a potential for hydrocarbon releases from the adjoining fuel pipeline.

In the event of a site use change from agriculture, ASE recommends an agricultural study for potential pesticide levels that may be in conflict with the proposed use.

Off-Site

The adjacent sites do not appear to present a significant environmental concern to the subject site at this time, with the exception of the adjoining fuel pipeline in the east adjacent Southern Pacific Railroad right of way.

ASE recommends a subsurface environmental assessment be performed in accordance with local agency guidelines to determine if any petroleum releases have occurred along the SPRR fuel pipeline.

2.0 INTRODUCTION

2.1 Purpose

The objective of this Phase I Environmental Site Assessment was to identify, to the extent feasible, recognized environmental conditions (RECs) in connection with the subject property relative to the date of this report. This Phase I Environmental Site Assessment contains four major components (1) records review; (2) site reconnaissance; (3) interviews with regulatory agencies/property owners; (4) reporting. This Phase I Environmental Site Assessment was prepared using the guidelines within the American Society for Testing and Materials (ASTM) Designation: E 1527-00.

2.2 Special Terms and Conditions

No special terms or conditions were made between Aqua Science Engineers, Inc. (ASE) and Fran Mar Corp. LP, Thomas Cattani, etal., our Client, or the operators of the subject property. This report has been produced by ASE to be within the scope of the American Society for Testing and Materials (ASTM) *Standard Practice for Environmental Assessment: Phase I Environmental Site Assessment Process* document (Designation: E 1527-00).

2.3 Limitations and Exceptions of Assessment

As noted in the ASTM E 1527-00 Standard Practice document, the environmental professional conducting the Phase I Environmental Site Assessment is responsible to determine the content of the report. Therefore, Aqua Science Engineers, Inc. (ASE), with extensive experience in conducting Phase I Environmental Site Assessments, has strategically designed this Phase I Environmental Site Assessment to provide a site-specific evaluation of the environmental conditions affecting the subject site. This report has been prepared for use solely by Fran Mar Corp. LP, Thomas Cattani, etal., our Client. This report shall not be relied upon by or transferred to any other party, or used for any other purpose, without the express written authorization of our Client, and Aqua Science Engineers.

3.0 SITE DESCRIPTION

3.1 Location and Legal Description

The subject property contains an agricultural field with the address of Nos. 2420-2750 Eight Mile Road in the City of Stockton, County of San Joaquin, and State of California. The property is approximately 98 acres in area.

The assessor's parcel number for the property is No. 092-020-15. We were provided with a title report dated 6/20/02 from Alliance Title as part of our research, which indicated the site address as 2420 Eight Mile Road. The title report lists no environmental liens against the property.

The site has street frontage on the south side of Eight Mile Road, and is otherwise bounded by its adjoining light-industrial properties on the west and east, fields on the west and north, an RV campground on the north, and Bear Creek and fields on the south. Please refer to Figures No. 1 through 4 for detailed diagrams and photographs of the subject site.

3.2 Site and Vicinity Characteristics

The subject site lies within a mixed-use zoning of agricultural and light-industrial use in the city limits of Stockton, California. The surrounding area is predominantly agricultural, as shown in Figure No. 3, Site Diagram, in Appendix A. Light-industrial and residential use occurs within 1/8 mile of the site.

3.3 Description of Structures, Roads, and Improvements

The site's current agricultural usage dates at least to the 1930s, according to our resources. The city streets have been in place for decades. The subject site has access via dirt roadways into Eight Mile Road. A liquid fuel lines for petroleum runs parallel the Southern Pacific Railroad track on the property's east border. No major power transmission corridors are known to cross or adjoin the subject site.

We observed that the Eight Mile Road right-of-way includes utility lines for such municipal utilities as electricity, water, telephone, and sewerage. However, the subject site currently has no formal connections to these utilities, and is served only by the surface channels of the local irrigation district.

3.31 Source of Potable Water

The property is not formally served with a potable water source, and utilizes only irrigation water supplied by the local irrigation district. The site has no private groundwater wells. The municipal source of water is drawn both from deep wells and from the Sacramento River.

3.32 Storm Drains and Sanitary Sewer Systems

The subject site is not connected to a municipal sanitary sewer system, private septic tank system, or storm drain system. Storm water is allowed to percolate into the agricultural field across its entire surface. A surface channel connects the field to the local irrigation district for control over supply and drainage.

It was noted that the adjacent PacBell property utilizes an engineered storm drain system, which involves a large catchment basin located at the south of the PacBell site. This basin was a standard development criterion required by the local planning department due to the site's pavements and lack of alternative storm drain access. We observed no apparent signs of environmental misuse of the storm water drainage.

3.33 Recycling and Solid Waste Disposal

Municipal service for recycling and solid waste disposal is not required for the property use.

3.34 Heating, Ventilation, and Cooling (HVAC) Systems

The property does not require a HVAC system.

3.35 Storage Tanks

No evidence of fuel storage tank equipment was observed, and no agency documents indicate an onsite UST history.

The north and east adjacent sites have a recorded fuel tank history, as further discussed in this report's Section 5.0, Regulatory Review.

3.36 Radon Statistics

The EDR report indicates that the subject area of San Joaquin County has an EPA Radon Zone 3 rating. The reported average indoor levels of radon gas were 2.7 pCi/L or less, which is below the 4.0 pCi/L threshold level of concern. ASE did not test for radon at the subject site.

3.4 Environmental Setting

3.41 Geology

The site rests within the San Joaquin Valley, in the Great Valley Geomorphic Province of California, on relatively level ground at an elevation of approximately 30 feet above mean sea level. Descriptive reports prepared for local sites indicate that the subsurface of the subject property consists primarily of alluvial sediments deposited by Bear Creek and the general deltaic system of the Sacramento River. Local soils reports indicate the surface soils are silty clay loam of the Vignolo type, with low slopes of less than two percent. Sedimentary deposits in this area are on the order of several hundreds of feet in thickness.

The subject site is not within an Alquist-Priolo Seismic Studies Zone.

3.42 Hydrogeology/Hydrology

Groundwater is anticipated to lie within 25 feet below ground surface, flowing in a low gradient in the northeasterly direction, based on the site's setting in an irrigated district, the topographic slope, and the proximity to Bear Creek. The Regional Water Quality Control Board protects the near-surface groundwater in this groundwater basin area as a natural resource and as a potential source of drinking water.

The site is mapped within the 500-year recurrence flood zones by FIRM Maps on CPN 0602990295B, dated 9/30/82. The nearest surface body of water is Bear Creek on the south border of the subject site, which is within the 100-year flood zone enclosed by the levee system. The site lies outside of the mapped wetland areas of Bear Creek.

3.5 Information Regarding Environmental Liens

No environmental liens were identified for the subject site during the preparation of this report.

3.6 Current Use of Property

On July 23, 2002, ASE representative Mr. Rick Widebrook conducted a site walk at the subject site. We obtained supporting information on the site from the site's realtor, Mr. Tad Platt, and from Mr. David Beretta, the property owner.

The site is approximately 98 acres in area. Its area is dominated by the agricultural field, which currently supports a corn crop. The perimeter of the field contains dirt roadways and irrigation channels built of embanked soil. A windrow of silage, i.e., natural soil enhancement materials, had recently been placed for storage on the south edge of the site. Small amounts of miscellaneous debris, such as tires and broken appliances, littered the rear corner ditches of the property. We observed no signs of distressed vegetation.

Features of the adjoining properties are discussed in the next section.

Based upon our sitewalk, interviews, and record reviews, we observed no obvious signs of significant environmental concerns related to the current activities of the subject site. Although the subject site's farming operation involve use of agricultural products, it appears to do so in a manner consistent with similar facilities complying with local, state, and federal regulations.

3.7 Former Uses and History of Property

Aerial photographs and property documents indicate the first use of the site as an agricultural field prior to the 1930s. A more-detailed history of onsite farming could not be reconstructed from the reasonably available sources.

3.71 Rationale

The purpose of the records review is to obtain and review records, photographs, maps and other related historical documents that will assist in the identification of recognized environmental conditions in connection with the subject property. The objective of consulting historical sources is to develop a history of the property and surrounding area. This review helps identify the likelihood of past uses having led to recognized environmental conditions in connection with the property. The following recommended sources/databases are used to investigate the property history.

3.72 Historical Aerial Photographs Review

ASE representative Rick Widebrook viewed aerial photographs of the area from the UC-Davis Earth Sciences Library and the County of Stockton Planning department on July 23, 2002.

<u>1937 & 1952</u>

The subject site was crop-production farmland, as were the surrounding properties. The Southern Pacific Railroad adjoined the east side of the property, and Bear Creek adjoined the south border of the property.

<u>1957 & 1963</u>

The subject site and north, west, and south sites remained agricultural, but the PacBell facility was developed out of the northwestern corner of the subject parcel. The east adjacent site contained the Tri-Valley Growers canning plant, consisting of large buildings, parking lots, and eight industrial processing ponds.

<u>1975 & 1985</u>

The subject site and north, west, and south sites remained agricultural. The Tri-Valley Growers canning plant on the east adjacent site expanded. The levees on Bear Creek were enlarged.

<u>2002</u>

The subject site and north, west, and south sites remained agricultural. The east adjacent site remained the Tri-Valley Growers canning plant. A new development (Freitas Trucking) was visible on the east side of the PacBell facility.

In summary, the aerial photographs confirmed the general progression of site use as established through other similar sources of historical evidence. No potentially negative features onsite could be ascertained from the available photographic resolutions.

3.73 Historical Maps Review (Sanborn Fire Insurance; USGS Historical Topo Maps)

The historical Sanborn Maps do not cover the study area. A current USGS topographic map contained the following features.

- The subject site contained the flood-controlled channel of Bear Creek.
- The west adjacent site contained a "Well 29".
- The east adjacent site contained large buildings, storage units, and six storage ponds.

3.74 Business License Review

The local financial and tax records offices were not able to provide us with useful documentation.

3.75 Building Permit Review

Research of historical building permits was made by ASE at the City of Stockton Department of Public Works on July 23, 2002. No permits were recovered, which was consistent with the agricultural property usage.

3.76 City Directory Review

No potentially useful city directories for Stockton were available.

4.0 SURROUNDING PROPERTIES

4.1 Description

A general description of the usage of surrounding and/or adjoining properties is determined by the environmental professional during the site visit, through interviews or from the records review. This is performed to help identify recognized environmental concerns that may have the potential to impact the subject site.

4.11 Current Uses of Surrounding and/or Adjoining Properties

Based on our site visit, the use of the surrounding properties includes light industrial use, agricultural fields, a railroad track, and residential use. The west adjacent sites include the PacBell corporation yard, and the Freitas Trucking corporation yard. The east adjacent site is the defunct canning plant of Tri-Valley Growers. A Southern Pacific Railroad track runs north-south at the subject site's east side, and also contains a buried petroleum pipeline. One of the north adjacent properties is a KOA RV campground.

4.12 Former Uses of Surrounding and/or Adjoining Properties

The east adjacent site is the Tri-Valley Growers now-closed canning plant, reportedly operational from 1950 to about 1995. The plant's former storage ponds on the back lot were reportedly used to hold vegetable-washing water. Otherwise, based upon historical evidence review, the remaining uses of the surrounding properties were indicated to be similar to the present usage.

5.0 REGULATORY REVIEW

5.1 Purpose

The purpose of the regulatory review is to research regulatory agency records that will assist in the identification of recognized environmental conditions in connection with the subject property and neighboring properties within a 1-mile radius. The regulatory review also includes visiting or contacting local regulatory agency representatives for interviews regarding the subject site or surrounding properties. The regulatory review is split into three major components (1) federal, (2) state, and (3) local. We have summarized the sources/databases used to investigate the regulatory issues of the subject site and surrounding properties. The following information was provided to ASE by EDR, Inc. (See Appendix D, for the full EDR report).

The subject site does not appear on any of the databases, which is consistent with its known history of use.

5.2 Federal

5.21 The National Priorities List (NPL)

There are no NPL sites within 1-mile radius of the subject site.

5.22 RCRA Corrective Actions (CORRACTS & CORRACTS-TSD)

The subject site address is not listed on the database. There are no CORRACTS sites within a 1-mile radius of the subject site.

5.23 Resource, Conversation and Recovery Act (RCRA; RCRIS-TSD)

The subject site address is not listed on the database. There are no RCRA corrective action sites or RCRA permitted treatment, storage or disposal facility within 1/2-mile radius of the subject site.

5.24 Emergency Response Notification System (ERNS)

The subject site address is not listed on the database.

5.25 RCRA Registered Generators of Hazardous Waste (GNRTR, RCRIS-LQG/SQG))

The subject site address is not listed on the database. There are no listed small-quantity generator within 1/8th mile, and one (1) small-quantity generator within 1/8th to 1/4 mile of the subject site.

5.3 State

5.31 Solid Waste Landfill Facilities (State Landfill, WMUDS/SWAT)

The subject site address is not listed on the database. There are no WMUDS/SWAT or State Landfill sites within 1/2-mile radius of the subject site.

5.32 Leaking Underground Storage Tank List (LUST)

The subject site address is not listed on the database. There are no LUST sites within 1/8-mile radius of the subject site; no LUST sites within a 1/8-1/4 mile radius of the subject site, and one (1) LUST site within a 1/4 to 1/2 mile radius of the subject site. We reviewed the closest sites of potential concern. None of the listed sites were considered to be sufficiently close or serious enough to pose a potential concern to the subject site. The one listed site (KOA Campground) currently received regulatory closure of it past release, and is currently without violation.

5.33 Hazardous Waste and Substances Sites (HWIS)

The subject address is not listed on the database. No HWIS sites were listed in the EDR report.

5.34 California Cerclis/ State Equivalent Priority List (SPL)

The subject site is not listed on the database. There is no site within 1-mile radius of the subject site.

5.35 Cal-Sites

The subject site address is not listed on the Cal-Sites database. There are no Cal-Sites cases within 1-mile radius of the subject site.

5.36 State Registered Underground or Aboveground Storage Tanks (UST/AST/HistUST)

The subject site is not listed on the UST/AST database. There is one (1) Historical UST site within 1/4-mile radius of the subject site. There is one (1) site on the Ca FID UST list within 1/8th mile of the subject site. Both these listings are cases that are not anticipated to pose a potentially significant environmental concern to the subject site, due to the reported tank characteristics and the local hydrogeology.

5.38 Cortese List (Cortese Senate Bill; Impacted Drinking Water Wells)

There are two (2) Cortese sites within a 1-mile radius of the subject site, of which are both greater than 1/4 mile of the subject site. None of the listings were interpreted to pose a potential environmental concern to the subject site.

5.4 Local

5.41 Regional Water Quality Control Board (RWQCB)

The Regional Water Quality Control Board indicated that their files did not include any of the local LUST cases. The County is the Local Oversight Program, as reported below in Section 5.42.

5.42 County Environmental Health Department Local Oversight Program

The County of Stockton, Department of Environmental Health, Local Oversight Program carried the pertinent UST and LUST files. Our research found that the nearest site, the KOA Campground, was not a significant release and has received regulatory closure. The former Tri-Valley Growers Plant #4 is listed with a Historical UST. In both these cases, our interpretation of the site specifics and the local hydrogeology places these sites downgradient of the subject site and not a potential concern the subject site.

5.43 City Fire Department, Fire Prevention Bureau

The City of Stockton Fire Department referred our inquiry to the County of Stockton.

5.44 City Building Department

Please see Section 3.75 for a discussion about permit-related information for the subject site. No environmental concerns were discovered in the building permit records.

6.0 SITE RECONNAISSANCE AND INTERVIEWS

6.1 Hazardous Substances/Materials Usage and Storage

Our interviewees informed us that the subject site is an agricultural user of categorical hazardous materials, including herbicides, pesticides, and fertilizers. We observed that there are no onsite storage activities for agricultural products outside of a recent pile of organic silage/soil builder material on the south border. No obvious signs of significant noncompliance issues were observed.

6.2 Hazardous Waste Storage, Disposal

Our observations, interviews, and records research indicate that no significant quantities of spent products, motor oil, antifreeze, etc. are generated, stored, or disposed of onsite.

6.3 Underground & Aboveground Storage Tanks, Sumps, Drains

The site has no current or historic USTs, as per the records, site walk, and personal interviews. The local environmental records indicated that no recorded tank usage had occurred.

The east adjacent site is currently the only user of a UST, per the Historical UST database. A small AST on a portable trailer was observed in use on the west adjacent site to fuel a small diesel motor on an irrigation pump.

Storm drainage onsite consists of sheet runoff to the onsite irrigation drains leading into Bear Creek. The street has no municipal storm drain system. We observed no significant staining in the drains or other potential concerns regarding the storm drainage onsite.

6.4 Identification of PCBs

No significant potential source of PCB-containing light ballasts was observed onsite. Four power utility transformers are located near the rear of the site. The transformers appeared to be recent models not indicative of potential PCB use; PG&E has updated virtually all older power transformers of potential PCB concern.

6.5 Identification of Asbestos Containing Materials or Lead-based Paint

The site has no structures or debris piles, therefore it has no concerns of Potentially Asbestos-Containing Materials (PACMs) or Lead-based Paint. It is noted that this Phase I ESA did not include testing of building materials.

6.6 Surface Staining, Distressed Vegetation

We did not find unusual or significant surface stains indicative of environmental releases on the site's asphalt parking lot. No distressed vegetation was indicated.

6.7 Summary of Interviews

ASE representative Mr. Rick Widebrook spoke to Mr. Tad Platt, a realtor familiar with the property. Mr. Platt said that to his knowledge regarding USTs, sumps, lagoons, or land disposals, the subject site has no history of such activities. The east adjacent site of the defunct canning plant formerly used storage ponds to aerate its water-based vegetable-washing effluent. The west adjacent site contains a large stormwater catchment basin. However, both these adjacent site uses do not involve significant potential environmental concerns, and do not pose a significant issue to the subject site. The west adjoining SPRR right of way contains a petroleum pipeline. The pipeline represents a significant presence of petroleum and related equipment, which poses a recognized environmental concern of potential releases to the subject site.

6.8 Other Conditions of Concern

The predominantly agricultural area, the San Joaquin Valley, enclosing the subject site has a long agricultural history. The subject site is not known to have experienced atypical agricultural applications of agricultural chemical products, or contain residual levels significantly in excess of the regional background. Nevertheless, if a change in site usage from agriculture is planned, an agriculture-oriented study to identify and quantify the potential for residual pesticide levels onsite would be recommended.

7.0 CONCLUSIONS

7.1 Subject Site

The property's historical use prior to the 1930s is indicated to be consistently agricultural cropland.

Of the documented records of nearby environmental cases, none were interpreted as a potential concern to the subject site. The listed database cases are either currently closed, are currently compliant, or are considered to be hydrogeologically unlikely to pose a potential environmental concern to the subject site.

The site contains no building materials or debris piles. Therefore, no significant concern of asbestos-containing or lead-containing building materials is anticipated. The property contains no groundwater wells, wastewater clarifiers, or septic treatment systems.

The subject site has no agency record of historical fuel storage tanks, and no obvious external signs of fuel-storage tank equipment. The property is currently planted in a corn crop, but the type of crop is reportedly rotated year by year.

The property's involvement in agricultural crop production and its setting in the San Joaquin Valley of Central California associates it with agricultural applications of herbicide, pesticide, and fertilizer. Our findings did not reveal any evidence that the subject site has significantly experienced undue or improper application of these agricultural chemicals. However, in the event of a site use change

from agriculture, it is recommended that a formal study for residual pesticide concentrations be coordinated with the local planning commission.

Two Recognized Environmental Concerns (RECs) were found in respect to the 98-Acre Parcel, the subject site: 1), the hydrocarbon pipeline on the SPRR right-of-way, and 2), the potential for elevated residual pesticide levels that may conflict with site use changes.

ASE does not recommend any subsurface environmental assessment activities related to on-site conditions at this time.

7.2 Off-Site

Based on the EDR report and our understanding of the local hydrogeology, the only off-site source that has a significant potential to impact the subject site is the offsite SPRR pipeline. The use of a petroleum distribution pipeline on the adjoining SPRR right-of-way represents a potential for hydrocarbon releases to the subject site, and is therefore a Recognized Environmental Concern.

ASE recommends a subsurface environmental assessment be performed in accordance with local agency guidelines to determine of any petroleum releases have occurred along the SPRR fuel pipeline.

8.0 REPORT LIMITATIONS

The findings and analysis contained in this Phase I Environmental Site Assessment report have been prepared by the professional staff of Aqua Science Engineers, Inc. (ASE) in accordance with generally accepted professional practices and from the guidance within the standard practice of ASTM E 1527-00.

Some of the information provided in this Phase I Environmental Site Assessment report is based upon personal interviews and research of available documents, records and maps held by appropriate government and private agencies. This is subject to the limitations of the historical documentation, availability and accuracy of pertinent records, and the recollection of those persons contacted and interviewed. The information contained in this report has received appropriate technical and peer review. The findings and analysis represent professional judgments and are based upon the investigations conducted and the review and interpretation of such data based on our experience and expertise according to the existing standard. No warranty or guarantee is expressed or implied. The scope of services within this Phase I Environmental Site Assessment did not include sample collection and/or analysis for hazardous materials. In addition, it did not include a property title search or evaluate asbestos, radon or seismic risk.

The findings and analysis set forth in this report are strictly limited in time and scope to the date of the evaluation(s), and for the sole use of our client.

9.0 SIGNATURE OF ENVIRONMENTAL PROFESSIONALS

Aqua Science Engineers, Inc. appreciates the opportunity to have prepared this Phase I Environmental Site Assessment for our client. Should any questions or comments arise, please feel free to call us at (925) 820-9391.

Respectfully submitted

AQUA SCIENCE ENGINEERS, INC.

Rick Widebrook, R.E.A. 06603
Project Manager

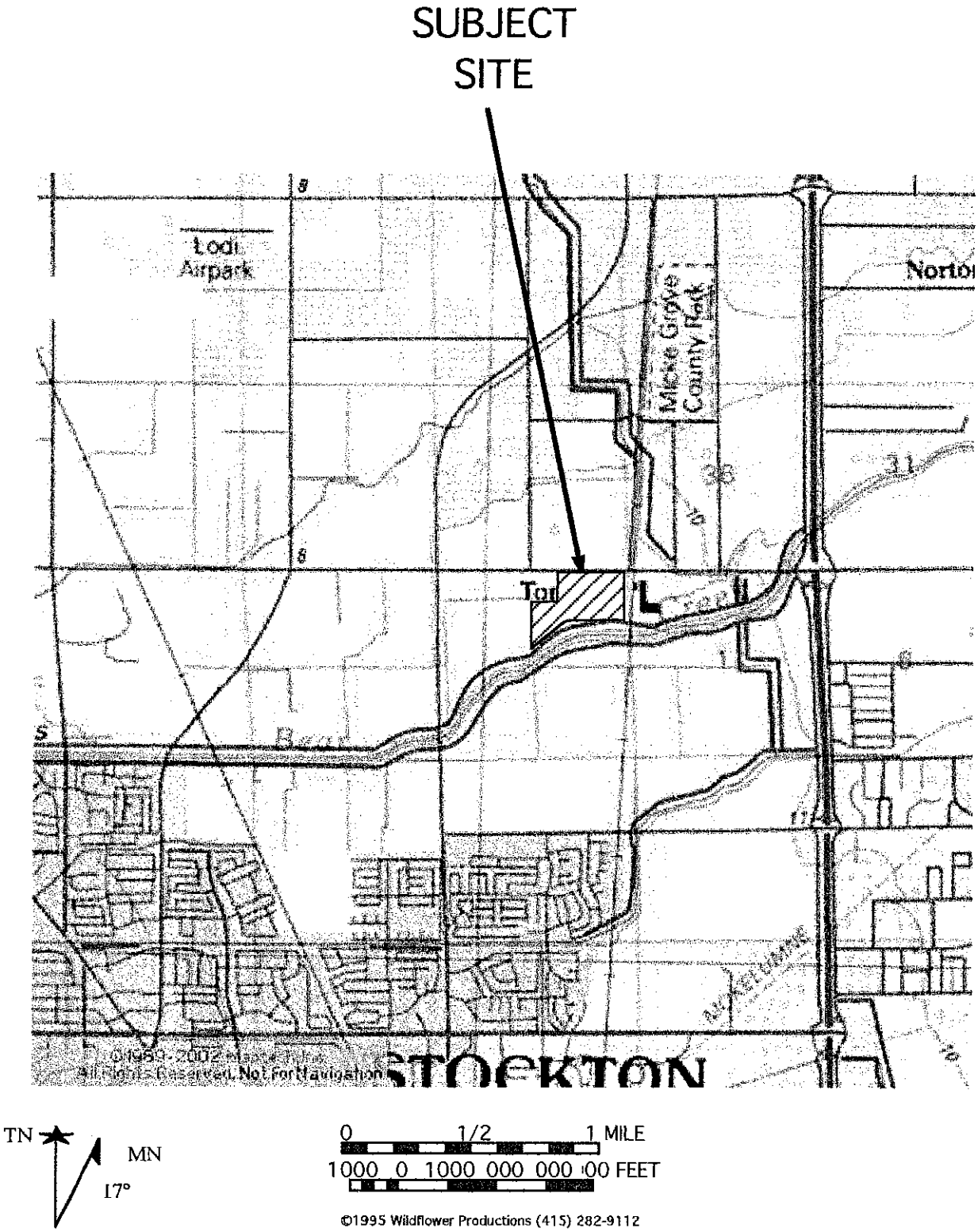
Gerald W. Sasse, R.E.A. 06963
Vice President

REGISTERED ENVIRONMENTAL ASSESSOR
RICK WIDEBROOK
No. 6603
Expires 6-30-03
STATE OF CALIFORNIA

APPENDICES

APPENDIX A

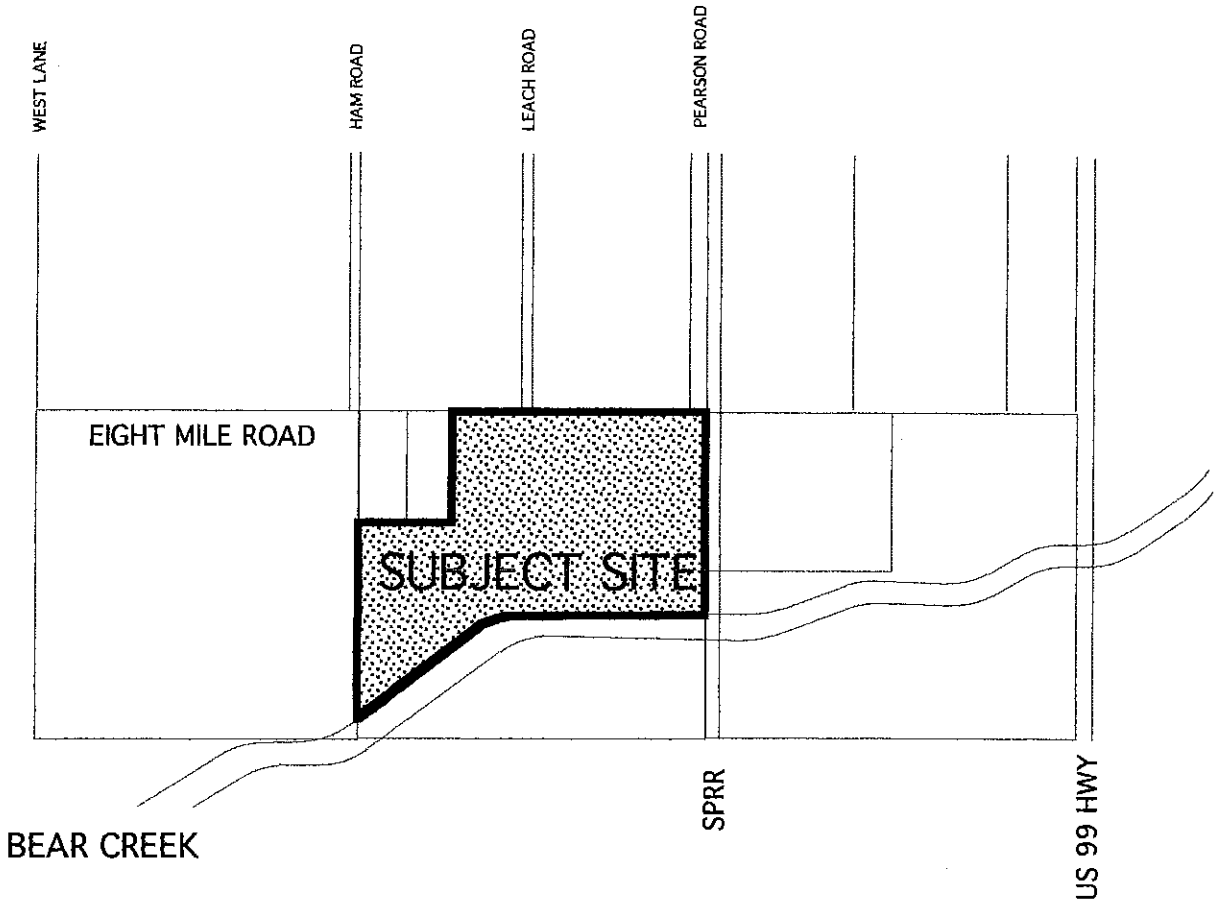
Figures



PHASE I ENVIRONMENTAL SITE ASSESSMENT *98-Acre Parcel, APN 092-020-15* *2750 E. Eight Mile Road* *Stockton, CA 95209*	VICINITY MAP
	DRAWN BY: RW **7/20/02**
	ASE JOB NO. 3824 **FIGURE NO.1**

SURFACE ELEVATION:
APPROXIMATELY 19 FEET AMSL

NOT TO SCALE

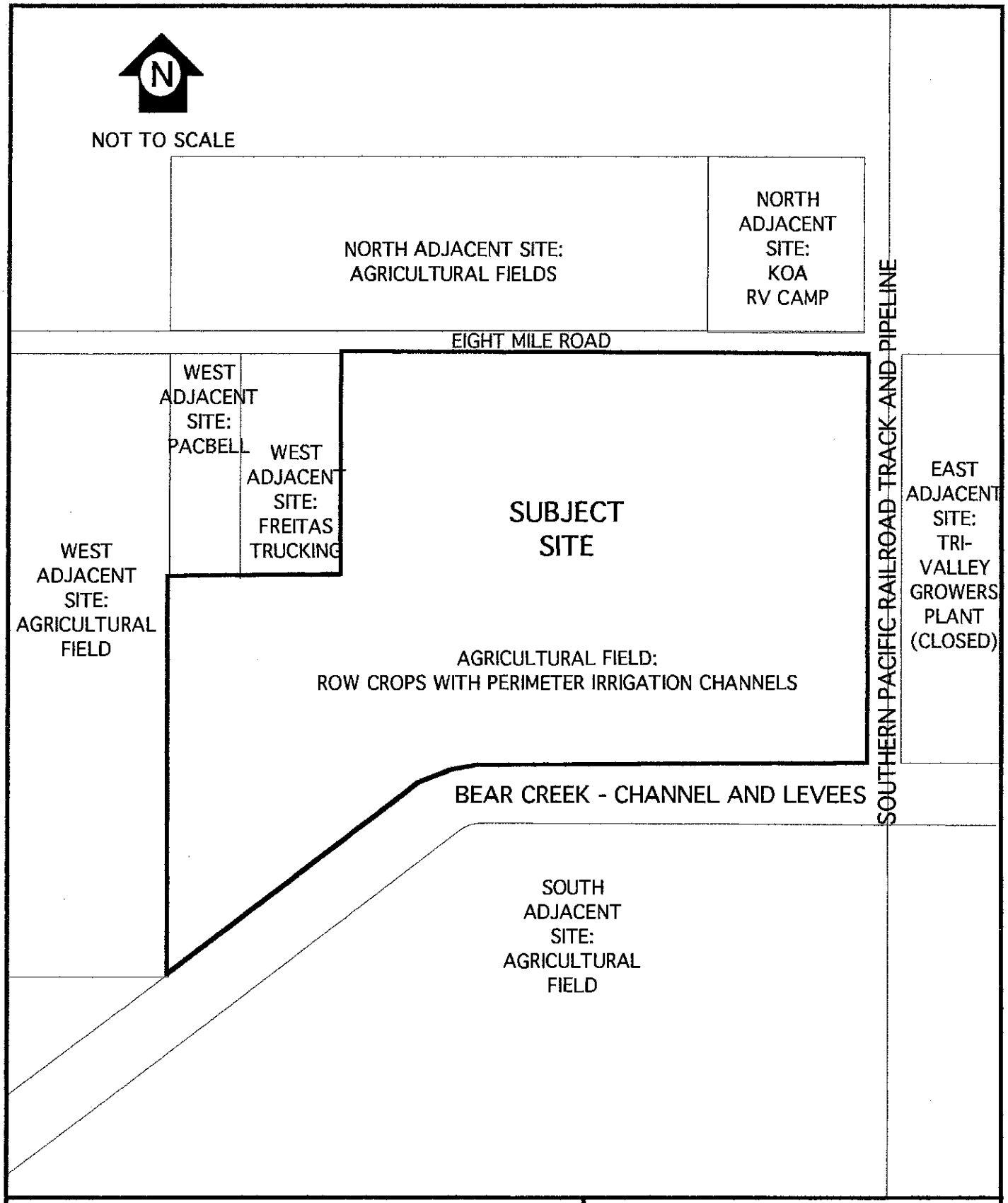


PHASE I ENVIRONMENTAL SITE ASSESSMENT
98-Acre Parcel, APN 092-020-15
2750 E. Eight Mile Road
Stockton, CA 95209

SITE SCHEMATIC

DRAWN BY: RW DATE: 7/20/02

ASE JOB NO. 3824 FIGURE NO. 2



PHASE I ENVIRONMENTAL SITE ASSESSMENT
98-Acre Parcel, APN 092-020-15
2750 E. Eight Mile Road
Stockton, CA 95209

SITE DIAGRAM

DRAWN BY: RW DATE: 7/20/02

ASE JOB NO. 3824 FIGURE NO. 3

APPENDIX B

Permits and Licenses

APPENDIX C

Photographs

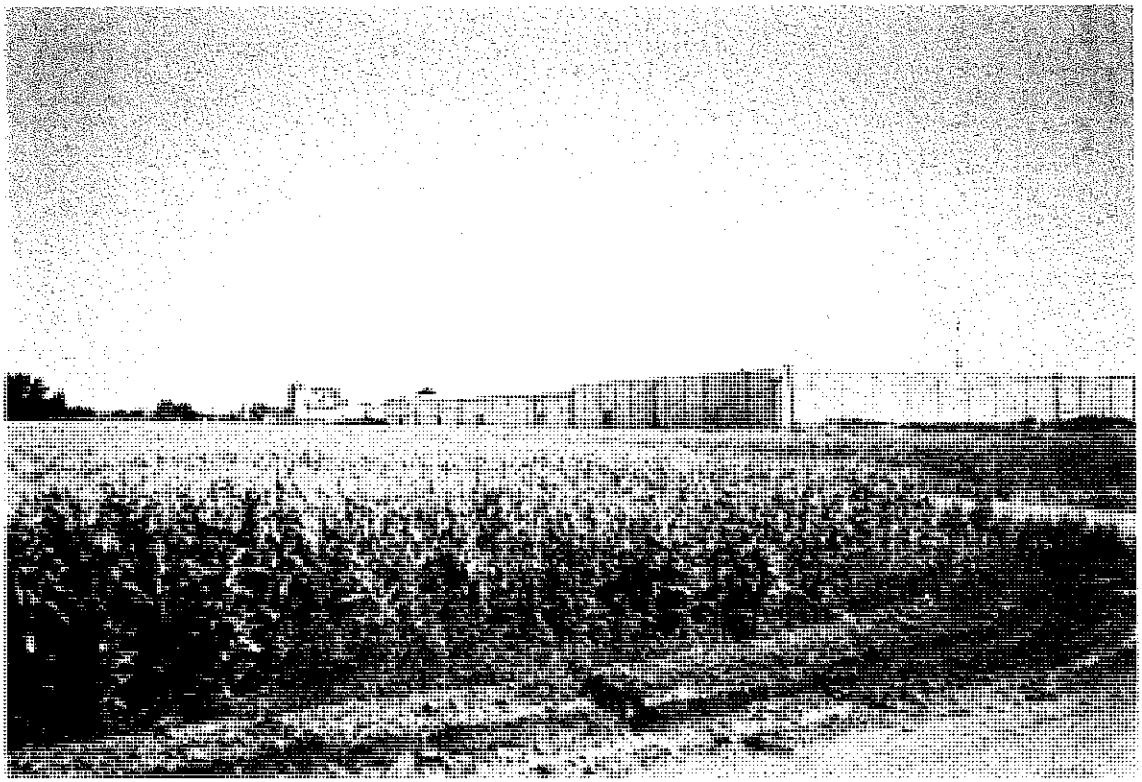


PHOTO 1: SUBJECT SITE: A view of the southwest corner of the field, currently in corn production. To the right background is the warehouse of the closed Tri-Valley Growers vegetable canning plant.

PHOTO 2: SUBJECT SITE AND SOUTH ADJACENT SITE: Viewed looking east, with the subject site's cornfield on the left, Bear Creek in the center, and the south adjacent agricultural field to the right.

PHASE I ENVIRONMENTAL SITE ASSESSMENT *98-Acre Parcel, APN 092-020-15* *2750 E. Eight Mile Road* *Stockton, CA 95209*	**PHOTO PLATE** **DRAWN BY: RW** **DATE: 7/20/02** **ASE JOB NO. 3824** **FIGURE NO. 4A**

PHOTO 3: WEST ADJACENT SITES: View looking east at the stormwater catchment basin of the PacBell Facility, in the foreground, and of the truck trailers parked on the Freitas Trucking yard, in the background.

PHOTO 4: NORTH ADJACENT SITE: View looking north of the KOA RV campground at 2851 Eight Mile Road.

PHASE I ENVIRONMENTAL SITE ASSESSMENT *98-Acre Parcel, APN 092-020-15* *2750 E. Eight Mile Road* *Stockton, CA 95209*	**PHOTO PLATE** **DRAWN BY: RW** **DATE: 7/20/02** **ASE JOB NO. 3824** **FIGURE NO. 4B**

APPENDIX D

Statement of Qualifications

AQUA SCIENCE ENGINEERS, INC. PRINCIPAL STAFF

David Schultz, P.E., R.E.A.
President
B.S. Marine Biology, **U.C. Berkeley**, M.S. Civil Engineering, **U.C. Berkeley**
Registered Civil Engineer, CA #38738, CA Contractors License #487000, A, HAZ, C-57

Directs field operations for California from the Irvine office including hazardous waste management, assessments, remediation projects, construction, geologic investigations, engineering and regulatory compliance services.

Mr. Schultz has over 20 years experience in performing contaminated soil, groundwater and wastewater assessment and remediation services. Mr. Schultz has served as an expert witness in numerous contaminated property cases. Mr. Schultz also serves as Corporate Chief Engineer.

Gerald W. Sasse, R.E.A.
Chief Executive Officer
B.S. Business Management, **San Diego State University**, Certificate in Hazmat Transportation OSHA Compliance, Registered Environmental Assessor, California #06963

Manages operations of the corporate offices including administration, scheduling, cost accounting, marketing, and project management.

With over 25 years of hands-on experience, Mr. Sasse is uniquely qualified in the environmental field by way of the chemical industry. Having been the co-owner of a chemical manufacturing company, he is familiar with the financial, investigative, and remedial process involved in chemical site cleanups.

Michael Marello, R.G.
Vice President, Senior Geologist
B.S. Geology, **U.C. Davis**, Registered Geologist, California #5339, California Certified Hydrogeologist #628

Responsible for geoscience consulting and project management and implementation. With nearly 15 years in the industry, Mr. Marello coordinates projects ranging from surface spill investigations to aquifer analysis and remediation. He manages investigations involving soil and groundwater contamination at commercial and industrial sites. These investigations involve site histories, preparation of sampling programs in compliance with local municipalities, and installation of groundwater monitoring wells in order to

gain information regarding geologic conditions. Additionally, Mr. Marello designs site investigations, risk-based assessments, and remedial action plans.

AQUA SCIENCE ENGINEERS, INC. SENIOR STAFF

David Allen, R.E.A.
Senior Project Manager, Assessor
B.S. Industrial Technology, **San Jose State University**, Registered Environmental Assessor, California #06211

Responsible for coordinating Phase I and Phase II investigations involving the integration of ASE's engineering, geotechnical, drilling, and field-services departments. Manages risk-based assessment and remediation projects, on-going in-situ remediation projects, and industrial process engineering contracts.

Mr. Allen is also responsible for general content and report format for all ASE Phase I Environmental Site Assessments.

Robert E. Kitay, R.G., R,E.A.
Senior Project Geologist
B.A. Geology, **California State University, Sacramento**, Registered Geologist California #6586, Registered Environmental Assessor, California #05442

Mr. Kitay has over 11 years experience conducting environmental investigations at over 280 sites. Responsibilities include proposal and workplan preparation, monitoring and remedial well installations, geologic interpretations, and investigative/remedial report preparation. Acts as liason between clients and environmental agencies. Directs drilling operations for the region.

Valentin Constantinescu, R.E.A.
Project Geologist
MSc, Engineering, Geology, and Geophysics, **University of Bucharest, Romania,** AHERA Asbestos Inspector, California Cert. #2199, Registered Environmental Assessor, California, #05246

Responsible for Phase I Environmental Assessments which include performing site visits, agency file reviews, database searches, conducting interviews, and preparing reports. Mr. Constantinescu has also performed hundreds of environmental compliance investigations and assessments of soil and groundwater, including well design and installations, and report preparation.

APPENDIX E

Regulatory Agency/Information Source Documentation

Rick Widebrook, 116 College Avenue, San Francisco, CA 94112 415-452-0629

Title: **Geologist/Environmental Assessor**

Summary of Qualifications: Mr. Widebrook has over ten years of experience in the fields of geotechnical engineering and environmental consulting. Active in construction geology, engineering inspections, and environmental air, soil, and water monitoring. Responsible for conducting geotechnical investigations, Phase I and Phase II environmental site assessments, and Remedial Investigations/Feasibility Studies. Experienced in all phases of groundwater well installations, monitoring, and closure. Performs Tier-2&3 Risk-Based Corrective Action (RBCA) evaluations for fuel-impacted properties.

Academic Background: M.S. Environmental Management, University of San Francisco.
B.S. Geology, University of Missouri.

Publication: *A Comparison of Two Non-Point Source Pollution Control Programs in Santa Clara County, California.* University of San Francisco, 1995.

Registrations: Registered Geologist No. 6699.
Registered Environmental Assessor No. 6603.

Certifications: Nuclear Density Gauge Radiation Safety Training
OSHA 40 hour Hazardous Waste Operations / Emergency Response Training.

Professional Affiliations: Association of Engineering Geologists.
Peninsula Geological Society.

Professional Experience: Current Position: Independent Consultant in Geology, Environmental Geology, and Geotechnical Geology

1996 to 2000: Environmental Department Manager and Project Geologist: Smith-Emery Company, San Francisco, California
1992 to 1995, Staff Geologist: Smith-Emery Company, San Francisco, California
1990 to 1992: Staff Geologist: Soil Foundation Systems, Sunnyvale, California

Major Environmental Projects:

Phase I Environmental Assessments (Over 125 total)

Bay Area: San Francisco, Napa, Los Gatos, San Ramon, Fremont Woodland, San Leandro, Benicia Richmond, Alameda, and South San Francisco
U.S.A: Idaho, Illinois, Iowa, Indiana, Texas, Washington, West Virginia, Florida, Iowa, and Ohio.

Phase II Site Investigations and Tank Removals

Former Texaco Station: Groundwater Monitoring System, Sonoma, CA
Private Landfill & Industrial Facility: Site Characterization, Benicia, CA
Muni-Metro Turnback Project, Waterfront Characterization, San Francisco, CA
Hunters Point Naval Shipyard, Shipyard Industrial Site Characterization, SF, CA
Bobac Freight: Site Characterization & Risk-Based Site Assessment, Alameda, CA
Former Manufacturing Facility: 3-Tank Removal and Closure, San Leandro, CA
Former Chevron Station: Phase II Investigation, Alameda, CA

Advanced Environmental Projects

Tier-2 Risk-Based Corrective Action and Site Closure, San Francisco, CA
Storm Water Pollution Prevention Plan, Beale Air Force Base, Travis, CA
Fuller II Lodge, Phase I ESA, Phase II ESA, Remedial Investigation & Feasiblity Study, Site Remediation Workplan using Soil Washing & Immobilization of Lead Impacts

Excerpt from ASTM E-1527-00: Definition of Recognized Environmental Concern

Excerpted from:

ASTM E-1527-00, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. Published July 2000, American Society of Testing and Materials.

3. Terminology

3.3 Definition of terms specific to this standard:

3.3.31 recognized environmental conditions – the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water or the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis* are not recognized environmental conditions.

The following agencies or organizations were contacted or visited, and information sources used regarding the subject property:

- California Regional Water Quality Control Board
- San Joaquin County Building Department
- City of Stockton Tax Collector's Department
- City of Stockton Public Library
- City of Stockton Fire Department
- City of Stockton Public Works Department
- EDR Environmental Data Reports
- Flood Insurance Rate Map, CPN 0602990295B
- UC Berkeley Online Historical USGS Topographic Map Collection.
- Alquist-Priolo Special Studies Zones Maps.
- "Phase I Environmental Site Assessment for the Vacant Land, Eight Mile Road, Stockton, CA 95241), by Northwest EnviroCon, Inc., dated March 1, 1995.

No other pertinent source was reviewed by Aqua Science Engineers, Inc. during this Phase I Environmental Site Assessment.

Anthony Lizzi, R.E.A.
Assessor, Project Geologist
B.S. Specialization Geology, **Concordia University Montreal, Canada**, Registered Environmental Assessor, California, #7000

Mr. Lizzi is responsible for implementation and supervision of projects associated with sire characterization, monitoring, and documenting site remediation. Mr. Lizzi has over 13 years experience in environmental geology including three years as a mining/structural geologist for two Canadian mining companies.

Mr. Lizzi has served as a Project Manager for and EPA Superfund Landfill site in Los Angeles from 1992 to 1996. Her performed multiphase site assessments as well as supervised the installation of vadose zone, leachate and groundwater monitoring wells for Superfund sites.

He has implemented many aquifer pump tests in Superfund and solid waste landfills. Also, he conducted detail surface and subsurface geological mapping in the mining industry.

APPENDIX F

EDR Report
(excerpt)

The EDR Radius Map
with GeoCheck®

98-Acre Parcel
Eight Mile Road
Stockton, CA 95212

Inquiry Number: 815732.1s

July 16, 2002

Environmental Data Resources, Inc.

The Source For Environmental Risk Management Data

3530 Post Road
Southport, Connecticut 06890

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-00. Search distances are per ASTM standard or custom distances requested by the user.

TARGET PROPERTY INFORMATION

ADDRESS

EIGHT MILE ROAD
STOCKTON, CA 95212

COORDINATES

Latitude (North):	38.055400 - 38' 3' 19.4"
Longitude (West):	121.282700 - 121' 16' 57.7"
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	650670.1
UTM Y (Meters):	4213148.0

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property:	2438121-A3 LODI SOUTH, CA
Source:	USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the ASTM E 1527-00 search radius around the target property for the following databases:

FEDERAL ASTM STANDARD

NPL	National Priority List
Proposed NPL	Proposed National Priority List Sites
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP	CERCLIS No Further Remedial Action Planned
CORRACTS	Corrective Action Report
RCRIS-TSD	Resource Conservation and Recovery Information System
RCRIS-LQG	Resource Conservation and Recovery Information System
ERNS	Emergency Response Notification System

STATE ASTM STANDARD

AWP	Annual Workplan Sites
Cal-Sites	Calsites Database
Notify 65	Proposition 65 Records
Toxic Pits	Toxic Pits Cleanup Act Sites
SWF/LF	Solid Waste Information System

EXECUTIVE SUMMARY

WMUDS/SWAT..... Waste Management Unit Database
CA BOND EXP. PLAN..... Bond Expenditure Plan
UST..... List of Underground Storage Tank Facilities

FEDERAL ASTM SUPPLEMENTAL

CONSENT..... Superfund (CERCLA) Consent Decrees
ROD..... Records Of Decision
Delisted NPL..... National Priority List Deletions
FINDS..... Facility Index System/Facility Identification Initiative Program Summary Report
HMIRS..... Hazardous Materials Information Reporting System
MLTS..... Material Licensing Tracking System
MINES..... Mines Master Index File
NPL Liens..... Federal Superfund Liens
PADS..... PCB Activity Database System
RAATS..... RCRA Administrative Action Tracking System
TRIS..... Toxic Chemical Release Inventory System
TSCA..... Toxic Substances Control Act
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

STATE OR LOCAL ASTM SUPPLEMENTAL

AST..... Aboveground Petroleum Storage Tank Facilities
CLEANERS..... Cleaner Facilities
CA WDS..... Waste Discharge System
DEED..... List of Deed Restrictions
CA SLIC..... Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
HAZNET..... Hazardous Waste Information System

EDR PROPRIETARY HISTORICAL DATABASES

Coal Gas..... Former Manufactured Gas (Coal Gas) Sites

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Elevations have been determined from the USGS 1 degree Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. EDR's definition of a site with an elevation equal to the target property includes a tolerance of +/- 10 feet. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property (by more than 10 feet). Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

FEDERAL ASTM STANDARD

RCRIS: The Resource Conservation and Recovery Act database includes selected information on sites that generate, store, treat, or dispose of hazardous waste as defined by the Act. The source of this database is the U.S. EPA.

A review of the RCRIS-SQG list, as provided by EDR, and dated 06/10/2002 has revealed that there is 1 RCRIS-SQG site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
TRI VALLEY GROWERS PLANT 4	***3200 E EIGHT MILE ROAD***	***1/8 - 1/4 NW***	***A1***	***6***

STATE ASTM STANDARD

CHMIRS: The California Hazardous Material Incident Report System contains information on reported hazardous material incidents, i.e., accidental releases or spills. The source is the California Office of Emergency Services.

A review of the CHMIRS list, as provided by EDR, and dated 12/31/1994 has revealed that there is 1 CHMIRS site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
Not reported	3200 E. EIGHT MILE ROAD	1/8 - 1/4 NW	A2	6

CORTESE: This database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with USTs having a reportable release and all solid waste disposal facilities from which there is known migration. The source is the California Environmental Protection Agency/Office of Emergency Information.

A review of the Cortese list, as provided by EDR, has revealed that there are 2 Cortese sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
STOCKTON/LODI KOA CAMP GR	2851 EIGHT MI	1/4 - 1/2 ENE	B4	8
PACIFIC BELL	***2300 EIGHT MILE RD***	***1/2 - 1 WNW***	***6***	***9***

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 01/17/2002 has revealed that there is 1 LUST site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
STOCKTON/LODI KOA CAMP GROUND	2851 EIGHT MILE RD	1/4 - 1/2 ENE	B5	8

EXECUTIVE SUMMARY

CA FID: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, has revealed that there is 1 CA FID UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
TRI VALLEY GROWERS PLANT 4	***3200 E EIGHT MILE ROAD***	***1/8 - 1/4 NW***	***A1***	***6***

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there is 1 HIST UST site within approximately 0.25 miles of the target property.

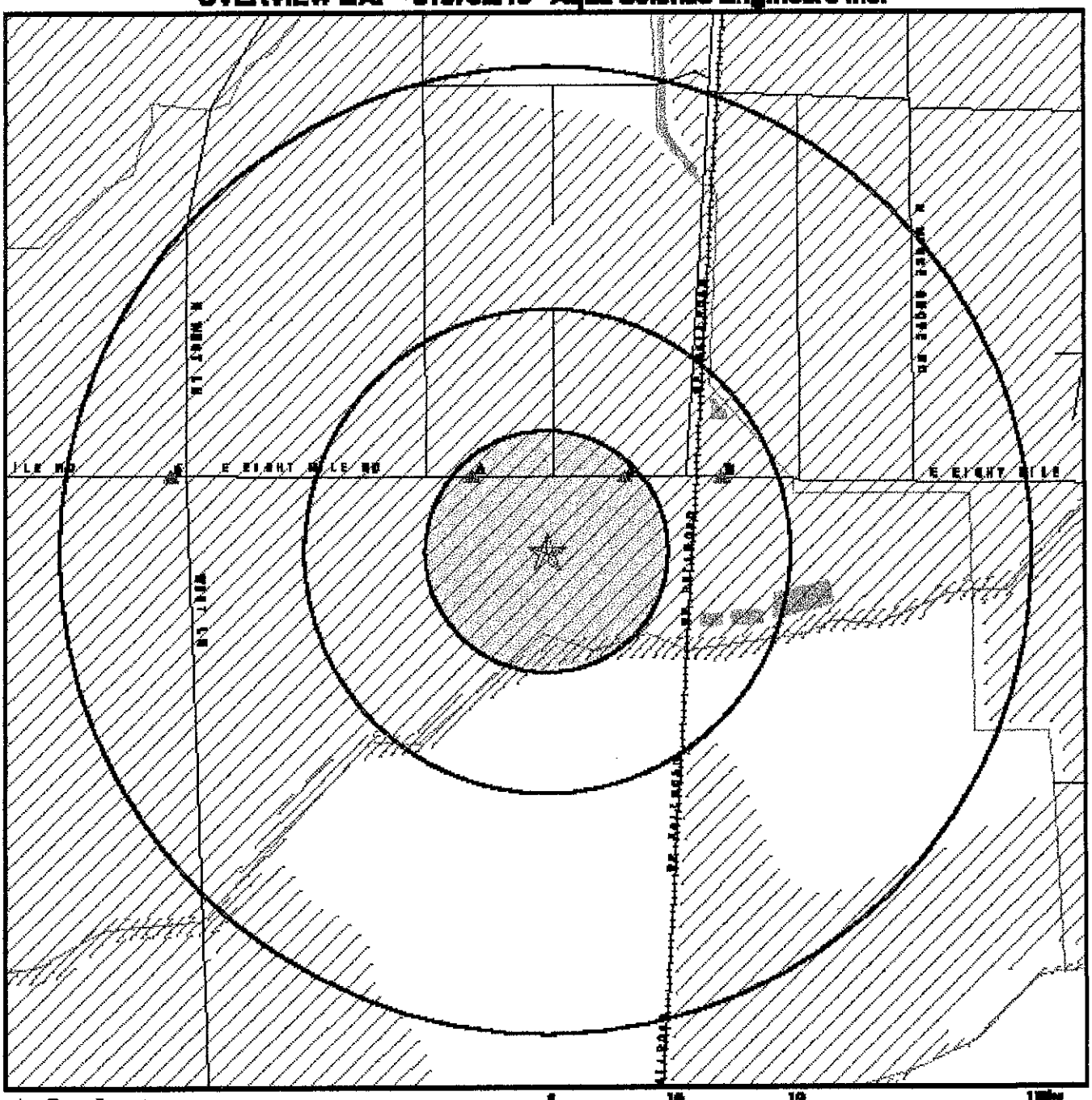
Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
EIGHT MILE ROAD RANCH	3749 E EIGHT MILE RD	1/8 - 1/4 NE	3	7

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
LODI GROUNDWATER SITE	Cal-Sites, Cortese, AWP
PG&E GAS PLANT LODI	CERC-NFRAP
DURANGO TIRE (CHP SITE)	SWF/LF
DEFENSE REUTILIZATION & MARKETING	SWF/LF
ROSA RANCH	HIST UST
BOYETT PETROLEUM	HAZNET
LINCOLN VILLAGE SHOPPING CENTER	CA SLIC
HERMAN & HELEN'S MARINA	CA SLIC

OVERVIEW MAP - 815732.1s - Aqua Science Engineers Inc.



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Coal Gasification Sites
- National Priority List Sites
- Landfill Sites
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Wetlands
- Areas of Concern

TARGET PROPERTY:	98-Acre Parcel	CUSTOMER:	Aqua Science Engineers Inc.
ADDRESS:	Eight Mile Road	CONTACT:	Rick Widebrook
CITY/STATE/ZIP:	Stockton CA 95212	INQUIRY #:	815732.1s
LAT/LONG:	38.0554 / 121.2927	DATE:	July 18, 2002 8:12 pm

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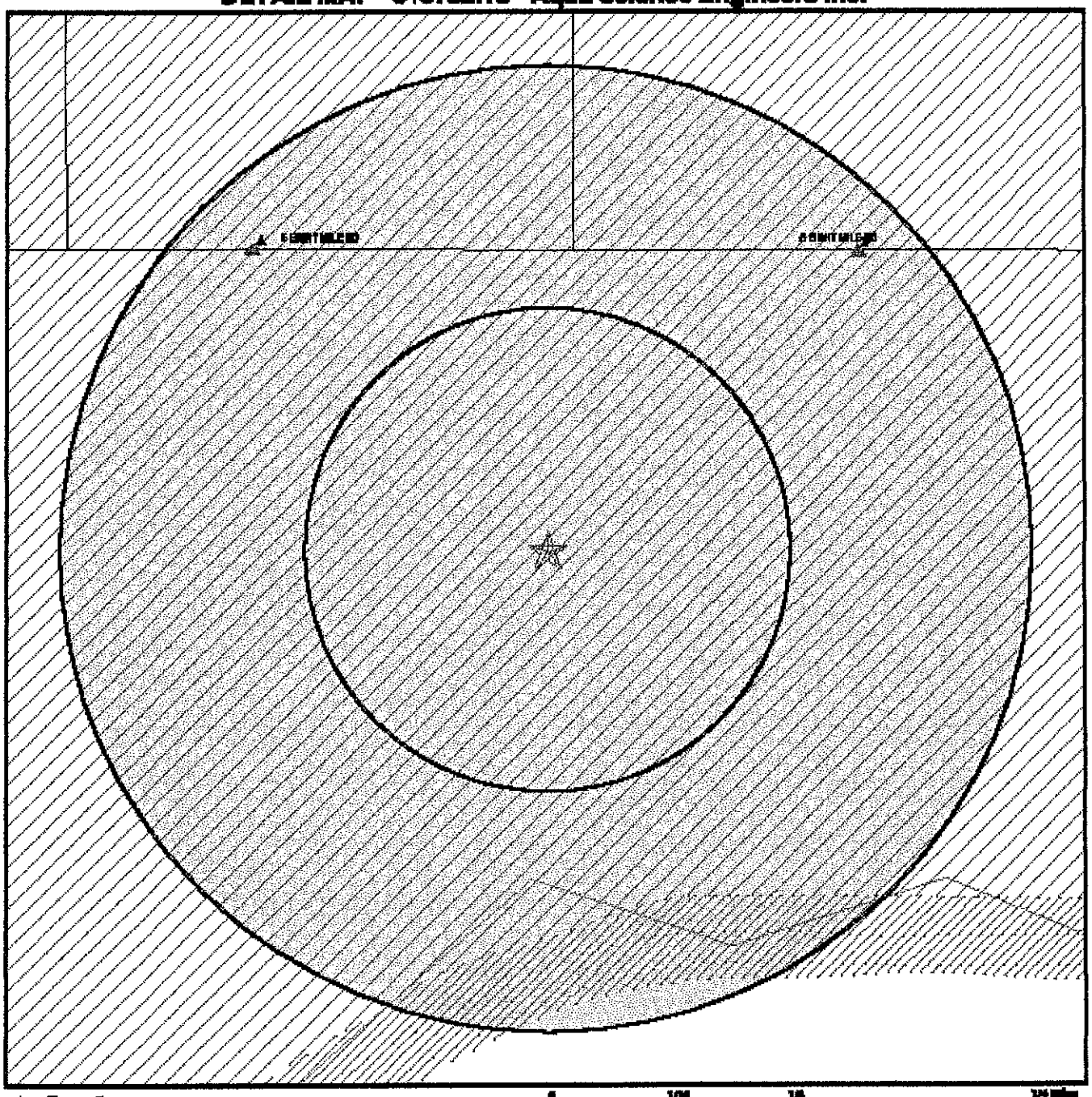
DETAIL MAP - 815732.1s - Aqua Science Engineers Inc.



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Areas of Concern

TARGET PROPERTY:	88-Acre Parcel	CUSTOMER:	Aqua Science Engineers Inc.
ADDRESS:	Eight Mile Road	CONTACT:	Rick Widelcruck
CITY/STATE/ZIP:	Stockton CA 95212	INQUIRY #:	815732.1s
LAT/LONG:	38.0554 / 121.2927	DATE:	July 18, 2002 8:12 pm

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MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FEDERAL ASTM STANDARD								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.250	0	0	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
RCRIS-TSD		0.500	0	0	0	NR	NR	0
RCRIS Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRIS Sm. Quan. Gen.		0.250	0	1	NR	NR	NR	1
ERNS		TP	NR	NR	NR	NR	NR	0
STATE ASTM STANDARD								
AWP		1.000	0	0	0	0	NR	0
Cal-Sites		1.000	0	0	0	0	NR	0
CHMIRS		1.000	0	1	0	0	NR	1
Cortese		1.000	0	0	1	1	NR	2
Notify 65		1.000	0	0	0	0	NR	0
Toxic Pits		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
WMUDS/SWAT		0.500	0	0	0	NR	NR	0
LUST		0.500	0	0	1	NR	NR	1
CA Bond Exp. Plan		1.000	0	0	0	0	NR	0
UST		0.250	0	0	NR	NR	NR	0
CA FID UST		0.250	0	1	NR	NR	NR	1
HIST UST		0.250	0	1	NR	NR	NR	1
FEDERAL ASTM SUPPLEMENTAL								
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
NPL Liens		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
STATE OR LOCAL ASTM SUPPLEMENTAL								
AST		TP	NR	NR	NR	NR	NR	0
CLEANERS		0.250	0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CA WDS		TP	NR	NR	NR	NR	NR	0
DEED		TP	NR	NR	NR	NR	NR	0
CA SLIC		0.500	0	0	0	NR	NR	0
HAZNET		0.250	0	0	NR	NR	NR	0
EDR PROPRIETARY HISTORICAL DATABASES								
Coal Gas		1.000	0	0	0	0	NR	0

AQUIFLOW - see EDR Physical Setting Source Addendum

TP = Target Property

NR = Not Requested at this Search Distance

* Sites may be listed in more than one database

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

A1 NW 1/8-1/4 1147 ft. Higher — **TRI VALLEY GROWERS PLANT 4**, **3200 E EIGHT MILE ROAD**, **STOCKTON, CA 95212** — RCRIS-SQG 1000135457; FINDS CAD983635186; CA FID UST

Site 1 of 2 in cluster A

RCRIS:
Owner: TRI VALLEY GROWERS
(415) 445-1600
EPA ID: CAD983635186
Contact: ROBERT PARODI
(209) 572-5812
Classification: Small Quantity Generator
Used Oil Recyc: No
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
AIRS Facility System (AIRS/AFS)
Facility Registry System (FRS)
Resource Conservation and Recovery Act information system (RCRANFO)
Toxic Chemical Release Inventory System (TRIS)

FID:

Facility ID:	39002146	Regulate ID:	Not reported
Reg By:	Inactive Underground Storage Tank Location		
Cortese Code:	Not reported	SIC Code:	Not reported
Status:	Inactive	Facility Tel:	(209) 931-1531
Mail To:	Not reported 3200 E EIGHT MILE RD STOCKTON, CA 95212		
Contact:	Not reported	Contact Tel:	Not reported
DUNs No:	Not reported	NPDES No:	Not reported
Creation:	10/22/93	Modified:	00/00/00
EPA ID:	Not reported		
Comments:	Not reported		

A2 NW 1/8-1/4 1147 ft. Higher — **3200 E. EIGHT MILE ROAD**, **STOCKTON, CA 95201** — CHMIRS S100217704; N/A

Site 2 of 2 in cluster A

CHMIRS:

OES Control Number:	9907872	DOT ID:	1017
DOT Hazard Class:	Gases		
Chemical Name:	CHLORINE		
Extent of Release:	Not reported		
CAS Number:	7782505	Quantity Released:	5
Environmental Contamination:	Air	Property Use:	Manufacturing
Incident Date:	12-SEP-99	Date Completed:	12-SEP-99
Time Completed :		1030	
Physical State Stored :		Liquid	
Physical State Released :		Liquid	

(Continued) **S109217704**

Release Unit :	Lbs.
Container Description :	2
Container Type :	03
Container Material :	Iron Steel and Other Iron Alloys
Level Of Container :	10
Container Capacity :	250
Container Capacity Units (code) :	1
Extent Of Release (code) :	5
Agency Id Number :	39807
Agency Incident Number :	99999
OES Incident Number :	8907872
Time Notified :	930
Surrounding Area :	850
Estimated Temperature :	80
Property Management :	P
More Than Two Substances Involved? :	Not reported
Special Studies 1 :	Not reported
Special Studies 2 :	Not reported
Special Studies 3 :	Not reported
Special Studies 4 :	Not reported
Special Studies 5 :	Not reported
Special Studies 6 :	Not reported
Responding Agency Personel # Of Injuries :	0
Responding Agency Personel # Of Fatalities :	0
Resp Agency Personel # Of Decontaminated :	0
Others Number Of Decontaminated :	3
Others Number Of Injuries :	3
Others Number Of Fatalities :	0
Vehicle Make/year :	Not reported
Vehicle License Number :	Not reported
Vehicle State :	Not reported
Vehicle Id Number :	Not reported
CA/DOT/PUC/CC Number :	Not reported
Company Name :	Not reported
Reporting Officer Name/ID :	DAVID CARAVEO
Report Date :	13-SEP-89
Comments :	Not reported
Facility Telephone Number :	209 944-2118

---

3 **EIGHT MILE ROAD RANCH** **HIST UST** **U001604295**
NE **3749 E EIGHT MILE RD** **N/A**
1/8-1/4 **LODI, CA 95240**
1173 ft.
Higher

UST HIST:

Facility ID:	56479		
Tank Num:	1	Container Num:	1
Tank Capacity:	2600	Year Installed:	1977
Tank Used for:	PRODUCT		
Type of Fuel:	Not Reported	Tank Construction:	Not reported
Leak Detection:	None		
Contact Name:	Not reported	Telephone:	(209) 944-5151
Total Tanks:	1	Region:	STATE
Facility Type:	2	Other Type:	FARM

Map ID / Direction / Distance / Distance (ft.) / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number
B4 ENE 1/4-1/2 2068 ft. Higher	**STOCKTON/LODI KOA CAMP GR 2851 EIGHT MI LODI, CA 95240 Site 1 of 2 in cluster B**	Cortese	**S102438128 N/A**

CORTESE:
Reg Id: 390871
Region: CORTESE
Reg By: Leaking Underground Storage Tanks

B5 ENE 1/4-1/2 2068 ft. Higher	**STOCKTON/LODI KOA CAMP GROUND 2851 EIGHT MILE RD LODI, CA 95240 Site 2 of 2 in cluster B**	LUST	**S104493546 N/A**

State LUST:

Cross Street:	PEARSON RD		
City Leaked:	Not reported		
Case Number	390871		
Reg Board:	Central Valley Region		
Chemical:	Gasoline		
Lead Agency:	Local Agency		
Local Agency :	39000		
Case Type:	Soil only		
Status:	Signed off, remedial action completed or deemed unnecessary		
County:	San Joaquin		
Review Date:	12/20/1994	Confirm Leak:	12/20/1994
Workplan:	Not reported	Prelim Assess:	Not reported
Pollution Char:	Not reported	Remed Plan:	Not reported
Remed Action:	Not reported	Monitoring:	Not reported
Close Date:	6/28/1996		
Release Date:	12/21/1994		
Cleanup Fund Id :	Not reported		
Discover Date :	12/20/1994		
Enforcement Dt :	1/1/1995		
Enf Type:	None Taken		
Enter Date :	1/5/1995		
Funding:	Not reported		
Staff Initials:	JER		
How Discovered:	Tank Closure		
How Stopped:	Close Tank		
Interim :	Not reported		
Leak Cause:	Unknown		
Leak Source:	Piping		
MTBE Date :	Not reported		
Max MTBE GW :	Not reported		
MTBE Tested:	Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.		
Priority:	Low priority. Priority ranking can change over time.		
Local Case # :	Not reported		
Beneficial:	Not reported		
Staff :	WMH		
GW Qualities :	Not reported		
Max MTBE Soil :	Not reported		
Soil Qualities :	Not reported		
Hydr Basin #:	Not reported		
Operator :	Not reported		
Oversight Prgm:	Local Implementing Agency UST (includes non-LOP cases within LOP jurisdiction)		
Oversight Prgm :	LIA		

STOCKTON/LODI KOA CAMP GROUND (Continued) **S104403548**

Review Date : 5/2/1996
Stop Date : 12/20/1994
Work Suspended N
Responsible PartyEVANSSON, WILLIAM
RP Address: 2851 EIGHT MILE RD, LODI, CA 95240
Global Id: T0607700659
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 0
Mtbe Fuel: 1
Water System Name: TRI VALLEY GROWERS
Well Name: WELL 01
Distance To Lust: 3503.423084379315510523718 6823
Waste Discharge Global ID: W0607701084
Waste Disch Assigned Name: 02M/08E-01J02 M

LUST Region 5:
Substance: GASOLINE
Case Type: Soil only
Program: Local Implementing Activity - County Run Activity
Staff Initials: WMH Case Number: 390871
Status: Signed off, remedial action completed or deemed unnecessary
MTBE Code: Not reported

---

6 WNW 1/2-1 4154 ft. Higher **PACIFIC BELL**
2300 EIGHT MILE RD
STOCKTON, CA 95205

LUST Cortese **S104403565 N/A**

State LUST:
Cross Street: Not reported
Qty Leaked: Not reported
Case Number 390916
Reg Board: Central Valley Region
Chemical: Gasoline
Lead Agency: Local Agency
Local Agency : 39000
Case Type: Soil only
Status: Signed off, remedial action completed or deemed unnecessary
County: San Joaquin
Abate Method: Excavate and Dispose - remove contaminated soil and dispose to approved site
Review Date: 5/2/1996 Confirm Leak: 5/2/1996
Workplan: Not reported Prelim Assess: Not reported
Pollution Char: Not reported Remed Plan: Not reported
Remed Action: Not reported Monitoring: Not reported
Close Date: 11/27/1996
Release Date: 5/2/1996
Cleanup Fund Id : Not reported
Discover Date : 6/2/1996
Enforcement Dt : 1/1/1965
Enf Type: None Taken
Enter Date : 8/10/1996
Funding: Not reported
Staff Initials: MAR
How Discovered: Tank Closure
How Stopped: Close Tank
Interim : Yes

PACIFIC BELL (Continued) **S104403565**

Leak Cause: Unknown
Leak Source: Unknown
MTBE Date : Not reported
Max MTBE GW : Not reported
MTBE Tested: Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
Priority: Medium priority
Local Case # : Not reported
Beneficial: Not reported
Staff : WMH
GW Qualifies : Not reported
Max MTBE Soil : Not reported
Soil Qualifies : Not reported
Hydr Basin #: Not reported
Operator : Not reported
Oversight Prgm: Local Oversight Program UST
Oversight Prgm : LOP
Review Date : 12/2/1996
Stop Date : Not reported
Work Suspended N
Responsible PartyPACIFIC BELL
RP Address: PO BOX 5095, RM1N291, SAN RAMON, CA 94583
Global Id: T0607700738
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 0
Mtbe Fuel: 1
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 2073.364672703636329418611596 6
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

LUST Region 5:
Substance: GASOLINE
Case Type: Soil only
Program: Local Oversite Program - SWB Sponsored Program
Staff Initials: WMH Case Number: 380918
Status: Signed off, remedial action completed or deemed unnecessary
MTBE Code: Not reported

CORTESE:
Reg Id: 380918
Region: CORTESE
Reg By: Leaking Underground Storage Tanks

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
LINDEN	U001000857	ROSA RANCH	EIGHT MILE RD. - 1 MI. E. OF T	95212	HIST UST
LODI	S101272896	LODI GROUNDWATER STE	CITY OF LODI	95240	Cal-Sites, Corteva, AWP
LODI	1003879922	PG&E GAS PLANT LODI	SE COR S SACTO & SPRUCE STS	95240	CERC-NFRAP
STOCKTON	S104941467	LINCOLN VILLAGE SHOPPING CENTER	BETWEEN PACIFIC AVENUE AND GET		CA SLIC
STOCKTON	S104225653	DURANGO TIRE (CHP SITE)	2749 EL DORADO STREET		SWRLF
STOCKTON	S105093101	HERMAN & HELENS MARINA	15135 EIGHT MILE ROAD		CA SLIC
STOCKTON	S102790819	BOYETT PETROLEUM	MARIPOSA RD BETWEEN SACKTONE		HAZNET
STOCKTON	S103945669	DEFENSE REUTILIZATION & MARKETING	ROACH AND READY		SWRLF

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Elapsed ASTM days: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL ASTM STANDARD RECORDS

NPL: National Priority List
Source: EPA
Telephone: N/A
National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/22/02
Date Made Active at EDR: 06/21/02
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 05/08/02
Elapsed ASTM days: 46
Date of Last EDR Contact: 05/06/02

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 6
Telephone: 214-655-6659

EPA Region 8
Telephone: 303-312-6774

Proposed NPL: Proposed National Priority List Sites
Source: EPA
Telephone: N/A

Date of Government Version: 02/26/02
Date Made Active at EDR: 06/21/02
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 05/06/02
Elapsed ASTM days: 46
Date of Last EDR Contact: 05/06/02

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
Source: EPA
Telephone: 703-413-0223
CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 02/12/02
Date Made Active at EDR: 06/03/02
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 03/25/02
Elapsed ASTM days: 70
Date of Last EDR Contact: 06/24/02

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned
Source: EPA
Telephone: 703-413-0223
As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 02/14/02
Date Made Active at EDR: 06/03/02
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 03/25/02
Elapsed ASTM days: 70
Date of Last EDR Contact: 06/24/02

CORRACTS: Corrective Action Report
Source: EPA
Telephone: 800-424-9346
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 05/02/02
Date Made Active at EDR: 07/15/02
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 05/06/02
Elapsed ASTM days: 70
Date of Last EDR Contact: 05/10/02

RCRIS: Resource Conservation and Recovery Information System
Source: EPA/NTIS
Telephone: 800-424-9346
Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

Date of Government Version: 06/10/02
Date Made Active at EDR: 07/15/02
Database Release Frequency: Varies

Date of Data Arrival at EDR: 06/21/02
Elapsed ASTM days: 25
Date of Last EDR Contact: 06/20/02

ERNS: Emergency Response Notification System
Source: EPA/NTIS
Telephone: 202-260-2342
Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/01
Date Made Active at EDR: 07/15/02
Database Release Frequency: Varies

Date of Data Arrival at EDR: 07/02/02
Elapsed ASTM days: 13
Date of Last EDR Contact: 04/29/02

FEDERAL ASTM SUPPLEMENTAL RECORDS

BRS: Biennial Reporting System
Source: EPA/NTIS
Telephone: 800-424-9346
The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/99
Database Release Frequency: Biennially

Date of Last EDR Contact: 06/17/02
Date of Next Scheduled EDR Contact: 08/18/02

CONSENT: Superfund (CERCLA) Consent Decrees
Source: EPA Regional Offices
Telephone: Varies
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: N/A
Database Release Frequency: Varies

Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

ROD: Records Of Decision
Source: EPA
Telephone: 703-416-0223
Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 09/30/01
Database Release Frequency: Annually
Date of Last EDR Contact: 07/09/02
Date of Next Scheduled EDR Contact: 10/07/02

DELISTED NPL: National Priority List Deletions
Source: EPA
Telephone: N/A
The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/22/02
Database Release Frequency: Quarterly
Date of Last EDR Contact: 05/06/02
Date of Next Scheduled EDR Contact: 08/05/02

FINDS: Facility Index System/Facility Identification Initiative Program Summary Report
Source: EPA
Telephone: N/A
Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more data#. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 03/21/02
Database Release Frequency: Quarterly
Date of Last EDR Contact: 07/08/02
Date of Next Scheduled EDR Contact: 10/07/02

HMIRS: Hazardous Materials Information Reporting System
Source: U.S. Department of Transportation
Telephone: 202-366-4555
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/31/01
Database Release Frequency: Annually
Date of Last EDR Contact: 04/22/02
Date of Next Scheduled EDR Contact: 07/22/02

MLTS: Material Licensing Tracking System
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/12/02
Database Release Frequency: Quarterly
Date of Last EDR Contact: 07/08/02
Date of Next Scheduled EDR Contact: 10/07/02

MINES: Mines Master Index File
Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959

Date of Government Version: 06/05/02
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 07/01/02
Date of Next Scheduled EDR Contact: 08/30/02

NPL LIENS: Federal Superfund Liens
Source: EPA
Telephone: 202-564-4267
Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 06/28/02
Date of Next Scheduled EDR Contact: 08/26/02

PADS: PCB Activity Database System
Source: EPA
Telephone: 202-564-3887
PCB Activity Database. PADS identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 03/01/02
Database Release Frequency: Annually

Date of Last EDR Contact: 05/14/02
Date of Next Scheduled EDR Contact: 08/12/02

RAATS: RCRA Administrative Action Tracking System
Source: EPA
Telephone: 202-564-4104
RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/95
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 08/10/02
Date of Next Scheduled EDR Contact: 09/09/02

TRIS: Toxic Chemical Release Inventory System
Source: EPA
Telephone: 202-260-1531
Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/99
Database Release Frequency: Annually

Date of Last EDR Contact: 06/24/02
Date of Next Scheduled EDR Contact: 09/22/02

TSCA: Toxic Substances Control Act
Source: EPA
Telephone: 202-260-5521
Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/98
Database Release Frequency: Every 4 Years

Date of Last EDR Contact: 08/10/02
Date of Next Scheduled EDR Contact: 09/09/02

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA
Telephone: 202-564-2501

Date of Government Version: 01/14/02
Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/03/02
Date of Next Scheduled EDR Contact: 09/23/02

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-564-2501
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/25/02
Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/03/02
Date of Next Scheduled EDR Contact: 09/23/02

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STATE OF CALIFORNIA ASTM STANDARD RECORDS

AWP: Annual Workplan Sites
Source: California Environmental Protection Agency
Telephone: 916-323-3400
Known Hazardous Waste Sites. California DTSC's Annual Workplan (AWP), formerly SEP, identifies known hazardous substance sites targeted for cleanup.

Date of Government Version: 11/06/00
Date Made Active at EDR: 03/02/01
Database Release Frequency: Annually
Date of Data Arrival at EDR: 01/31/01
Elapsed ASTM days: 30
Date of Last EDR Contact: 07/08/02

CAL-SITES: Calsites Database
Source: Department of Toxic Substance Control
Telephone: 916-323-3400
The Calsites database contains potential or confirmed hazardous substance release properties. In 1998, California EPA reevaluated and significantly reduced the number of sites in the Calsites database.

Date of Government Version: 10/01/00
Date Made Active at EDR: 11/22/00
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 10/20/00
Elapsed ASTM days: 23
Date of Last EDR Contact: 07/08/02

CHMIRS: California Hazardous Material Incident Report System
Source: Office of Emergency Services
Telephone: 916-845-8400
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/94
Date Made Active at EDR: 04/24/95
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 03/13/95
Elapsed ASTM days: 42
Date of Last EDR Contact: 05/28/02

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-9100
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 04/01/01
Date Made Active at EDR: 07/26/01
Database Release Frequency: Varies
Date of Data Arrival at EDR: 05/29/01
Elapsed ASTM days: 58
Date of Last EDR Contact: 04/30/02

NOTIFY 65: Proposition 65 Records
Source: State Water Resources Control Board
Telephone: 916-449-5845
Proposition 65 Notification Records. NOTIFY 65 contains facility notifications about any release which could impact drinking water and thereby expose the public to a potential health risk.

Date of Government Version: 10/21/93
Date Made Active at EDR: 11/19/93
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 11/01/93
Elapsed ASTM days: 18
Date of Last EDR Contact: 04/22/02

TOXIC PITS: Toxic Pits Cleanup Act Sites
Source: State Water Resources Control Board
Telephone: 916-227-4364
Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/95
Date Made Active at EDR: 08/28/95
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 08/24/95
Elapsed ASTM days: 27
Date of Last EDR Contact: 05/06/02

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SWF/LF (SWIS): Solid Waste Information System
Source: Integrated Waste Management Board
Telephone: 916-341-6320
Active, Closed and Inactive Landfills. SWF/LF records typically contain an inventory of solid waste disposal facilities or landfills. These may be active or inactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 03/15/02
Date Made Active at EDR: 04/16/02
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 03/18/02
Elapsed ASTM days: 29
Date of Last EDR Contact: 06/17/02

WMUDS/SWAT: Waste Management Unit Database
Source: State Water Resources Control Board
Telephone: 916-227-4448
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/00
Date Made Active at EDR: 05/10/00
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 04/10/00
Elapsed ASTM days: 30
Date of Last EDR Contact: 06/10/02

LUST: Leaking Underground Storage Tank Information System
Source: State Water Resources Control Board
Telephone: 916-341-5740
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 01/17/02
Date Made Active at EDR: 02/12/02
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 01/21/02
Elapsed ASTM days: 22
Date of Last EDR Contact: 07/09/02

CA BOND EXP. PLAN: Bond Expenditure Plan
Source: Department of Health Services
Telephone: 916-255-2118
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/89
Date Made Active at EDR: 06/02/94
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 07/27/94
Elapsed ASTM days: 6
Date of Last EDR Contact: 05/31/94

CA UST:

UST: Active UST Facilities
Source: SWRCB
Telephone: 916-341-5700
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 01/17/02
Date Made Active at EDR: 02/12/02
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 01/21/02
Elapsed ASTM days: 22
Date of Last EDR Contact: 04/16/02

CA FID UST: Facility Inventory Database
Source: California Environmental Protection Agency
Telephone: 916-445-6532
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/31/94
Date Made Active at EDR: 09/29/95
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 09/05/95
Elapsed ASTM days: 24
Date of Last EDR Contact: 12/28/98

HIST UST: Hazardous Substance Storage Container Database
Source: State Water Resources Control Board
Telephone: 916-341-5700
The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/90
Date Made Active at EDR: 02/12/91
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 01/25/91
Elapsed ASTM days: 18
Date of Last EDR Contact: 07/26/01

STATE OF CALIFORNIA ASTM SUPPLEMENTAL RECORDS

AST: Aboveground Petroleum Storage Tank Facilities
Source: State Water Resources Control Board
Telephone: 916-227-4360
Registered Aboveground Storage Tanks.

Date of Government Version: 08/21/02
Database Release Frequency: Quarterly

Date of Last EDR Contact: 08/06/02
Date of Next Scheduled EDR Contact: 08/05/02

CLEANERS: Cleaner Facilities.
Source: Department of Toxic Substance Control
Telephone: 916-225-0873
A list of dryclean related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 03/18/02
Database Release Frequency: Annually

Date of Last EDR Contact: 07/08/02
Date of Next Scheduled EDR Contact: 10/07/02

CA WDS: Waste Discharge System
Source: State Water Resources Control Board
Telephone: 916-657-1571
Sites which have been issued waste discharge requirements.

Date of Government Version: 03/18/02
Database Release Frequency: Quarterly

Date of Last EDR Contact: 08/24/02
Date of Next Scheduled EDR Contact: 09/23/02

DEED: List of Deed Restrictions
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
The use of recorded land use restrictions is one of the methods the DTSC uses to protect the public from unsafe exposures to hazardous substances and wastes.

Date of Government Version: 04/25/02
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 07/08/02
Date of Next Scheduled EDR Contact: 10/07/02

HAZNET: Hazardous Waste Information System
Source: California Environmental Protection Agency
Telephone: 916-255-1136
Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/00
Database Release Frequency: Annually

Date of Last EDR Contact: 05/16/02
Date of Next Scheduled EDR Contact: 08/12/02

LOCAL RECORDS

ALAMEDA COUNTY:

Local Oversight Program Listing of UGT Cleanup Sites
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700

Date of Government Version: 07/01/01
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 05/01/02
Date of Next Scheduled EDR Contact: 07/29/02

Underground Tanks
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700

Date of Government Version: 12/01/00
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 05/01/02
Date of Next Scheduled EDR Contact: 07/29/02

CONTRA COSTA COUNTY:

Site List
Source: Contra Costa Health Services Department
Telephone: 925-646-2286
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 09/01/00
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 05/03/02
Date of Next Scheduled EDR Contact: 08/02/02

FRESNO COUNTY:

CUPA Resources List
Source: Dept. of Community Health
Telephone: 559-445-3271
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 04/01/02
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 04/30/02
Date of Next Scheduled EDR Contact: 08/12/02

KERN COUNTY:

Underground Storage Tank Sites & Tanks Listing
Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Kern County Sites and Tanks Listing.

Date of Government Version: 06/01/02
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/03/02
Date of Next Scheduled EDR Contact: 09/02/02

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LOS ANGELES COUNTY:

List of Solid Waste Facilities
Source: La County Department of Public Works
Telephone: 818-458-5185

Date of Government Version: 11/00/99 — Date of Last EDR Contact: 05/20/02
Database Release Frequency: Varies — Date of Next Scheduled EDR Contact: 08/19/02

City of El Segundo Underground Storage Tank
Source: City of El Segundo Fire Department
Telephone: 310-607-2230

Date of Government Version: 03/01/02 — Date of Last EDR Contact: 05/20/02
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 08/19/02

City of Long Beach Underground Storage Tank
Source: City of Long Beach Fire Department
Telephone: 562-570-2543

Date of Government Version: 10/01/99 — Date of Last EDR Contact: 05/30/02
Database Release Frequency: Annually — Date of Next Scheduled EDR Contact: 08/26/02

City of Torrance Underground Storage Tank
Source: City of Torrance Fire Department
Telephone: 310-618-2973

Date of Government Version: 04/01/02 — Date of Last EDR Contact: 05/20/02
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 08/19/02

City of Los Angeles Landfills
Source: Engineering & Construction Division
Telephone: 213-473-7869

Date of Government Version: 03/01/02 — Date of Last EDR Contact: 06/10/02
Database Release Frequency: Varies — Date of Next Scheduled EDR Contact: 09/16/02

HMS: Street Number List
Source: Department of Public Works
Telephone: 626-458-3517
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 01/31/02 — Date of Last EDR Contact: 05/20/02
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 08/19/02

Site Mitigation List
Source: Community Health Services
Telephone: 323-890-7806
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 02/28/02 — Date of Last EDR Contact: 05/20/02
Database Release Frequency: Annually — Date of Next Scheduled EDR Contact: 08/19/02

San Gabriel Valley Areas of Concern
Source: EPA Region 3
Telephone: 415-744-2407
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 12/31/98 — Date of Last EDR Contact: 05/29/03
Database Release Frequency: No Update Planned — Date of Next Scheduled EDR Contact: N/A

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

MARIN COUNTY:

Underground Storage Tank Sites
Source: Public Works Department Waste Management
Telephone: 415-499-6647
Currently permitted USTs in Marin County.

Date of Government Version: 03/06/02
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 05/06/02
Date of Next Scheduled EDR Contact: 08/05/02

NAPA COUNTY:

Sites With Reported Contamination
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 04/01/02
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 07/01/02
Date of Next Scheduled EDR Contact: 08/30/02

Closed and Operating Underground Storage Tank Sites
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 04/01/02
Database Release Frequency: Annually

Date of Last EDR Contact: 07/01/02
Date of Next Scheduled EDR Contact: 09/30/02

ORANGE COUNTY:

List of Underground Storage Tank Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 11/27/01
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/10/02
Date of Next Scheduled EDR Contact: 09/09/02

List of Underground Storage Tank Facilities
Source: Health Care Agency
Telephone: 714-834-3446
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 11/27/01
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/10/02
Date of Next Scheduled EDR Contact: 09/09/02

List of Industrial Site Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Petroleum and non-petroleum spills.

Date of Government Version: 10/24/00
Database Release Frequency: Annually

Date of Last EDR Contact: 06/10/02
Date of Next Scheduled EDR Contact: 09/09/02

PLACER COUNTY:

Master List of Facilities
Source: Placer County Health and Human Services
Telephone: 530-889-7312
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 01/31/02
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 06/24/02
Date of Next Scheduled EDR Contact: 09/23/02

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Source: Department of Public Health
Telephone: 909-358-5055
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 03/27/02
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/22/02
Date of Next Scheduled EDR Contact: 07/22/02

Underground Storage Tank Tank List
Source: Health Services Agency
Telephone: 909-358-5055

Date of Government Version: 03/01/02
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/22/02
Date of Next Scheduled EDR Contact: 07/22/02

SACRAMENTO COUNTY:

CS - Contaminated Sites
Source: Sacramento County Environmental Management
Telephone: 916-875-8406

Date of Government Version: 01/15/02
Database Release Frequency: Quarterly

Date of Last EDR Contact: 05/06/02
Date of Next Scheduled EDR Contact: 08/05/02

ML - Regulatory Compliance Master List
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 01/15/02
Database Release Frequency: Quarterly

Date of Last EDR Contact: 05/06/02
Date of Next Scheduled EDR Contact: 08/05/02

SAN BERNARDINO COUNTY:

Hazardous Material Permits
Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 04/03/02
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/10/02
Date of Next Scheduled EDR Contact: 09/09/02

SAN DIEGO COUNTY:

Solid Waste Facilities
Source: Department of Health Services
Telephone: 619-338-2209
San Diego County Solid Waste Facilities.

Date of Government Version: 08/01/00 — Date of Last EDR Contact: 06/29/02
Database Release Frequency: Varies — Date of Next Scheduled EDR Contact: 08/26/02

Hazardous Materials Management Division Database
Source: Hazardous Materials Management Division
Telephone: 619-338-2268
The database includes: HE58 - This report contains the business name, site address, business phone number, establishment "H" permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 03/31/02 — Date of Last EDR Contact: 07/08/02
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 10/07/02

SAN FRANCISCO COUNTY:

Local Oversite Facilities
Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920

Date of Government Version: 03/01/02 — Date of Last EDR Contact: 06/10/02
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 09/09/02

Underground Storage Tank Information
Source: Department of Public Health
Telephone: 415-252-3920

Date of Government Version: 03/01/02 — Date of Last EDR Contact: 06/10/02
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 09/09/02

SAN MATEO COUNTY:

Fuel Leak List
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921

Date of Government Version: 04/04/02 — Date of Last EDR Contact: 04/29/02
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 07/29/02

Business Inventory
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 05/01/02 — Date of Last EDR Contact: 04/15/02
Database Release Frequency: Annually — Date of Next Scheduled EDR Contact: 07/15/02

SANTA CLARA COUNTY:

Fuel Leak Site Activity Report
Source: Santa Clara Valley Water District
Telephone: 408-265-2600

Date of Government Version: 01/03/02
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 07/01/02
Date of Next Scheduled EDR Contact: 09/30/02

Hazardous Material Facilities
Source: City of San Jose Fire Department
Telephone: 408-277-4659

Date of Government Version: 01/03/02
Database Release Frequency: Annually

Date of Last EDR Contact: 06/10/02
Date of Next Scheduled EDR Contact: 09/09/02

SOLANO COUNTY:

Leaking Underground Storage Tanks
Source: Solano County Department of Environmental Management
Telephone: 707-421-6770

Date of Government Version: 01/02/02
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/18/02
Date of Next Scheduled EDR Contact: 09/16/02

Underground Storage Tanks
Source: Solano County Department of Environmental Management
Telephone: 707-421-6770

Date of Government Version: 01/02/02
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/18/02
Date of Next Scheduled EDR Contact: 09/16/02

SONOMA COUNTY:

Leaking Underground Storage Tank Sites
Source: Department of Health Services
Telephone: 707-568-6565

Date of Government Version: 11/29/01
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/29/02
Date of Next Scheduled EDR Contact: 07/29/02

SUTTER COUNTY:

Underground Storage Tanks
Source: Sutter County Department of Agriculture
Telephone: 530-822-7500

Date of Government Version: 07/01/01
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 07/08/02
Date of Next Scheduled EDR Contact: 10/07/02

VENTURA COUNTY:

Inventory of Illegal Abandoned and Inactive Sites
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 04/02/01
Database Release Frequency: Annually

Date of Last EDR Contact: 05/29/02
Date of Next Scheduled EDR Contact: 08/26/02

Listing of Underground Tank Cleanup Sites
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 03/12/02
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/18/02
Date of Next Scheduled EDR Contact: 09/16/02

Underground Tank Closed Sites List
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 05/24/01
Database Release Frequency: Quarterly
Date of Last EDR Contact: 04/15/02
Date of Next Scheduled EDR Contact: 07/15/02

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 02/15/02
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/18/02
Date of Next Scheduled EDR Contact: 09/16/02

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Source: Yolo County Department of Health
Telephone: 530-666-8646

Date of Government Version: 08/01/02
Database Release Frequency: Annually
Date of Last EDR Contact: 04/22/02
Date of Next Scheduled EDR Contact: 07/22/02

California Regional Water Quality Control Board (RWQCB) LUST Records

LUST REG 1: Active Toxic Site Investigation
Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-576-2220
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/01
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 05/28/02
Date of Next Scheduled EDR Contact: 08/26/02

LUST REG 2: Fuel Leak List
Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457

Date of Government Version: 12/01/01
Database Release Frequency: Quarterly
Date of Last EDR Contact: 04/16/02
Date of Next Scheduled EDR Contact: 07/15/02

LUST REG 3: Leaking Underground Storage Tank Database
Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147

Date of Government Version: 05/22/02
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/20/02
Date of Next Scheduled EDR Contact: 08/19/02

LUST REG 4: Underground Storage Tank Leak List
Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-266-6600
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 08/09/01
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 07/01/02
Date of Next Scheduled EDR Contact: 09/30/02

LUST REG 5: Leaking Underground Storage Tank Database
Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-255-3126

Date of Government Version: 04/01/02
Database Release Frequency: Quarterly
Date of Last EDR Contact: 04/26/02
Date of Next Scheduled EDR Contact: 07/08/02

LUST REG 6L: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 916-542-5424
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 01/02/02
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 07/08/02
Date of Next Scheduled EDR Contact: 10/07/02

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-346-7491

Date of Government Version: 01/02/02
Database Release Frequency: Quarterly
Date of Last EDR Contact: 07/08/02
Date of Next Scheduled EDR Contact: 10/07/02

LUST REG 7: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-346-7491

Date of Government Version: 04/01/02
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 07/01/02
Date of Next Scheduled EDR Contact: 09/30/02

LUST REG 8: Leaking Underground Storage Tanks
Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4498
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 07/23/01
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 05/13/02
Date of Next Scheduled EDR Contact: 08/12/02

LUST REG 9: Leaking Underground Storage Tank Report
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/01
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 04/22/02
Date of Next Scheduled EDR Contact: 07/22/02

California Regional Water Quality Control Board (RWQCB) SLIC Records

SLIC REG 1: Active Toxic Site Investigations
Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220

Date of Government Version: 02/01/01
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 05/31/02
Date of Next Scheduled EDR Contact: 08/26/02

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-280-0457
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 12/01/01 — Date of Last EDR Contact: 04/16/02
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 07/15/02

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 05/22/02 — Date of Last EDR Contact: 06/20/02
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 08/19/02

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 09/13/01 — Date of Last EDR Contact: 06/01/02
Database Release Frequency: Quarterly — Date of Next Scheduled EDR Contact: 07/29/02

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-855-3075
Unregulated sites that impact groundwater or have the potential to impact groundwater.

Date of Government Version: 03/31/02 — Date of Last EDR Contact: 07/08/02
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 10/07/02

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583

Date of Government Version: 07/19/01 — Date of Last EDR Contact: 07/08/02
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 10/07/02

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-3298

Date of Government Version: 07/31/01 — Date of Last EDR Contact: 07/08/02
Database Release Frequency: Semi-Annually — Date of Next Scheduled EDR Contact: 10/07/02

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980

Date of Government Version: 03/01/02 — Date of Last EDR Contact: 06/03/02
Database Release Frequency: Annually — Date of Next Scheduled EDR Contact: 09/02/02

EDR PROPRIETARY HISTORICAL DATABASES

Former Manufactured Gas (Coal Gas) Sites: The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. ©Copyright 1993 Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

Disclaimer Provided by Real Property Scan, Inc.

The information contained in this report has predominantly been obtained from publicly available sources produced by entities other than Real Property Scan. While reasonable steps have been taken to insure the accuracy of this report, Real Property Scan does not guarantee the accuracy of this report. Any liability on the part of Real Property Scan is strictly limited to a refund of the amount paid. No claim is made for the actual existence of toxins at any site. This report does not constitute a legal opinion.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines/Electrical Transmission Lines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines and electrical transmission lines.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

STREET AND ADDRESS INFORMATION

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GEOCHECK® - PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

98-ACRE PARCEL
EIGHT MILE ROAD
STOCKTON, CA 95212

TARGET PROPERTY COORDINATES

Latitude (North):	38.055401 - 38' 3' 19.4"
Longitude (West):	121.282700 - 121' 16' 57.7"
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	650670.1
UTM Y (Meters):	4213148.0

EDR's GeoCheck Physical Setting Source Addendum has been developed to assist the environmental professional with the collection of physical setting source information in accordance with ASTM 1527-00, Section 7.2.3. Section 7.2.3 requires that a current USGS 7.5 Minute Topographic Map (or equivalent, such as the USGS Digital Elevation Model) be reviewed. It also requires that one or more additional physical setting sources be sought when (1) conditions have been identified in which hazardous substances or petroleum products are likely to migrate to or from the property, and (2) more information than is provided in the current USGS 7.5 Minute Topographic Map (or equivalent) is generally obtained, pursuant to local good commercial or customary practice, to assess the impact of migration of recognized environmental conditions in connection with the property. Such additional physical setting sources generally include information about the topographic, hydrologic, hydrogeologic, and geologic characteristics of a site, and wells in the area.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata. EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

USGS TOPOGRAPHIC MAP ASSOCIATED WITH THIS SITE

Target Property: 2438121-A3 LODI SOUTH, CA
Source: USGS 7.5 min quad index

GENERAL TOPOGRAPHIC GRADIENT AT TARGET PROPERTY

Target Property: General S5W

Source: General Topographic Gradient has been determined from the USGS 1 Degree Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
SAN JOAQUIN, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property:	06029990295B / CBPP
Additional Panels in search area:	06029990285B / CBPP

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
LODI SOUTH	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Site-Specific Hydrogeological Data*:

Search Radius:	2.0 miles
Status:	Not found

AQUIFLOW®

Search Radius: 2.000 Miles.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occuring.

ROCK STRATIGRAPHIC UNIT

Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

* EDR AQUIFLOW proprietary hydrogeological data gathered by GEOCHECK, Alexandria, VA. Reproduced with permission. All rights reserved. All of the information and opinions presented are those of the cited EPA regulatory agency, which may or may not agree or concur with the opinions of Environmental Data Resources Corporation or its Geocheck Information System (GIS) Advisory Committee.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Component Name: CLEAR LAKE

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Not reported

Hydric Status: Soil meets the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: HIGH

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	13 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.20 Min: 0.06	Max: 8.40 Min: 6.10
2	13 inches	60 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.20 Min: 0.06	Max: 8.40 Min: 7.40

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: silty clay
clay loam
silty clay loam
fine sandy loam
silt loam
sandy loam

Surficial Soil Types: silty clay
clay loam
silty clay loam
fine sandy loam
silt loam
sandy loam

Shallow Soil Types: clay loam
indurated
silty clay loam

fine sandy loam
sandy clay loam

Deeper Soil Types: silty clay loam
cemented
clay loam
loam
stratified
weathered bedrock

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

According to ASTM E 1527-00, Section 7.2.2, "one or more additional state or local sources of environmental records may be checked, in the discretion of the environmental professional, to enhance and supplement federal and state sources... Factors to consider in determining which local or additional state records, if any, should be checked include (1) whether they are reasonably ascertainable, (2) whether they are sufficiently useful, accurate, and complete in light of the objective of the records review (see 7.1.1), and (3) whether they are obtained, pursuant to local, good commercial or customary practice." One of the record sources listed in Section 7.2.2 is water well information. Water well information can be used to assist the environmental professional in assessing sources that may impact groundwater flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

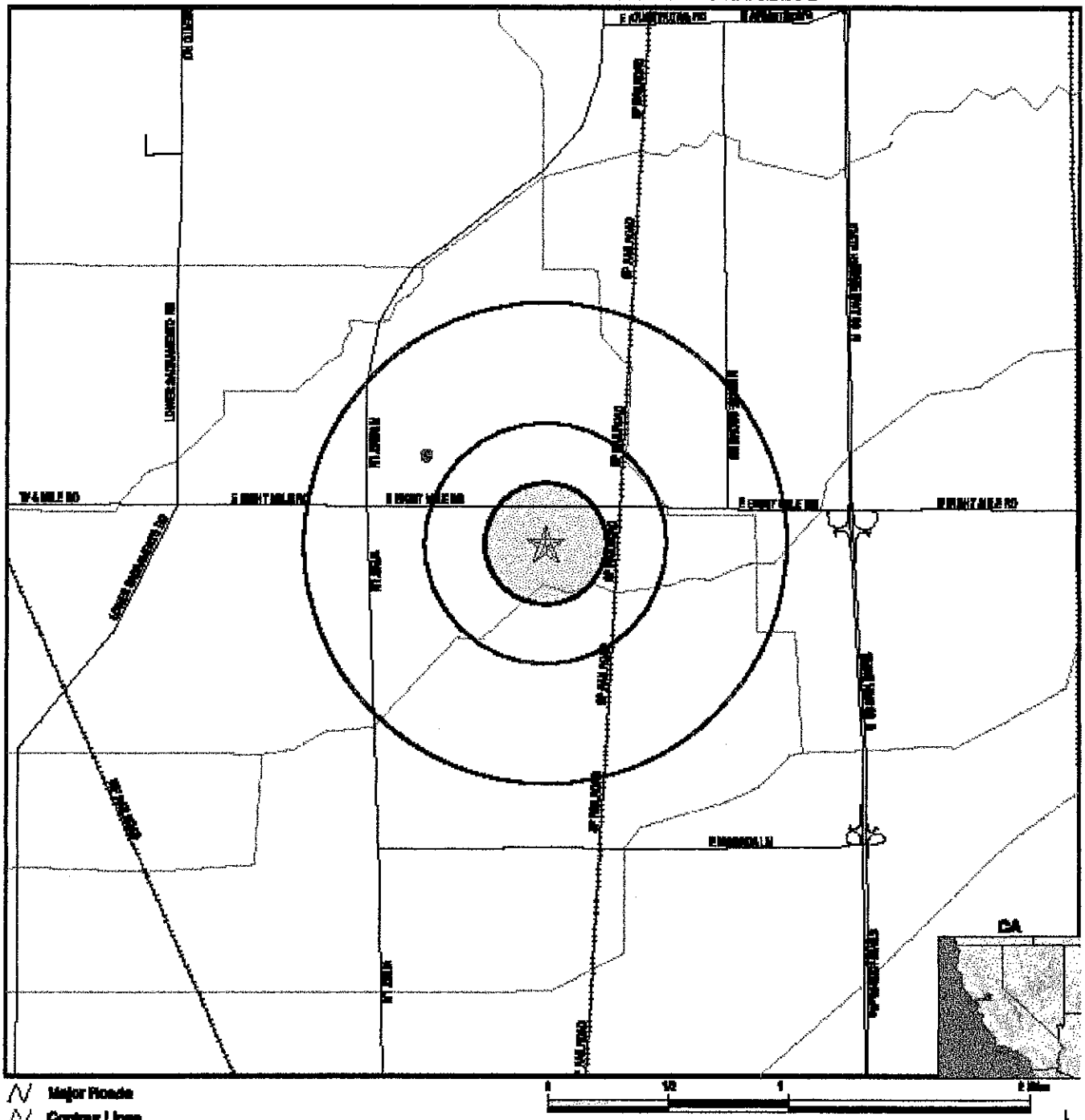
STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

STATE OIL/GAS WELL INFORMATION

DISTANCE FROM TP (Miles)	DISTANCE FROM TP (Miles)
1/2 - 1 Mile WNW	

PHYSICAL SETTING SOURCE MAP - 615732.1s



Major Roads
Contour Lines
Earthquake Fault Lines
Water Wells
Public Water Supply Wells
Groundwater Flow Direction
Indeterminate Groundwater Flow at Location
Groundwater Flow Varies at Location
Cluster of Multiple Icons
Earthquake epicenter, Richter 5 or greater
Closest Hydrogeological Data
Oil, gas or related wells

No contour lines were detected within this map area.

TARGET PROPERTY:	88-Acre Parcel	CUSTOMER:	Aqua Science Engineers Inc.
ADDRESS:	Eight Mile Road	CONTACT:	Rick Widebrook
CITY/STATE/ZIP:	Stockton CA 95212	INQUIRY #:	615732.1s
LAT/LONG:	38.0554 / 121.2827	DATE:	July 18, 2002 8:12 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Direction Distance	Database	EDR ID Number
WNW 1/2 - 1 Mile	**OIL_GAS**	**CA00002072**
WNW 1/2 - 1 Mile	**CA OIL/GAS**	**CA00002072**

Well Number:	S1	Status:	Plugged and abandoned-dry hole
API Number:	07700519	Operator:	BP Exploration U.S.A. Inc.
Latitude:	38.06076	Longitude:	-121.29069
Region:	6	Lease:	North Stockton Unit A
Section:	35	Township:	03N
Range:	06E	Map Number:	611
Base and Meridian:	Mount Diablo	Total Depth:	0212.09000
Spud Date:	6/29/1962	Abandonment Date:	7/28/1962

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for SAN JOAQUIN County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 95212

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	2.700 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the national Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

FEDERAL WATER WELLS

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-260-2805

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-260-2805

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: In November 1971 the United States Geological Survey (USGS) implemented a national water resource information tracking system. This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on more than 900,000 wells, springs, and other sources of groundwater.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STATE RECORDS

California Drinking Water Quality Database
Source: Department of Health Services
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

California Oil and Gas Well Locations for District 2, 3, 5 and 6
Source: Department of Conservation
Telephone: 916-323-1779

RADON

Area Radon Information
Source: EPA
Telephone: 303-236-1525
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 202-564-9370
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

Phase One Environmental Site Assessment

WESTERN STATES LAND LLC.

10666 N. West Lane
Stockton, San Joaquin County, California

APN # 092 020 03

ESS, Inc. Project Number 2004305-1
March, 2004

Phase One Environmental Site Assessment
WESTERN STATES LAND LLC.
10666 N. West Lane
Stockton, San Joaquin County, California
APN # 092 020 03

ESS, Inc. Project Number 2004305-1
March, 2004

INTRODUCTION

Purpose and Scope

Environmental Science Services, Inc. (ESS, Inc.) completed a Phase 1 Environmental Site Assessment for the subject property listed as Assessors Parcel Number 092-020-03. The purpose of this inspection was to evaluate the property for evidence of potential soil and ground water contamination resulting from current and/or former site uses or activities. Mr. Guy Tomlinson authorized our work on February 25, 2004. This report has been prepared in accordance with the American Society of Testing and Materials (ASTM) *Standard E 1527-00 for Environmental Assessments*. Our scope of our work included the following:

1. A field reconnaissance of the subject property to look for visual evidence of surface and potential subsurface sources of contamination

2. A site inspection performed in the immediate vicinity of the property to identify businesses that may use, produce or store hazardous materials and/or generate hazardous waste

3. Personal and telephone interview with representative of various regulatory agencies and persons familiar with site history and current operations

4. Examination of aerial photographs of the property dating back to 1957, as well as review of historic USGS topographic maps, archived building records and/or Sanborn Map coverage of the property (as available), in order to develop a reasonable continuous minimum 50-year site history as required by the ASTM standard.

5. A literature-based discussion of the likelihood for radon to be problematic at the properties

6. An inquiry with the San Joaquin County Agricultural Commissioner's Office in regards to current and past pesticide and herbicide uses.

7. An evaluation of local and regional geological and groundwater conditions, including historical depths and flow direction

8. A discussion of potable water, wastewater and stormwater provisions for the properties

9. A review of federal, state and county regulatory agency lists indicating any known instances of hazardous materials contamination and registered underground and aboveground storage tanks (USTs/ASTs) on or near the properties.

10. Color photography of the properties.

Laboratory testing for hazardous materials in the soil and ground water beneath the properties was not a part of the scope of this assessment. Sampling for asbestos and lead-based paint was not a part of the scope of this investigation.

FINDINGS

Site Description

The subject property consists of one parcel of land APN # 092-020-03. The property currently exists as undeveloped land. The subject property is generally located South of the town of Lodi, North of Stockton, CA.

ESS, Inc. personnel completed the field investigation of the subject properties on March 8, 2004. As can be seen by the color photographs the subject property consists of undeveloped land. No crops or structures were identified during this inspection on the subject property.

We observed no stained or odoriferous soils on the property, nor did we observe any other hazmat-related items of concern such as steam cleaning equipment or an agricultural equipment staging or maintenance area. Additionally, the property appears relatively free of debris and we observed no unusual odors or stains on the subject property during our site visit.

No utility-owned pole-mounted electrical lines or transformers, high-voltage, tower-mounted electrical transmission lines, concrete pad-mounted electrical transformers or capacitors were observed on the subject property. One pad mounted transformer was observed on the property to the north. No staining was observed.

Site Inspection

The subject property is located within a predominantly agricultural area. Agricultural properties completely surround the subject property. West Lane bounds the west side of the subject property. A drainage ditch runs parallel to West Lane and the subject property. A Southern Pacific Railroad Spur is 1/8 mile to the west. An abandoned cannery exists beyond the railroad.

Site History

Site Agricultural History

ESS, Inc. personnel requested files from the San Joaquin County Agricultural Department in regards to the subject property. Per file review, no crops have been produced on the property in the past two years. Any pesticides and herbicides that may have been applied to the property or adjacent properties over the past two years would not have an adverse affect on the subject property.

Agricultural chemicals used today typically do not persist in site soils for more than one year when properly mixed and applied. As such, the modern chemicals are not usually a concern in an environmental site assessment if used and applied properly. We observed no obvious surficial evidence of chemical misuse during our field reconnaissance. If pesticide or herbicide use occurred prior to 2002, these would not have an adverse effect on the property due to their soil-half life. The soil half-life is a measure of the persistence of a pesticide in soil. Pesticides can be categorized on the basis of their half-life as non-persistent, degrading to half the original concentration in less than 30 days; moderately persistent, degrading to half the original concentration in 30 to 100 days; or persistent, taking longer than 100 days to degrade to half the original concentration.

Based on the pesticide and herbicide types, which may have been applied in the past, most can be classified as non-persistent. Agricultural chemicals used today typically do not persist in site soils for more than one year when properly mixed and applied. As such, the modern chemicals are not usually a concern in an environmental site assessment if used and applied properly. We observed no obvious surficial evidence of chemical misuse during our field reconnaissance.

Business Directions

Review of historical business directories did not indicate any businesses located on the subject property.

Sanborn Maps

We reviewed Sanborn Maps with coverage of the subject property area through Environmental Data Resources (EDR). Sanborn Maps are detailed drawings of site development, and were typically used by fire insurance companies to determine site fire insurability. No Sanborn Map coverage of the subject properties was available.

Topographic Maps Review

We reviewed historic U.S. Geologic Survey (USGS) topographic maps with coverage of the subject property and adjacent land areas. Maps dated 1947, 1953, 1968 and 1976 were available for our review; the maps are each discussed below. In summary, the review topographic maps reveal no noticeable changes on the subject property during the past 94 years.

1947 Map

The property is located South of the town of Lodi. Contour lines on the property indicate that the property is at an elevation of approximately 25 feet mean sea level. No buildings are depicted on the. property. Bear Creek is depicted to the West.

1955, 1968 and 1976 Maps

The subject property remained relatively unchanged from 1947. No noteworthy items were identified. Development in the area has been slow. Improvements to West Lane were noted.

In summary, each of the reviewed topographic maps reveals that the subject property is located in a relatively flat area of San Joaquin County. No evidence was observed on the topographic maps to suggest that the subject property were disturbed by human activities tycially mapped by the USGS, such as the following: quarrying; installation or removal of pits ponds or lagoons; occurrences of dredging or subsurface or surface mining; or, deposition of historically places, *USGS topographically mappable* quantities of imported fill materials. The maps also reveal that the subject property has a surface elevation of approximately +/- 25 feet mean sea level (MSL).

Aerial Photographic Review

ESS, Inc. obtained historic aerial photographs of the subject properties and general vicinity from Environmental Data Resources. Inc. (EDR). Photographs covering the years 1957, 1970, 1982 and 1993 were available for review; the results of our photographic review are discussed below by years.

1957 Air Photos
(Scale: 1"= 555')

The subject property and surrounding properties exist as agricultural fields.

1970 Air Photos
(Scale: 1"= 666')

The subject property remains unchanged from the 1957 photo.

1982 Air Photos
(Scale: 1"= 690')

This subject property looks much the same as it did in 1970. A few structures appear to the North. A commercial installation currently identified as SBC yard now exists to the Northeast.

1993 Air Photos
(Scale: 1"= 666')

This subject property appears unchanged from the 1982 photo. The photo also remains relatively the same as the property and surrounding properties exists today.

Hydrogeologic and Soil Conditions

Decisions affecting the mode, occurrence, quality and use of groundwater within the area must be based on knowledge of the geologic and hydrogeologic aspects of the study area and surrounding region.

The geology as it pertains to groundwater can be interpreted by examining the physiographic setting, geologic history, and the nature and water-bearing characteristics of the various geologic formations. Hydrogeology refers to such topics as the occurrence, movement, and recharge of groundwater. Each of these topics are discussed below.

The site is located within a long, narrow basin filled with as much as 13,000 vertical meters of Cretaceous, Tertiary and Quaternary marine and continental sediments. Shallow subsurface deposits in the valley generally consist of a heterogeneous mixture of clay, silt, sand, and gravel. The site is underlain by Quaternary alluvium named the Riverbank Formation and is composed of poorly sorted stream channel and flood plain deposits which include clay, silt, and sand layers with conglomerate lenses.

The subject property is located approximately 25 feet above sea mean level. The surrounding topography in the area is typically flat. This investigation did not conduct soil and water sampling via borings as in a Phase II site assessment, however, based on the San Joaquin County Flood Control Groundwater Map, dated spring 1998 and the United States Geological Survey 1401-a Groundwater Report and information obtained in recent reports of surrounding properties, the direction of groundwater flow is to the west/northwest with a depth of approximately 40 feet below ground surface.

Radon Potential

This discussion of the potential for radon exposure for the subject properties and vicinity is based on review of available scientific literature on the topic. Radon isotope-222 is a colorless, odorless, tasteless radioactive gas that is a natural decay product of uranium. Uranium and radon are present in varying amounts in rocks and soil, and radon is present in background concentrations in the atmosphere. Current evidence indicates that increased lung cancer risk is directly related to radon-decay products.

Radon potential of rocks and soils and indoor radon exposure levels in the United States are currently areas of intense research by governmental regulators as well as the geoscience and medical communities. At this time, the EPA has recommended an "action" level for indoor radon concentrations at or exceeding 4 pico-curies per liter of air (pCi/1).

The recently published *California Statewide Radon Survey Interim Results,* based on the EPA/State Department of Health Services State Radon Survey, predicts that only 3.% of homes in Sacramento County would exceed the EPA's recommended level of 4pCi/1. Additionally California ranks as the third lowest for percentage of homes exceeding 4 pCi/1 of the 33 states participating in the study.

Specific indoor radon information for the subject properties can only be obtained by testing the existing or future buildings on the property. EPA generically recommends that all owners test their homes and commercial buildings for radon. Site-specific geology, construction materials and methodologies, use characteristics of building occupants and the quality of construction can all affect indoor radon results. Based on the low percentage of homes predicted to exceed the EPA's recommended exposure level as described above the potential for radon concentrations exceeding 4pCi/1 at the subject property is estimated to be low.

Regional Groundwater

Groundwater elevations in the vicinity of the properties are estimated using depth-to-groundwater measurements as provided by EDR. Information provided by EDR and the Regional Water Quality Control Board estimate the depth to groundwater at +/-40 feet below ground surface.

Municipal Infrastructure

The subject property currently contains some natural means for stormwater runoff in the form of drainage swales and ditches. No local municipalities are present.

Agency Database Review

ESS, Inc. personnel has reviewed the following list regarding hazardous materials contamination on or near the subject properties that are prepared by the following agencies:

- United States Environmental Protection Agency (EPA)
- California Environmental Protection Agency (Cal-EPA)
- Cal-EPA Department of Toxic Substances Control (DTSC)
- Cal-EPA Office of Environmental Health Hazard Assessment (OEHHA)
- Cal-EPA Regional Water Quality Control Board (RWQCB)
- Cal-EPA Integrated Waste Management Board (CIWMB)
- California State Water Resources Control Board (SWRCB)
- California Department of Health Services (DHS)
- Cal-DHS Office of Drinking Water (ODW)
- California Division of Oil and Gas (DOG)
- Sacramento County Hazardous Materials Division

EDR Incorporated performed a search of the agency databases (EDR Radius Map with GeoCheck) using the ASTM search radii. In summary, EDR identified no confirmed, state or federal "Superfund" sites located on or within one mile of the subject property during review of the former DHS's *Bond Expenditure Plan*, the U.S. EPA's *National Priorities List* (*NPL* and the Cal-EPA's *Active Annual Workplan Sites* list. No potential federal Superfund sites were listed on or within one-half mile of the property during review of U.S. EPA's *Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)* database. One adjacent property, Pac Bell, is listed in EPA *Resource Conservation and Recovery Act (RCRA) Small Generators or Emergency Response Notification System (ERNS)* database. No RCRA *Treatment, Storage and Disposal (TSD)* facilities are located on or within one-half mile of the subject property.

EDR's search of various state and county databases that are shown using the ASTM-designated search radii revealed one know contaminated site within one-half mile of the property. One LUST site was identified within a half-mile radius of the subject property. This site does not appear to pose a threat to the subject property.

CONCLUSIONS

Our field reconnaissance and reviews of agency databases indicate no evidence of significant hazardous materials contamination on the surface of the subject property. We did not observe evidence of bulk storage or present usage of hazardous materials during our site visit. No adjacent properties appear to pose any adverse affect on the subject property. No state or federal "Superfund" sites were identified within a one-mile radius of the subject property. One LUST site was identified within a half-mile radius of the subject property. This site does not appear to pose a threat to the subject property. One Cortese site was identified within a ¼ mile radius. The well identified is on a site with known contamination. The site has had remedial plans in place and the case has since been closed.

Our field reconnaissance and review of agency records indicate no past use of pesticides in connection with the agricultural use of the property in the last two years. No evidence to warrant further investigation exists.

Our historic land use research dating back to the early 1950s, which included reviews of topographic maps, aerial photography and other historical archives, reveals that the subject property has been used for some production of various crops in the past. The surrounding areas have seen similar cultivation activities and uses. The subject property has no known history of having contained underground fuel tanks, sumps or oil/water separators.

We identified no known *regional* hazardous material impairments to groundwater quality beneath or within one-half mile of the subject property (One Cortese site was identified within a ¼ mile radius. The well identified is on a site with known contamination. The site has had remedial plans in place and the cases have since been closed). Based on this finding, the outcome of our regulatory agency database review, and the innocuous agricultural history of the property as described above, we do not believe that additional assessment of the subject property for hazardous material in ground water is necessary.

In summary, ESS, Inc. has performed this Phase 1 Environmental Site Assessment for Western States Land LLC in conformance with the scope and limitations of ASTM Standard Practice E 1527-00. This Assessment has revealed no evidence of Recognized Environmental Conditions in connection with the subject properties. Further sub-surface investigations do not appear to be warranted.

LIMITATIONS

The statement and conclusions in this report are based upon the scope of work described above and on observations made on the date of our site investigation, March 8, 2004. Our work was performed using a degree of skill consistent with that of competent environmental consulting firms performing similar work in the area, and we have attempted to obtain as much information regarding the property as possible, given what we consider to be a reasonable amount of research. Additional research or receipt of information regarding the property that was not disclosed or available to ESS, Inc. personnel during this assessment may result in revision of our conclusions.

The conclusion in this report should be re-evaluated if site conditions change. No recommendation is made as to the suitability of the property for any purpose. The results of our assessment do not preclude the possibility that material currently, or in the future defined as hazardous are present on the property, nor do the results of our work guarantee the potability of ground water beneath the property. This report is applicable only to the investigated properties and should not be used for any other properties not listed by the APN numbers in this report. No warranty is expressed or implied.

Sincerely,

Environmental Science Services, Inc.

CLASS 1 REGISTERED ENVIRONMENTAL ASSESSOR
CHRIS HINTZ
No. 07208
Expires 6/04
STATE OF CALIFORNIA

Prepared by:

Chris Hintz, SST, REA, CIE, CIAQI

REA # 1-07208

Reviewed by:

Shane Jones, CAC, REA, CIE, CIAQI

REA # 1-06912

CLASS 1 REGISTERED ENVIRONMENTAL ASSESSOR
SHANE J. JONES
No. 06912
Exp. 6-04
STATE OF CALIFORNIA

Sanborn Map

Environmental Data Resources, Inc.

"Linking Technology with Tradition"

Sanborn® Map Report

Ship To: Chris Hintz
Environmental Science
18826 N. Lower
Woodbridge, CA 95258

Customer Project: 2004305-1
1019797JIM 209-333-6157

Order Date: 2/26/2004 **Completion Date:** 2/27/2004
Inquiry #: 1136378.5s
P.O. #: NA
Site Name: 38 Acres
Address: 10666 N. West Lane
City/State: Stockton, CA 95212
Cross Streets: eight mile road

This document reports that the largest and most complete collection of Sanborn fire insurance maps has been reviewed based on client supplied information, and fire insurance maps depicting the target property at the specified address were not identified.

NO COVERAGE

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City Directory

The EDR-City Directory
Abstract

38 Acres
10666 N. West Lane
Stockton, CA 95212

March 03, 2004

Inquiry Number: 1136378-7

EDR® Environmental
Data Resources Inc

The Standard In Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06460

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802

Environmental Data Resources, Inc.

City Directory Abstract

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening tool designed to assist professionals in evaluating potential liability on a target property resulting from past activities. ASTM E 1527-00, Section 7.3 on Historical Use Information, identifies the prior use requirements for a Phase I environmental site assessment. The ASTM standard requires a review of *reasonably ascertainable standard historical sources. Reasonably ascertainable means information that is publicly available, obtainable from a source with reasonable time and cost constraints, and practically reviewable.*

To meet the prior use requirements of ASTM E 1527-00, Section 7.3.4, the following *standard historical sources* may be used: aerial photographs, fire insurance maps, property tax files, land title records (although these cannot be the sole historical source consulted), topographic maps, city directories, building department records, or zoning/land use records. ASTM E 1527-00 requires *"All obvious uses of the property shall be identified from the present, back to the property's obvious first developed use, or back to 1940, whichever is earlier. This task requires reviewing only as many of the standard historical sources as are necessary, and that are reasonably ascertainable and likely to be useful."* (ASTM E 1527-00, Section 7.3.2, page 12.)

EDR's City Directory Abstract includes a search and abstract of available city directory data.

City Directories
City directories have been published for cities and towns across the U.S. since the 1700s. Originally a list of residents, the city directory developed into a sophisticated tool for locating individuals and businesses in a particular urban or suburban area. Twentieth century directories are generally divided into three sections: a business index, a list of resident names and addresses, and a street index. With each address, the directory lists the name of the resident or, if a business is operated from this address, the name and type of business (if unclear from the name). While city directory coverage is comprehensive for major cities, it may be spotty for rural areas and small towns. ASTM E 1527-00 specifies that a *"review of city directories (standard historical sources) at less than approximately five year intervals is not required by this practice." (ASTM E 1527-00, Section 7.3.2.1, page 12.)*

NAICS (North American Industry Classification System) Codes
NAICS is a unique, all-new system for classifying business establishments. Adopted in 1997 to replace the prior Standard Industry Classification (SIC) system, it is the system used by the statistical agencies of the United States. It is the first economic classification system to be constructed based on a single economic concept. To learn more about the background, the development and difference between NAICS and SIC, visit the following Census website: http://www.census.gov/epcd/www/naicsdev.htm.

Please call EDR Nationwide Customer Service at
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with questions or comments about your report.
Thank you for your business!

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Environmental Data Resources, Inc.

Prior Use Report® Timeline

Target Property

Legend:

= Historical Topographic Map (**HT**)

= National Wetland Inventory Map (**WT**) *

= Flood Prone/FEMA Maps (**FP/FR**) *

= Aerial Photos Included (**P**) *

= Aerial Photos Available *

= Residential (**R**)

= Commercial or Industrial (**C**)

Superscript number corresponds to graph ID in text

**Displayed on timeline when aerial photos, flood prone, FEMA, wetland maps, or Aerial Research Summary are purchased.*

Target Property:	38 Acres	**Customer:**	Environmental Science Services
Address:	10666 N. West Lane	**Contact:**	Chris Hintz
City/State/Zip:	Stockton, CA 95212	**Inquiry #:**	1136378-7
		Date:	3/3/2004

4. SUMMARY

- *City Directories:*

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1960 through 2003. (These years are not necessarily inclusive.) A summary of the information obtained is provided in the text of this report.

Date EDR Searched Historical Sources:
City Directories Mar 03, 2004

Target Property:
10666 N. West Lane
Stockton, CA 95212

PUR ID *Year*	*Uses*	*NAICS*	*Source*
-- 1960	Address not Listed in Research Source	N/A	Polk City Directory
-- 1968	Address not Listed in Research Source	N/A	Polk City Directory
-- 1977	Address not Listed in Research Source	N/A	Polk City Directory
-- 1986	Address not Listed in Research Source	N/A	Polk City Directory
-- 1993	Address not Listed in Research Source	N/A	Polk City Directory
-- 2003	Address not Listed in Research Source	N/A	Polk City Directory

Adjoining Properties

SURROUNDING
Multiple Addresses
Stockton, CA 95212

PUR ID *Year*	*Uses*	*NAICS*	*Source*
1960	Address not Listed in Research Source	N/A	Polk City Directory
1968	Address not Listed in Research Source	N/A	Polk City Directory
1977	Address not Listed in Research Source	N/A	Polk City Directory
1986	Address not Listed in Research Source	N/A	Polk City Directory
1993	Address not Listed in Research Source	N/A	Polk City Directory
2003	Address not Listed in Research Source	N/A	Polk City Directory

Topographic Maps

The EDR-Historical Topographic Map Report

38 Acres
10666 N. West Lane
Stockton, CA 95212

March 01, 2004

Inquiry Number: 1136378-6

EDR® Environmental Data Resources Inc

The Standard In Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06460

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802

Environmental Data Resources, Inc.
Historical Topographic Map Report

Environmental Data Resources, Inc.'s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property, and its surrounding area, resulting from past activities. ASTM E 1527-00, Section 7.3 on Historical Use Information, identifies the prior use requirements for a Phase I environmental site assessment. The ASTM standard requires a review of *reasonably ascertainable standard historical sources. Reasonably ascertainable is defined as information that is publicly available, obtainable from a source with reasonable time and cost constraints, and practically reviewable.*

To meet the prior use requirements of ASTM E 1527-00, Section 7.3.4, the following *standard historical sources* may be used: aerial photographs, city directories, fire insurance maps, topographic maps, property tax files, land title records (although these cannot be the sole historical source consulted), building department records, or zoning/and use records. ASTM E 1527-00 requires *"All obvious uses of the property shall be identified from the present, back to the property's obvious first developed use, or back to 1940, whichever is earlier. This task requires reviewing only as many of the standard historical sources as are necessary, and that are reasonably ascertainable and likely to be useful."* (ASTM E 1527-00, Section 7.3.2 page 12.)

EDR's Historical Topographic Map Report includes a search of available public and private color historical topographic map collections.

Topographic Maps

A topographic map (topo) is a color coded line-and-symbol representation of natural and selected artificial features plotted to a scale. Topos show the shape, elevation, and development of the terrain in precise detail by using contour lines and color coded symbols. Many features are shown by lines that may be straight, curved, solid, dashed, dotted, or in any combination. The colors of the lines usually indicate similar classes of information. For example, topographic contours (brown); lakes, streams, irrigation ditches, etc. (blue); land grids and important roads (red); secondary roads and trails, railroads, boundaries, etc. (black); and features that have been updated using aerial photography, but not field verified, such as disturbed land areas (e.g., gravel pits) and newly developed water bodies (purple).

For more than a century, the USGS has been creating and revising topographic maps for the entire country at a variety of scales. There are about 60,000 U.S. Geological Survey (USGS) produced topo maps covering the United States. Each map covers a specific quadrangle (quad) defined as a four-sided area bounded by latitude and longitude. Historical topographic maps are a valuable historical resource for documenting the prior use of a property and its surrounding area, and due to their frequent availability can be particularly helpful when other standard historical sources (such as city directories, fire insurance maps, or aerial photographs) are not reasonably ascertainable.

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Lafayette Sch
Kingdon
Henderson Sch
Armstrong
Micke Grove
Live Oak Sch
Eightmile House
BENNETT
Elkhorn Sch
Castle
Davis Sch
Stockton Airport
Fivemile House
CAMPO DE LOS
WESTERN PACIFIC
DAVIS ROAD
LOWER SACRAMENTO ROAD
WOODBRIDGE
NILES AND SACRAMENTO
SOUTHERN PACIFIC
CHEROKEE LANE
Bear Creek
Calaveras River
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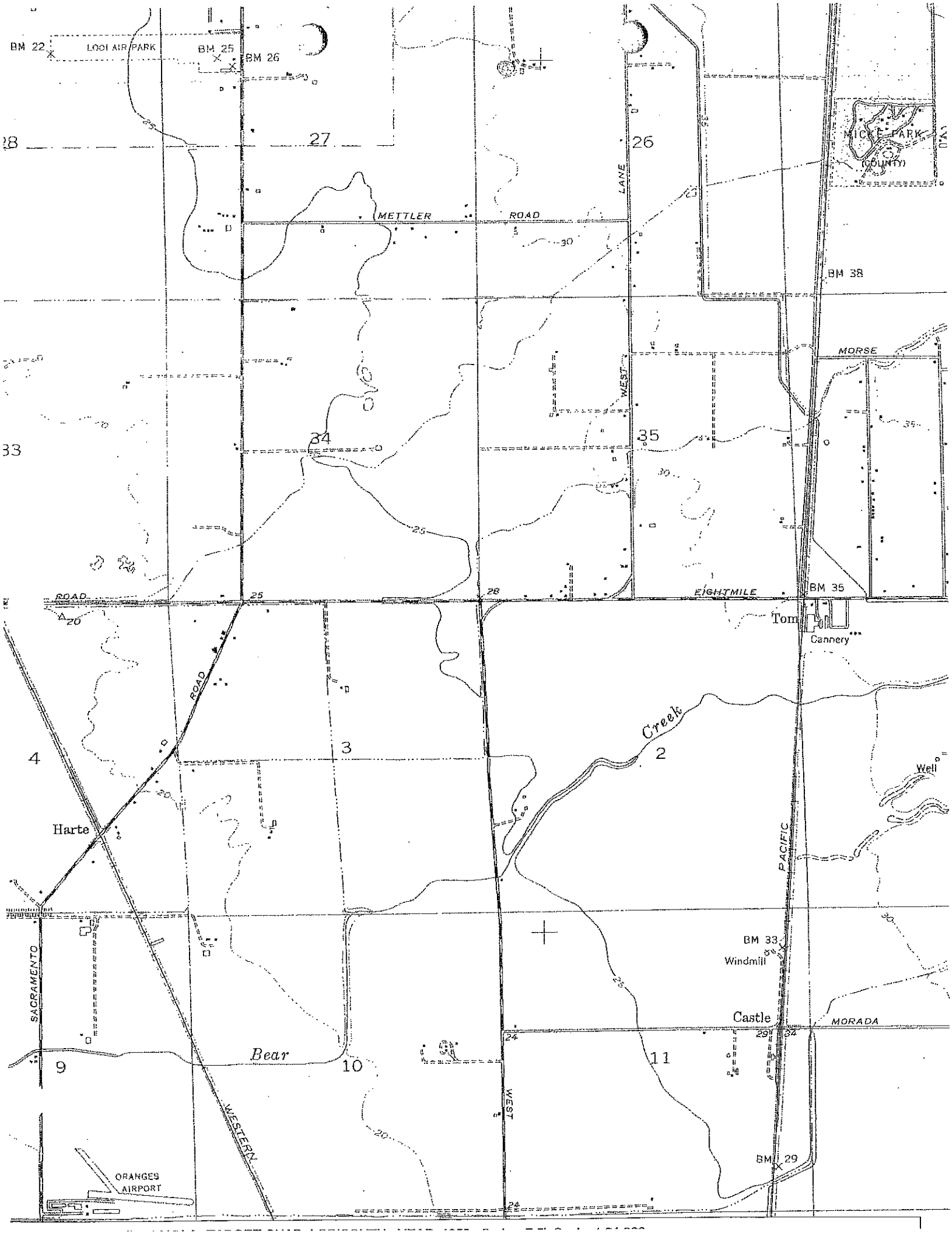
BM 22
LODI AIR PARK
BM 25
BM 26
28
27
26
MICKLE PARK
(COUNTY)
METTLER
ROAD
LANE
BM 38
MORSE
WEST
33
34
35
ROAD
25
28
EIGHTMILE
BM 35
Tom
Cannery
ROAD
Creek
4
3
2
Well
Harte
PACIFIC
BM 33
Windmill
SACRAMENTO
Castle
MORADA
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Bear
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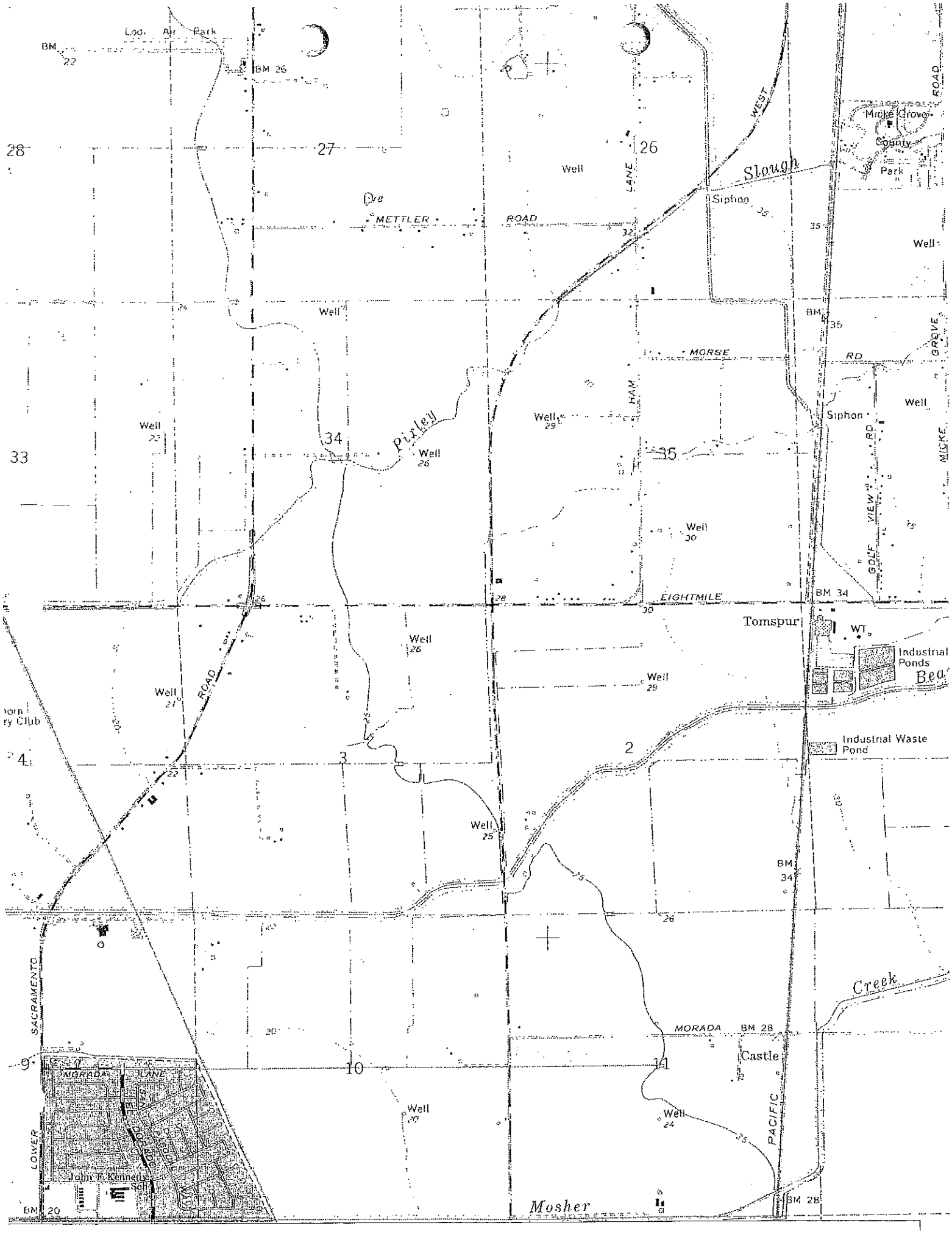
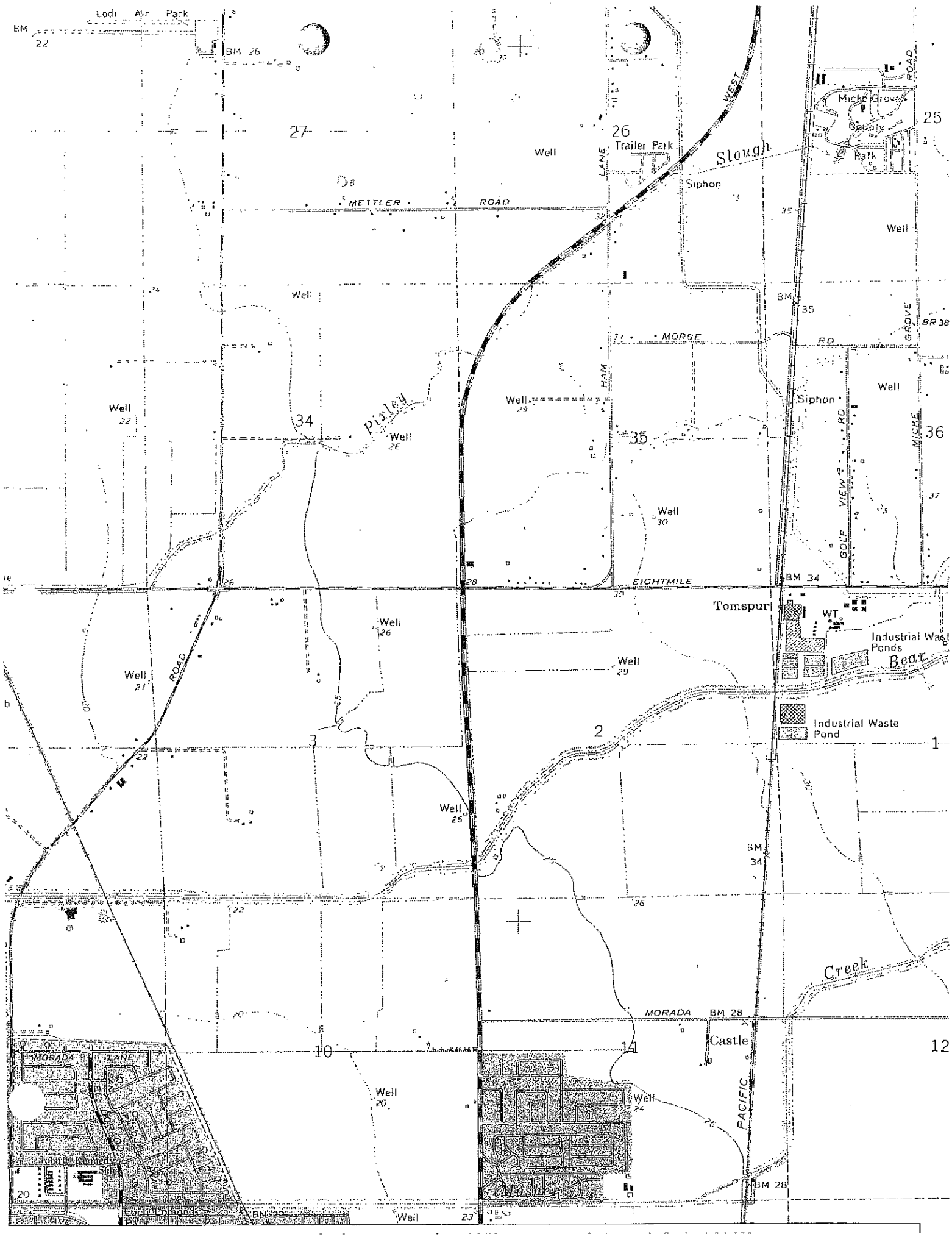
WESTERN
WEST
BM 29
ORANGES
AIRPORT



Lod. Air Park
BM 22
BM 26
28
27
26
Well
LANE
WEST
Slough
Micke Grove
County
Park
ROAD
Siphon
METTLER
ROAD
Well
Well
BM 35
MORSE
RD
GROVE
HAM
Well
Siphon
Well
Well
34
Pixley
Well
33
35
MICKE
RD
VIEW
GOLF
Well
30
EIGHTMILE
BM 34
Tomspur
WT
Industrial
Ponds
Bea
Well
Well
ROAD
Well
Well
Industrial Waste
Pond
4
3
2
Well
25
BM
34
SACRAMENTO
Creek
MORADA
BM 28
Castle
9
10
11
MORADA
LANE
Well
Well
PACIFIC
LOWER
John F. Kennedy
Sch
BM 20
Mosher
BM 28



Lodi Air Park
BM 22
BM 26
27
26
Trailer Park
Well
LANE
WEST
Slough
Siphon
METTLER ROAD
Micke Grove
County
Park
25
ROAD
Well
BM 35
MORSE RD
GROVE
BR 38
HAM
Well
Siphon
Well
Well
34
Pixley
Well
35
36
MICKE
GOLF VIEW RD
Well
EIGHTMILE
BM 34
Tomspur
WT
Industrial Waste Ponds
Bear
Well
Well
Well
ROAD
Industrial Waste Pond
3
2
1
Well
BM 34
Creek
MORADA
BM 28
Castle
10
11
12
MORADA LANE
Well
Well
PACIFIC
BM 28
Well

Aerial Photographs

The EDR-Aerial Photography Print Service

38 Acres
10666 N. West Lane
Stockton, CA 95212

March 1, 2004

Inquiry Number: 1136378-9

EDR® Environmental Data Resources Inc

The Standard In Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06460

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Environmental Data Resources, Inc.
Aerial Photography Print Service

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To meet the prior use requirements of ASTM E 1527-00, Section 7.3.4, the following *standard historical sources* may be used: aerial photographs, fire insurance maps, property tax files, land title records (although these cannot be the sole historical source consulted), topographic maps, city directories, building department records, or zoning/land use records. ASTM E 1527-00 requires *"All obvious uses of the property shall be identified from the present, back to the property's obvious first developed use, or back to 1940, whichever is earlier. This task requires reviewing only as many of the standard historical sources as are necessary, and that are reasonably ascertainable and likely to be useful."* (ASTM E 1527-00, Section 7.3.2, page 12.)

Aerial Photographs

Aerial photographs are a valuable historical resource for documenting past land use and can be particularly helpful when other historical sources (such as city directories or fire insurance maps) are not reasonably ascertainable. The EDR Aerial Photograph Print Service includes a search of local aerial photograph collections flown by public and private agencies for the state of California. EDR's professional field-based researchers provide digitally reproduced historical aerial photographs at ten year intervals.

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Regulatory Database Review

The EDR Radius Map
with GeoCheck®

38 Acres
10666 N. West Lane
Stockton, CA 95212

Inquiry Number: 1136378.4s

February 26, 2004

EDR® Environmental
Data Resources Inc

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06460

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

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GEOCHECK ADDENDUM

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Thank you for your business.
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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-00. Search distances are per ASTM standard or custom distances requested by the user.

TARGET PROPERTY INFORMATION

ADDRESS

10666 N. WEST LANE
STOCKTON, CA 95212

COORDINATES

Latitude (North):	38.055900 - 38' 3' 21.2"
Longitude (West):	121.294700 - 121' 17' 40.9"
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	649616.2
UTM Y (Meters):	4213184.0
Elevation:	30 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property:	38121-A3 LODI SOUTH, CA
Source:	USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the ASTM E 1527-00 search radius around the target property for the following databases:

FEDERAL ASTM STANDARD

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP..... CERCLIS No Further Remedial Action Planned
CORRACTS..... Corrective Action Report
RCRIS-TSD..... Resource Conservation and Recovery Information System
RCRIS-LQG..... Resource Conservation and Recovery Information System
ERNS..... Emergency Response Notification System

STATE ASTM STANDARD

AWP..... Annual Workplan Sites

EXECUTIVE SUMMARY

Cal-Sites..... Calsites Database
CHMIRS..... California Hazardous Material Incident Report System
Notify 65..... Proposition 65 Records
Toxic Pits..... Toxic Pits Cleanup Act Sites
SWF/LF..... Solid Waste Information System
WMUDS/SWAT..... Waste Management Unit Database
CA BOND EXP. PLAN..... Bond Expenditure Plan
UST..... List of Underground Storage Tank Facilities
VCP..... Voluntary Cleanup Program Properties
INDIAN UST..... Underground Storage Tanks on Indian Land
HIST UST..... Hazardous Substance Storage Container Database

FEDERAL ASTM SUPPLEMENTAL

CONSENT..... Superfund (CERCLA) Consent Decrees
ROD..... Records Of Decision
Delisted NPL..... National Priority List Deletions
FINDS..... Facility Index System/Facility Identification Initiative Program Summary Report
HMIRS..... Hazardous Materials Information Reporting System
MLTS..... Material Licensing Tracking System
MINES..... Mines Master Index File
NPL Liens..... Federal Superfund Liens
PADS..... PCB Activity Database System
DOD..... Department of Defense Sites
US BROWNFIELDS..... A Listing of Brownfields Sites
RAATS..... RCRA Administrative Action Tracking System
TRIS..... Toxic Chemical Release Inventory System
TSCA..... Toxic Substances Control Act
SSTS..... Section 7 Tracking Systems
FTTS INSP..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

STATE OR LOCAL ASTM SUPPLEMENTAL

AST..... Aboveground Petroleum Storage Tank Facilities
CLEANERS..... Cleaner Facilities
CA WDS..... Waste Discharge System
DEED..... List of Deed Restrictions
NFA..... No Further Action Determination
EMI..... Emissions Inventory Data
REF..... Unconfirmed Properties Referred to Another Agency
SCH..... School Property Evaluation Program
NFE..... Properties Needing Further Evaluation
CA SLIC..... Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
HAZNET..... Hazardous Waste Information System

EDR PROPRIETARY HISTORICAL DATABASES

Coal Gas..... Former Manufactured Gas (Coal Gas) Sites

BROWNFIELDS DATABASES

US BROWNFIELDS..... A Listing of Brownfields Sites

EXECUTIVE SUMMARY

VCP..... Voluntary Cleanup Program Properties

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

FEDERAL ASTM STANDARD

RCRIS: Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs): generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs): generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs): generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRIS-SQG list, as provided by EDR, and dated 01/12/2004 has revealed that there is 1 RCRIS-SQG site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
PACIFIC BELL	*2300 E EIGHT MILE ROAD*	*1/8 - 1/4 NW*	*A1*	*6*

STATE ASTM STANDARD

CORTESE: This database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with USTs having a reportable release and all solid waste disposal facilities from which there is known migration. The source is the California Environmental Protection Agency/Office of Emergency Information.

A review of the Cortese list, as provided by EDR, has revealed that there is 1 Cortese site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
PACIFIC BELL	*2300 EIGHT MILE RD*	*1/8 - 1/4 NW*	*3*	*8*

EXECUTIVE SUMMARY

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 04/02/2003 has revealed that there is 1 LUST site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
PACIFIC BELL	*2300 EIGHT MILE RD*	*1/8 - 1/4 NW*	*3*	*8*

CA FID: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, has revealed that there is 1 CA FID UST site within approximately 0.25 miles of the target property.

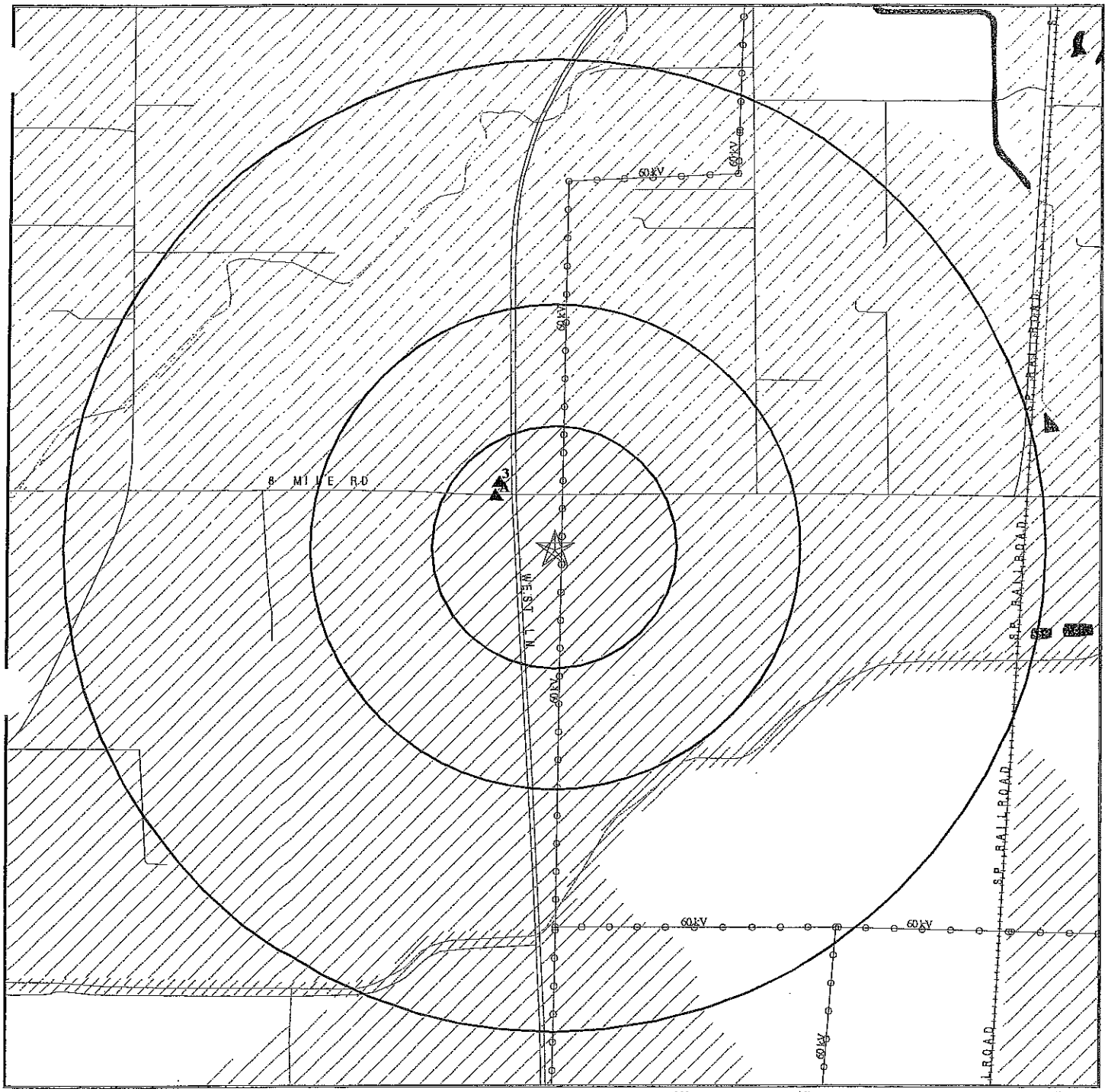
Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
PACIFIC BELL (UE-708) STKN CA	2300 E EIGHT MILE RD	1/8 - 1/4 NW	A2	7

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
LODI CENTRAL PLUME AREA	AWP, Cal-Sites
LODI CENTRAL PLUME AREA	AWP, Cal-Sites
MORADA CLEANERS	CLEANERS
CHARLEY JACOBS	LUST, Cortese
SPEEDY FOODS	LUST, Cortese
THE FUEL MART	LUST, Cortese
THE AUTO FACTORY	LUST, Cortese
CHEVRON #9-6155	LUST, Cortese
DURANGO TIRE	SWF/LF
DEFENSE REUTILIZATION & MARKETING OFFICE	SWF/LF
A-PLUS MATERIALS RECYCLING, INC.	SWF/LF
VICTOR MEATS	LUST
ARCO STATION #595*	UST
ROSA RANCH	HIST UST
KURTZ'S FUEL MART	HIST UST
GUARANTY FEDERAL BANK**	CA SLIC
VOLPI FARMS	CA SLIC
RIO CALAVERAS ELEMENTARY SCHOOL	SCH

OVERVIEW MAP - 1136378.4s - Environmental Science Services



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	38 Acres	CUSTOMER:	Environmental Science Services
ADDRESS:	10666 N. West Lane	CONTACT:	Chris Hintz
CITY/STATE/ZIP:	Stockton CA 95212	INQUIRY #:	1136378.4s
LAT/LONG:	38.0559 / 121.2947	DATE:	February 26, 2004 2:19 pm

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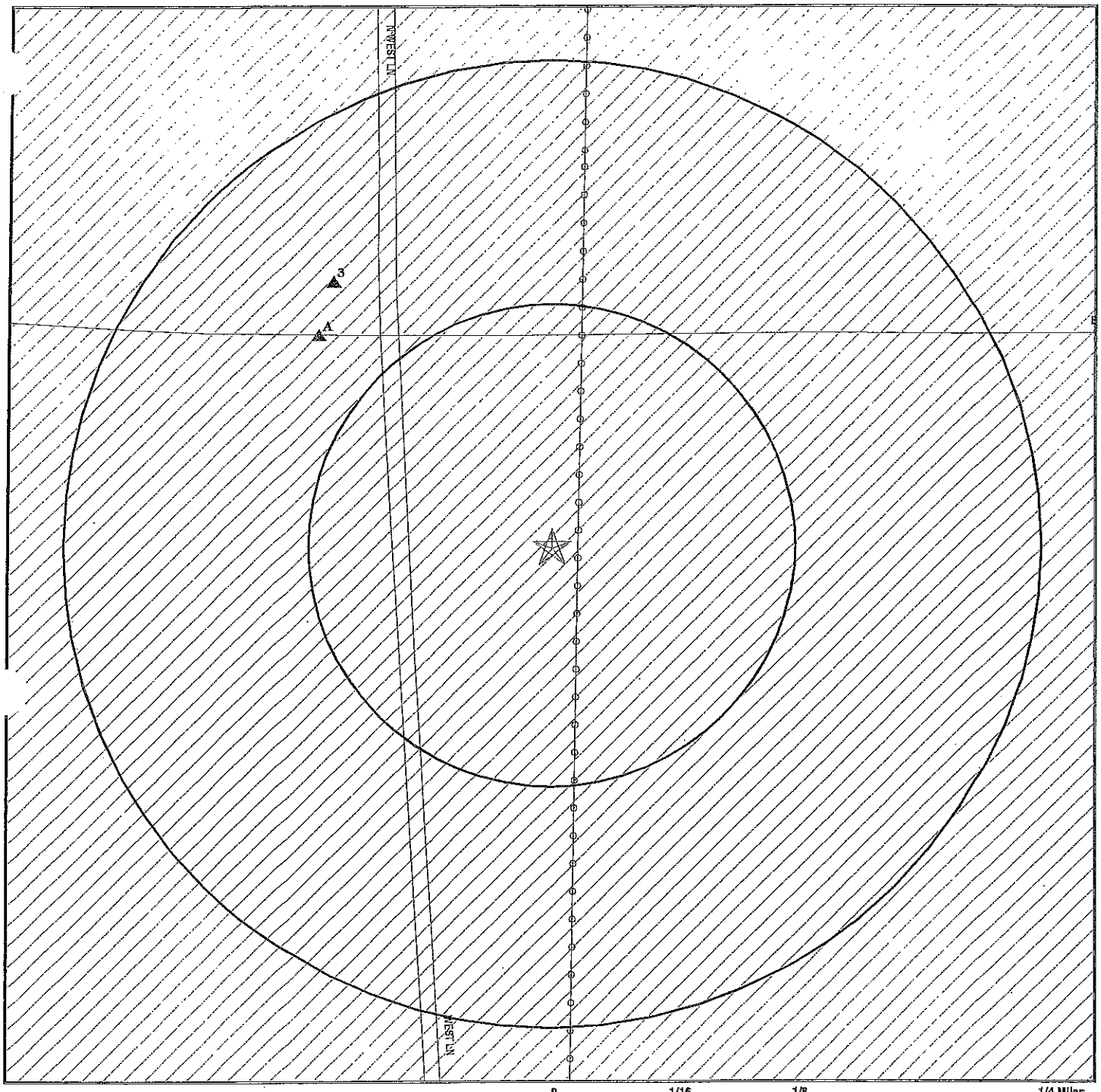
DETAIL MAP - 1136378.4s - Environmental Science Services



0 1/16 1/8 1/4 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Areas of Concern

TARGET PROPERTY:	38 Acres	CUSTOMER:	Environmental Science Services
ADDRESS:	10666 N. West Lane	CONTACT:	Chris Hintz
CITY/STATE/ZIP:	Stockton CA 95212	INQUIRY #:	1136378.4s
LAT/LONG:	38.0559 / 121.2947	DATE:	February 26, 2004 2:19 pm

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MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FEDERAL ASTM STANDARD								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.250	0	0	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
RCRIS-TSD		0.500	0	0	0	NR	NR	0
RCRIS Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRIS Sm. Quan. Gen.		0.250	0	1	NR	NR	NR	1
ERNS		TP	NR	NR	NR	NR	NR	0
STATE ASTM STANDARD								
AWP		1.000	0	0	0	0	NR	0
Cal-Sites		1.000	0	0	0	0	NR	0
CHMIRS		TP	NR	NR	NR	NR	NR	0
Cortese		0.500	0	1	0	NR	NR	1
Notify 65		1.000	0	0	0	0	NR	0
Toxic Pits		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
WMUDS/SWAT		0.500	0	0	0	NR	NR	0
LUST		0.500	0	1	0	NR	NR	1
CA Bond Exp. Plan		1.000	0	0	0	0	NR	0
UST		0.250	0	0	NR	NR	NR	0
VCP		0.500	0	0	0	NR	NR	0
INDIAN UST		0.250	0	0	NR	NR	NR	0
CA FID UST		0.250	0	1	NR	NR	NR	1
HIST UST		0.250	0	0	NR	NR	NR	0
FEDERAL ASTM SUPPLEMENTAL								
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
NPL Liens		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
STATE OR LOCAL ASTM SUPPLEMENTAL								
AST		TP	NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CLEANERS		0.250	0	0	NR	NR	NR	0
CA WDS		TP	NR	NR	NR	NR	NR	0
DEED		TP	NR	NR	NR	NR	NR	0
NFA		0.250	0	0	NR	NR	NR	0
EMI		TP	NR	NR	NR	NR	NR	0
REF		0.250	0	0	NR	NR	NR	0
SCH		0.250	0	0	NR	NR	NR	0
NFE		0.250	0	0	NR	NR	NR	0
CA SLIC		0.500	0	0	0	NR	NR	0
HAZNET		TP	NR	NR	NR	NR	NR	0
EDR PROPRIETARY HISTORICAL DATABASES								
Coal Gas		1.000	0	0	0	0	NR	0
BROWNFIELDS DATABASES								
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
VCP		0.500	0	0	0	NR	NR	0

NOTES:

AQUIFLOW - see EDR Physical Setting Source Addendum

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

A1
NW
1/8-1/4
859 ft.

PACIFIC BELL
2300 E EIGHT MILE ROAD
STOCKTON, CA 95205

RCRIS-SQG **1000251665**
FINDS **CAT080026420**
HAZNET

Site 1 of 2 in cluster A

Relative:
Equal

Actual:
30 ft.

RCRIS:

Owner:	NOT REQUIRED
	(415) 555-1212
EPA ID:	CAT080026420
Contact:	Not reported
Classification:	Small Quantity Generator
TSDF Activities:	Not reported
Violation Status:	No violations found

FINDS:

Other Pertinent Environmental Activity Identified at Site:
Resource Conservation and Recovery Act Information system (RCRAINFO)

HAZNET:

Gepaid:	CAT080026420
TSD EPA ID:	Not reported
Gen County:	San Joaquin
Tsd County:	Sacramento
Tons:	0.16
Waste Category:	Aqueous solution with less than 10% total organic residues
Disposal Method:	Transfer Station
Contact:	SHARON BAYLE/STAFF ASSOC
Telephone:	(925) 867-5741
Mailing Address:	PO BOX 5095 RM 3E000
	SAN RAMON, CA 94583 - 0995
County	Not reported

Gepaid:	CAT080026420
TSD EPA ID:	Not reported
Gen County:	San Joaquin
Tsd County:	San Mateo
Tons:	Not reported
Waste Category:	
Disposal Method:	Recycler
Contact:	SHARON BAYLE/STAFF ASSOC
Telephone:	(925) 867-5741
Mailing Address:	PO BOX 5095 RM 3E000
	SAN RAMON, CA 94583 - 0995
County	Not reported

PACIFIC BELL (Continued) **1000251665**

Gepaid:	CAT080026420
TSD EPA ID:	Not reported
Gen County:	San Joaquin
Tsd County:	San Mateo
Tons:	6.25
Waste Category:	Hydrocarbon solvents (benzene, hexane, Stoddard, etc.)
Disposal Method:	Not reported
Contact:	SHARON BAYLE/STAFF ASSOC
Telephone:	(925) 867-5741
Mailing Address:	PO BOX 5095 RM 3E000 SAN RAMON, CA 94583 - 0995
County	Not reported

Gepaid:	CAT080026420
TSD EPA ID:	Not reported
Gen County:	San Joaquin
Tsd County:	San Mateo
Tons:	0.62
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Not reported
Contact:	SHARON BAYLE/STAFF ASSOC
Telephone:	(925) 867-5741
Mailing Address:	PO BOX 5095 RM 3E000 SAN RAMON, CA 94583 - 0995
County	Not reported

Gepaid:	CAT080026420
TSD EPA ID:	Not reported
Gen County:	San Joaquin
Tsd County:	Contra Costa
Tons:	0.12
Waste Category:	Other empty containers 30 gallons or more
Disposal Method:	Not reported
Contact:	SHARON BAYLE/STAFF ASSOC
Telephone:	(925) 867-5741
Mailing Address:	PO BOX 5095 RM 3E000 SAN RAMON, CA 94583 - 0995
County	Not reported

The CA HAZNET database contains 54 additional records for this site.
Please click here or contact your EDR Account Executive for more information.

A2 **PACIFIC BELL (UE-708) STKN CA** **CA FID UST** **S101593171**
NW **2300 E EIGHT MILE RD** **N/A**
1/8-1/4 **STOCKTON, CA 95240**
859 ft.

Site 2 of 2 in cluster A

Relative:
Equal

Actual:
30 ft.

PACIFIC BELL (UE-708) STKN CA (Continued) **S101593171**

FID:

Facility ID:	39003273	Regulate ID:	Not reported
Reg By:	Active Underground Storage Tank Location		
Cortese Code:	Not reported	SIC Code:	Not reported
Status:	Active	Facility Tel:	Not reported
Mail To:	Not reported 1445 VAN NESS #236 STOCKTON, CA 95240		
Contact:	Not reported	Contact Tel:	Not reported
DUNs No:	Not reported	NPDES No:	Not reported
Creation:	10/22/93	Modified:	00/00/00
EPA ID:	Not reported		
Comments:	Not reported		

---

3 **PACIFIC BELL** **LUST** **S104403565**
NW **2300 EIGHT MILE RD** **Cortese** **N/A**
1/8-1/4 **STOCKTON, CA 95209**
937 ft.

Relative:
Higher

Actual:
31 ft.

State LUST:

Cross Street:	Not reported		
Qty Leaked:	Not reported		
Case Number	390916		
Reg Board:	0		
Chemical:	Gasoline		
Lead Agency:	Local Agency		
Local Agency :	0		
Case Type:	Soil only		
Status:	Case Closed		
Abate Method:	Excavate and Dispose - remove contaminated soil and dispose in approved site		
Review Date:	05/02/1996	Confirm Leak:	05/02/1996
Workplan:	Not reported	Prelim Assess:	Not reported
Pollution Char:	Not reported	Remed Plan:	Not reported
Remed Action:	Not reported		
Monitoring:	Not reported		
Close Date:	11/27/1996		
Release Date:	12/02/1996		
Cleanup Fund Id :	Not reported		
Discover Date :	05/02/1996		
Enforcement Dt :	1/1/65		
Enf Type:	None Taken		
Enter Date :	06/10/1996		
Funding:	Not reported		
Staff Initials:	MAR		
How Discovered:	Tank Closure		
How Stopped:	Not reported		
Interim :	Yes		
Leak Cause:	Not reported		
Leak Source:	Not reported		
MTBE Date :	/ /		
Max MTBE GW :	0 Parts per Billion		
MTBE Tested:	Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.		
Priority:	Medium priority		
Local Case # :	1893		
Beneficial:	Not reported		
Staff :	JLB		
GW Qualifier :	Not reported		

PACIFIC BELL (Continued) **S104403565**

Max MTBE Soil : Not reported
Soil Qualifier : Not reported
Hydr Basin #: Not reported
Operator : Not reported
Oversight Prgm: Local Oversight Program UST
Oversight Prgm : LOP
Review Date : 12/02/1996
Stop Date : / /
Work Suspended :No
Responsible PartyPACIFIC BELL
RP Address: PO BOX 5095, RM1N201, SAN RAMON, CA 94583
Global Id: T0607700738
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 0
Mtbe Fuel: 1
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

LUST Region 5:
Substance: GASOLINE
Case Type: Soil only
Program: Local Oversite Program - SWB Sponsored Program
Staff Initials: JLB Case Number: 390916
Status: Case Closed
MTBE Code: N/A
Lead Agency: Local

CORTESE:
Region: CORTESE
Fac Address 2: 2300 EIGHT MILE RD

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
LINDEN	U001603857	ROSA RANCH	EIGHT MILE RD. - 1 MI. E. OF T	95212	HIST UST
LODI	S104164855	CHARLEY JACOBS	13889 HWY 12 W	95240	LUST, Cortese
LODI	S104735713	VICTOR MEATS	16846 HWY 99 N	95240	LUST
LODI	S105954438	LODI CENTRAL PLUME AREA	70 ACRES CENTRD INTER CHURCH / WALNUT ST	95240	AWP, Cal-Sites
LODI	S105954437	LODI CENTRAL PLUME AREA	APPROX 70 ACRES OF CHURCH / WALNUT STI	95240	AWP, Cal-Sites
STOCKTON	S103066342	SPEEDY FOODS	8200 HWY 99 N	95212	LUST, Cortese
STOCKTON	S105026786	THE FUEL MART	10876 HWY 99 N	95212	LUST, Cortese
STOCKTON	S105026789	THE AUTO FACTORY	5942 HWY 99 E	95212	LUST, Cortese
STOCKTON	S105026790	CHEVRON #9-6155	9474 HWY 99 N	95212	LUST, Cortese
STOCKTON	U003786311	ARCO STATION #595*	6100 HWY 99	95212	UST
STOCKTON	S105628949	RIO CALAVERAS ELEMENTARY SCHOOL	BIANCHI ROAD/MARCH LANE/WEST LANE	95210	SCH
STOCKTON	S104228653	DURANGO TIRE	2749 EL DORADO STREET		SWF/LF
STOCKTON	S105964632	DEFENSE REUTILIZATION & MARKETING OFFICE	305 W FYFFE ST, 203-27 #4		SWF/LF
STOCKTON	U001603853	KURTZ'S FUEL MART	10807 N HIGHWAY 99	95212	HIST UST
STOCKTON	S105266593	MORADA CLEANERS	10060 N HWY 99	95212	CLEANERS
STOCKTON	S106112451	GUARANTY FEDERAL BANK**	201 N. MAIN STREET, MANTECA / 501 WEST WEBER AVE		CA SLIC
STOCKTON	S105964631	A-PLUS MATERIALS RECYCLING, INC.	PORT 23 PORT OF STOCKTON		SWF/LF
STOCKTON	S105982811	VOLPI FARMS	14210 STATE ROUTE 4 W		CA SLIC

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Elapsed ASTM days: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL ASTM STANDARD RECORDS

NPL: National Priority List
Source: EPA
Telephone: N/A
National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 10/21/03
Date Made Active at EDR: 12/08/03
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 11/03/03
Elapsed ASTM days: 35
Date of Last EDR Contact: 02/06/04

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 6
Telephone: 214-655-6659

EPA Region 8
Telephone: 303-312-6774

Proposed NPL: Proposed National Priority List Sites
Source: EPA
Telephone: N/A

Date of Government Version: 10/14/03
Date Made Active at EDR: 12/08/03
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 12/01/03
Elapsed ASTM days: 7
Date of Last EDR Contact: 02/06/04

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
Source: EPA
Telephone: 703-413-0223
CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 11/17/03
Date Made Active at EDR: 02/02/04
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 12/22/03
Elapsed ASTM days: 42
Date of Last EDR Contact: 12/22/03

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned
Source: EPA
Telephone: 703-413-0223
As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

Date of Government Version: 11/17/03
Date Made Active at EDR: 02/02/04
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 12/22/03
Elapsed ASTM days: 42
Date of Last EDR Contact: 12/22/03

CORRACTS: Corrective Action Report
Source: EPA
Telephone: 800-424-9346
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/18/03
Date Made Active at EDR: 02/02/04
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 12/26/03
Elapsed ASTM days: 38
Date of Last EDR Contact: 12/08/03

RCRIS: Resource Conservation and Recovery Information System
Source: EPA
Telephone: 800-424-9346
Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs): generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs): generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs): generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 01/12/04
Date Made Active at EDR: 02/10/04
Database Release Frequency: Varies
Date of Data Arrival at EDR: 01/19/04
Elapsed ASTM days: 22
Date of Last EDR Contact: 01/19/04

ERNS: Emergency Response Notification System
Source: National Response Center, United States Coast Guard
Telephone: 202-260-2342
Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/02
Date Made Active at EDR: 02/03/03
Database Release Frequency: Annually
Date of Data Arrival at EDR: 01/27/03
Elapsed ASTM days: 7
Date of Last EDR Contact: 01/26/04

FEDERAL ASTM SUPPLEMENTAL RECORDS

BRS: Biennial Reporting System
Source: EPA/NTIS
Telephone: 800-424-9346
The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/01/01
Database Release Frequency: Biennially
Date of Last EDR Contact: 12/16/03
Date of Next Scheduled EDR Contact: 03/15/04

CONSENT: Superfund (CERCLA) Consent Decrees
Source: EPA Regional Offices
Telephone: Varies
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: N/A
Database Release Frequency: Varies
Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ROD: Records Of Decision
Source: EPA
Telephone: 703-416-0223
Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 07/09/03
Database Release Frequency: Annually

Date of Last EDR Contact: 01/06/04
Date of Next Scheduled EDR Contact: 04/05/04

DELISTED NPL: National Priority List Deletions
Source: EPA
Telephone: N/A
The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 10/21/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 02/06/04
Date of Next Scheduled EDR Contact: 05/01/04

FINDS: Facility Index System/Facility Identification Initiative Program Summary Report
Source: EPA
Telephone: N/A
Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 10/23/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/06/04
Date of Next Scheduled EDR Contact: 04/05/04

HMIRS: Hazardous Materials Information Reporting System
Source: U.S. Department of Transportation
Telephone: 202-366-4555
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/18/03
Database Release Frequency: Annually

Date of Last EDR Contact: 01/19/04
Date of Next Scheduled EDR Contact: 04/19/04

MLTS: Material Licensing Tracking System
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 10/16/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/06/04
Date of Next Scheduled EDR Contact: 04/05/04

MINES: Mines Master Index File
Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959

Date of Government Version: 11/25/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 12/29/03
Date of Next Scheduled EDR Contact: 03/29/04

NPL LIENS: Federal Superfund Liens
Source: EPA
Telephone: 202-564-4267
Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA complies a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 11/21/03
Date of Next Scheduled EDR Contact: 02/23/04

PADS: PCB Activity Database System
Source: EPA
Telephone: 202-564-3887
PCB Activity Database. PADS identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 09/30/03
Database Release Frequency: Annually

Date of Last EDR Contact: 02/09/04
Date of Next Scheduled EDR Contact: 05/10/04

DOD: Department of Defense Sites
Source: USGS
Telephone: 703-648-5920
This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 10/01/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/02/04
Date of Next Scheduled EDR Contact: 05/10/04

STORMWATER: Storm Water General Permits
Source: Environmental Protection Agency
Telephone: 202 564-0746
A listing of all facilities with Storm Water General Permits.

Date of Government Version: N/A
Database Release Frequency: Quarterly

Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

US BROWNFIELDS: A Listing of Brownfields Sites
Source: Environmental Protection Agency
Telephone: 202-566-2777
Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become BCRLF cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 07/15/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 12/17/03
Date of Next Scheduled EDR Contact: 03/15/04

RMP: Risk Management Plans
Source: Environmental Protection Agency
Telephone: 202-564-8600
When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: N/A
Database Release Frequency: N/A

Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

RAATS: RCRA Administrative Action Tracking System
Source: EPA
Telephone: 202-564-4104
RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/95
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 12/08/03
Date of Next Scheduled EDR Contact: 03/08/04

TRIS: Toxic Chemical Release Inventory System
Source: EPA
Telephone: 202-566-0250
Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/01
Database Release Frequency: Annually

Date of Last EDR Contact: 12/22/03
Date of Next Scheduled EDR Contact: 03/22/04

TSCA: Toxic Substances Control Act
Source: EPA
Telephone: 202-260-5521
Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/02
Database Release Frequency: Every 4 Years

Date of Last EDR Contact: 12/08/03
Date of Next Scheduled EDR Contact: 03/08/04

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA
Telephone: 202-564-2501

Date of Government Version: 10/16/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/22/03
Date of Next Scheduled EDR Contact: 03/22/04

SSTS: Section 7 Tracking Systems
Source: EPA
Telephone: 202-564-5008
Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/01
Database Release Frequency: Annually

Date of Last EDR Contact: 01/19/04
Date of Next Scheduled EDR Contact: 04/19/04

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-564-2501
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 10/16/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/22/03
Date of Next Scheduled EDR Contact: 03/22/04

STATE OF CALIFORNIA ASTM STANDARD RECORDS

AWP: Annual Workplan Sites
Source: California Environmental Protection Agency
Telephone: 916-323-3400
Known Hazardous Waste Sites. California DTSC's Annual Workplan (AWP), formerly BEP, identifies known hazardous substance sites targeted for cleanup.

Date of Government Version: 11/30/03
Date Made Active at EDR: 01/08/04
Database Release Frequency: Annually

Date of Data Arrival at EDR: 12/01/03
Elapsed ASTM days: 38
Date of Last EDR Contact: 12/01/03

CAL-SITES: Calsites Database
Source: Department of Toxic Substance Control
Telephone: 916-323-3400
The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database.

Date of Government Version: 11/30/03
Date Made Active at EDR: 01/08/04
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 12/01/03
Elapsed ASTM days: 38
Date of Last EDR Contact: 12/01/03

CHMIRS: California Hazardous Material Incident Report System
Source: Office of Emergency Services
Telephone: 916-845-8400
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/02
Date Made Active at EDR: 08/07/03
Database Release Frequency: Varies

Date of Data Arrival at EDR: 07/11/03
Elapsed ASTM days: 27
Date of Last EDR Contact: 11/24/03

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-9100
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 04/01/01
Date Made Active at EDR: 07/26/01
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 05/29/01
Elapsed ASTM days: 58
Date of Last EDR Contact: 01/29/04

NOTIFY 65: Proposition 65 Records
Source: State Water Resources Control Board
Telephone: 916-445-3846
Proposition 65 Notification Records. NOTIFY 65 contains facility notifications about any release which could impact drinking water and thereby expose the public to a potential health risk.

Date of Government Version: 10/21/93
Date Made Active at EDR: 11/19/93
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 11/01/93
Elapsed ASTM days: 18
Date of Last EDR Contact: 01/19/04

TOXIC PITS: Toxic Pits Cleanup Act Sites
Source: State Water Resources Control Board
Telephone: 916-227-4364
Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/95
Date Made Active at EDR: 09/26/95
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 08/30/95
Elapsed ASTM days: 27
Date of Last EDR Contact: 02/02/04

SWF/LF (SWIS): Solid Waste Information System
Source: Integrated Waste Management Board
Telephone: 916-341-6320
Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 11/14/03
Date Made Active at EDR: 01/08/04
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 12/16/03
Elapsed ASTM days: 23
Date of Last EDR Contact: 12/16/03

WMUDS/SWAT: Waste Management Unit Database
Source: State Water Resources Control Board
Telephone: 916-227-4448
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/00
Date Made Active at EDR: 05/10/00
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 04/10/00
Elapsed ASTM days: 30
Date of Last EDR Contact: 12/09/03

LUST: Leaking Underground Storage Tank Information System
Source: State Water Resources Control Board
Telephone: 916-341-5740
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 04/02/03
Date Made Active at EDR: 04/25/03
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 04/16/03
Elapsed ASTM days: 9
Date of Last EDR Contact: 01/12/04

CA BOND EXP. PLAN: Bond Expenditure Plan
Source: Department of Health Services
Telephone: 916-255-2118
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/89
Date Made Active at EDR: 08/02/94
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 07/27/94
Elapsed ASTM days: 6
Date of Last EDR Contact: 05/31/94

CA UST:

UST: Active UST Facilities
Source: SWRCB
Telephone: 916-341-5700
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 04/02/03
Date Made Active at EDR: 04/30/03
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 04/16/03
Elapsed ASTM days: 14
Date of Last EDR Contact: 01/12/04

VCP: Voluntary Cleanup Program Properties
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 11/30/03
Date Made Active at EDR: 12/23/03
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 12/01/03
Elapsed ASTM days: 22
Date of Last EDR Contact: 12/01/03

INDIAN UST: Underground Storage Tanks on Indian Land
Source: EPA Region 9
Telephone: 415-972-3368

Date of Government Version: 12/05/03
Date Made Active at EDR: 01/08/04
Database Release Frequency: Varies
Date of Data Arrival at EDR: 12/05/03
Elapsed ASTM days: 34
Date of Last EDR Contact: 11/24/03

CA FID UST: Facility Inventory Database
Source: California Environmental Protection Agency
Telephone: 916-445-6532
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/94
Date Made Active at EDR: 09/29/95
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 09/05/95
Elapsed ASTM days: 24
Date of Last EDR Contact: 12/28/98

HIST UST: Hazardous Substance Storage Container Database
Source: State Water Resources Control Board
Telephone: 916-341-5700
The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/90
Date Made Active at EDR: 02/12/91
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 01/25/91
Elapsed ASTM days: 18
Date of Last EDR Contact: 07/26/01

STATE OF CALIFORNIA ASTM SUPPLEMENTAL RECORDS

AST: Aboveground Petroleum Storage Tank Facilities
Source: State Water Resources Control Board
Telephone: 916-341-5712
Registered Aboveground Storage Tanks.

Date of Government Version: 12/01/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 02/02/04
Date of Next Scheduled EDR Contact: 05/01/04

CLEANERS: Cleaner Facilities
Source: Department of Toxic Substance Control
Telephone: 916-225-0873
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 11/26/03
Database Release Frequency: Annually
Date of Last EDR Contact: 01/07/04
Date of Next Scheduled EDR Contact: 04/05/04

CA WDS: Waste Discharge System
Source: State Water Resources Control Board
Telephone: 916-657-1571
Sites which have been issued waste discharge requirements.

Date of Government Version: 12/15/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/22/03
Date of Next Scheduled EDR Contact: 03/22/04

DEED: List of Deed Restrictions
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
The use of recorded land use restrictions is one of the methods the DTSC uses to protect the public from unsafe exposures to hazardous substances and wastes.

Date of Government Version: 01/05/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/06/04
Date of Next Scheduled EDR Contact: 04/05/04

NFA: No Further Action Determination
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties at which DTSC has made a clear determination that the property does not pose a problem to the environment or to public health.

Date of Government Version: 11/30/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/01/03
Date of Next Scheduled EDR Contact: 03/01/04

EMI: Emissions Inventory Data
Source: California Air Resources Board
Telephone: 916-322-2990
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/01
Database Release Frequency: Varies

Date of Last EDR Contact: 01/23/04
Date of Next Scheduled EDR Contact: 04/19/04

REF: Unconfirmed Properties Referred to Another Agency
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties where contamination has not been confirmed and which were determined as not requiring direct DTSC Site Mitigation Program action or oversight. Accordingly, these sites have been referred to another state or local regulatory agency.

Date of Government Version: 11/30/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/01/03
Date of Next Scheduled EDR Contact: 03/01/04

SCH: School Property Evaluation Program
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 11/30/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/01/03
Date of Next Scheduled EDR Contact: 03/01/04

NFE: Properties Needing Further Evaluation
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties that are suspected of being contaminated. These are unconfirmed contaminated properties that need to be assessed using the PEA process. PEA in Progress indicates properties where DTSC is currently conducting a PEA. PEA Required indicates properties where DTSC has determined a PEA is required, but not currently underway.

Date of Government Version: 11/30/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/01/03
Date of Next Scheduled EDR Contact: 03/01/04

HAZNET: Hazardous Waste Information System
Source: California Environmental Protection Agency
Telephone: 916-255-1136
Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/02
Database Release Frequency: Annually

Date of Last EDR Contact: 02/09/04
Date of Next Scheduled EDR Contact: 05/10/04

LOCAL RECORDS

ALAMEDA COUNTY:

Local Oversight Program Listing of UGT Cleanup Sites
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700

Date of Government Version: 12/09/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 12/09/03
Date of Next Scheduled EDR Contact: 04/26/04

Underground Tanks
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700

Date of Government Version: 12/09/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 12/09/03
Date of Next Scheduled EDR Contact: 04/26/04

CONTRA COSTA COUNTY:

Site List
Source: Contra Costa Health Services Department
Telephone: 925-646-2286
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 12/01/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 12/01/03
Date of Next Scheduled EDR Contact: 03/01/04

FRESNO COUNTY:

CUPA Resources List
Source: Dept. of Community Health
Telephone: 559-445-3271
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 01/14/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/15/04
Date of Next Scheduled EDR Contact: 05/10/04

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Kern County Sites and Tanks Listing.

Date of Government Version: 07/25/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/22/03
Date of Next Scheduled EDR Contact: 03/08/04

LOS ANGELES COUNTY:

List of Solid Waste Facilities
Source: La County Department of Public Works
Telephone: 818-458-5185

Date of Government Version: 06/03/03
Database Release Frequency: Varies

Date of Last EDR Contact: 11/21/03
Date of Next Scheduled EDR Contact: 02/16/04

City of El Segundo Underground Storage Tank
Source: City of El Segundo Fire Department
Telephone: 310-524-2236

Date of Government Version: 09/11/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/16/04
Date of Next Scheduled EDR Contact: 05/17/04

City of Long Beach Underground Storage Tank
Source: City of Long Beach Fire Department
Telephone: 562-570-2543

Date of Government Version: 03/28/03
Database Release Frequency: Annually

Date of Last EDR Contact: 11/24/03
Date of Next Scheduled EDR Contact: 02/23/04

City of Torrance Underground Storage Tank
Source: City of Torrance Fire Department
Telephone: 310-618-2973

Date of Government Version: 09/03/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/16/04
Date of Next Scheduled EDR Contact: 05/17/04

City of Los Angeles Landfills
Source: Engineering & Construction Division
Telephone: 213-473-7869

Date of Government Version: 03/01/02
Database Release Frequency: Varies

Date of Last EDR Contact: 12/16/03
Date of Next Scheduled EDR Contact: 03/15/04

HMS: Street Number List
Source: Department of Public Works
Telephone: 626-458-3517
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 09/30/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 11/17/03
Date of Next Scheduled EDR Contact: 02/16/04

Site Mitigation List
Source: Community Health Services
Telephone: 323-890-7806
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/07/03
Database Release Frequency: Annually

Date of Last EDR Contact: 02/16/04
Date of Next Scheduled EDR Contact: 05/17/04

San Gabriel Valley Areas of Concern
Source: EPA Region 9
Telephone: 415-972-3178
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 12/31/98
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 07/06/99
Date of Next Scheduled EDR Contact: N/A

MARIN COUNTY:

Underground Storage Tank Sites
Source: Public Works Department Waste Management
Telephone: 415-499-6647
Currently permitted USTs in Marin County.

Date of Government Version: 08/19/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/02/04
Date of Next Scheduled EDR Contact: 05/01/04

NAPA COUNTY:

Sites With Reported Contamination
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 10/02/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 12/29/03
Date of Next Scheduled EDR Contact: 03/29/04

Closed and Operating Underground Storage Tank Sites
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 10/02/03
Database Release Frequency: Annually

Date of Last EDR Contact: 12/29/03
Date of Next Scheduled EDR Contact: 03/29/04

ORANGE COUNTY:

List of Underground Storage Tank Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 11/06/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 11/25/03
Date of Next Scheduled EDR Contact: 03/08/04

List of Underground Storage Tank Facilities
Source: Health Care Agency
Telephone: 714-834-3446
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 11/06/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/19/03
Date of Next Scheduled EDR Contact: 03/08/04

List of Industrial Site Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Petroleum and non-petroleum spills.

Date of Government Version: 11/06/03
Database Release Frequency: Annually

Date of Last EDR Contact: 12/08/03
Date of Next Scheduled EDR Contact: 03/08/04

PLACER COUNTY:

Master List of Facilities
Source: Placer County Health and Human Services
Telephone: 530-889-7312
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 10/16/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 12/22/03
Date of Next Scheduled EDR Contact: 03/22/04

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Source: Department of Public Health
Telephone: 909-358-5055
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 12/23/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/19/04
Date of Next Scheduled EDR Contact: 04/19/04

Underground Storage Tank Tank List
Source: Health Services Agency
Telephone: 909-358-5055

Date of Government Version: 12/01/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/19/04
Date of Next Scheduled EDR Contact: 04/19/04

SACRAMENTO COUNTY:

CS - Contaminated Sites
Source: Sacramento County Environmental Management
Telephone: 916-875-8406

Date of Government Version: 07/17/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 02/02/04
Date of Next Scheduled EDR Contact: 05/01/04

ML - Regulatory Compliance Master List
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 07/17/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 02/02/04
Date of Next Scheduled EDR Contact: 05/01/04

SAN BERNARDINO COUNTY:

Hazardous Material Permits
Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 01/08/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/08/03
Date of Next Scheduled EDR Contact: 03/08/04

SAN DIEGO COUNTY:

Solid Waste Facilities
Source: Department of Health Services
Telephone: 619-338-2209
San Diego County Solid Waste Facilities.

Date of Government Version: 08/01/00
Database Release Frequency: Varies

Date of Last EDR Contact: 11/21/03
Date of Next Scheduled EDR Contact: 02/23/04

Hazardous Materials Management Division Database
Source: Hazardous Materials Management Division
Telephone: 619-338-2268
The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 10/31/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/09/04
Date of Next Scheduled EDR Contact: 04/05/04

SAN FRANCISCO COUNTY:

Local Oversite Facilities
Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920

Date of Government Version: 12/09/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/08/03
Date of Next Scheduled EDR Contact: 03/08/04

Underground Storage Tank Information
Source: Department of Public Health
Telephone: 415-252-3920

Date of Government Version: 12/09/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/08/03
Date of Next Scheduled EDR Contact: 03/08/04

SAN MATEO COUNTY:

Fuel Leak List
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921

Date of Government Version: 11/24/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/26/04
Date of Next Scheduled EDR Contact: 04/12/04

Business Inventory
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 11/13/03
Database Release Frequency: Annually

Date of Last EDR Contact: 01/12/04
Date of Next Scheduled EDR Contact: 04/12/04

SANTA CLARA COUNTY:

Fuel Leak Site Activity Report
Source: Santa Clara Valley Water District
Telephone: 408-265-2600

Date of Government Version: 12/31/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 12/29/03
Date of Next Scheduled EDR Contact: 03/29/04

Hazardous Material Facilities
Source: City of San Jose Fire Department
Telephone: 408-277-4659

Date of Government Version: 10/01/03
Database Release Frequency: Annually

Date of Last EDR Contact: 12/08/03
Date of Next Scheduled EDR Contact: 03/08/04

SOLANO COUNTY:

Leaking Underground Storage Tanks
Source: Solano County Department of Environmental Management
Telephone: 707-421-6770

Date of Government Version: 12/16/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/16/03
Date of Next Scheduled EDR Contact: 03/15/04

Underground Storage Tanks
Source: Solano County Department of Environmental Management
Telephone: 707-421-6770

Date of Government Version: 12/16/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/16/03
Date of Next Scheduled EDR Contact: 03/15/04

SONOMA COUNTY:

Leaking Underground Storage Tank Sites
Source: Department of Health Services
Telephone: 707-565-6565

Date of Government Version: 01/26/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/26/04
Date of Next Scheduled EDR Contact: 04/26/04

SUTTER COUNTY:

Underground Storage Tanks
Source: Sutter County Department of Agriculture
Telephone: 530-822-7500

Date of Government Version: 01/29/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/09/04
Date of Next Scheduled EDR Contact: 04/05/04

VENTURA COUNTY:

Inventory of Illegal Abandoned and Inactive Sites
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 09/01/02
Database Release Frequency: Annually
Date of Last EDR Contact: 11/26/03
Date of Next Scheduled EDR Contact: 02/23/04

Listing of Underground Tank Cleanup Sites
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 12/01/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 12/16/03
Date of Next Scheduled EDR Contact: 03/15/04

Underground Tank Closed Sites List
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 12/01/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/12/04
Date of Next Scheduled EDR Contact: 04/12/04

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 12/01/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 12/16/03
Date of Next Scheduled EDR Contact: 03/15/04

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Source: Yolo County Department of Health
Telephone: 530-666-8646

Date of Government Version: 10/29/03
Database Release Frequency: Annually
Date of Last EDR Contact: 01/19/04
Date of Next Scheduled EDR Contact: 04/19/04

California Regional Water Quality Control Board (RWQCB) LUST Records

LUST REG 1: Active Toxic Site Investigation
Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-576-2220
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/01
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 11/21/03
Date of Next Scheduled EDR Contact: 02/23/04

LUST REG 2: Fuel Leak List
Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457

Date of Government Version: 01/21/04
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/14/04
Date of Next Scheduled EDR Contact: 04/12/04

LUST REG 3: Leaking Underground Storage Tank Database
Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147

Date of Government Version: 05/19/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 02/16/04
Date of Next Scheduled EDR Contact: 05/17/04

LUST REG 4: Underground Storage Tank Leak List
Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 01/23/04
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 12/31/03
Date of Next Scheduled EDR Contact: 03/29/04

LUST REG 5: Leaking Underground Storage Tank Database
Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-255-3125

Date of Government Version: 07/01/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/06/04
Date of Next Scheduled EDR Contact: 04/05/04

LUST REG 6L: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 916-542-5424
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/03
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 12/08/03
Date of Next Scheduled EDR Contact: 03/08/04

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-346-7491

Date of Government Version: 01/21/04
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/06/04
Date of Next Scheduled EDR Contact: 04/05/04

LUST REG 7: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-346-7491

Date of Government Version: 07/02/02
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 12/29/03
Date of Next Scheduled EDR Contact: 03/29/04

LUST REG 8: Leaking Underground Storage Tanks
Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4498
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 01/12/04
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 01/08/04
Date of Next Scheduled EDR Contact: 05/10/04

LUST REG 9: Leaking Underground Storage Tank Report
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/01
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 01/19/04
Date of Next Scheduled EDR Contact: 04/19/04

California Regional Water Quality Control Board (RWQCB) SLIC Records

SLIC REG 1: Active Toxic Site Investigations
Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220

Date of Government Version: 04/03/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 11/21/03
Date of Next Scheduled EDR Contact: 02/23/04

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 03/28/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/14/04
Date of Next Scheduled EDR Contact: 04/12/04

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 09/16/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/16/04
Date of Next Scheduled EDR Contact: 05/17/04

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 01/28/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/26/04
Date of Next Scheduled EDR Contact: 04/26/04

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-855-3075
Unregulated sites that impact groundwater or have the potential to impact groundwater.

Date of Government Version: 01/08/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/06/04
Date of Next Scheduled EDR Contact: 04/05/04

SLIC REG 6L: SLIC Sites
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574

Date of Government Version: 09/09/03
Database Release Frequency: Varies

Date of Last EDR Contact: 12/08/03
Date of Next Scheduled EDR Contact: 03/08/04

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583

Date of Government Version: 05/08/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/09/04
Date of Next Scheduled EDR Contact: 04/05/04

SLIC REG 7: SLIC List
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491

Date of Government Version: 12/19/03
Database Release Frequency: Varies

Date of Last EDR Contact: 12/01/03
Date of Next Scheduled EDR Contact: 02/23/04

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-3298

Date of Government Version: 04/01/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/07/04
Date of Next Scheduled EDR Contact: 04/05/04

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980

Date of Government Version: 12/01/03
Database Release Frequency: Annually

Date of Last EDR Contact: 12/01/03
Date of Next Scheduled EDR Contact: 03/04/04

EDR PROPRIETARY HISTORICAL DATABASES

Former Manufactured Gas (Coal Gas) Sites: The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. ©Copyright 1993 Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

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BROWNFIELDS DATABASES

VCP: Voluntary Cleanup Program Properties
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 11/30/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/01/03
Date of Next Scheduled EDR Contact: 03/01/04

US BROWNFIELDS: A Listing of Brownfields Sites
Source: Environmental Protection Agency
Telephone: 202-566-2777
Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become BCRLF cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: N/A
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: PennWell Corporation
Telephone: (800) 823-6277
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STREET AND ADDRESS INFORMATION

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GEOCHECK®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

38 ACRES
10666 N. WEST LANE
STOCKTON, CA 95212

TARGET PROPERTY COORDINATES

Latitude (North):	38.055901 - 38' 3' 21.2"
Longitude (West):	121.294701 - 121' 17' 40.9"
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	649616.2
UTM Y (Meters):	4213184.0
Elevation:	30 ft. above sea level

EDR's GeoCheck Physical Setting Source Addendum has been developed to assist the environmental professional with the collection of physical setting source information in accordance with ASTM 1527-00, Section 7.2.3. Section 7.2.3 requires that a current USGS 7.5 Minute Topographic Map (or equivalent, such as the USGS Digital Elevation Model) be reviewed. It also requires that one or more additional physical setting sources be sought when (1) conditions have been identified in which hazardous substances or petroleum products are likely to migrate to or from the property, and (2) more information than is provided in the current USGS 7.5 Minute Topographic Map (or equivalent) is generally obtained, pursuant to local good commercial or customary practice, to assess the impact of migration of recognized environmental conditions in connection with the property. Such additional physical setting sources generally include information about the topographic, hydrologic, hydrogeologic, and geologic characteristics of a site, and wells in the area.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata. EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

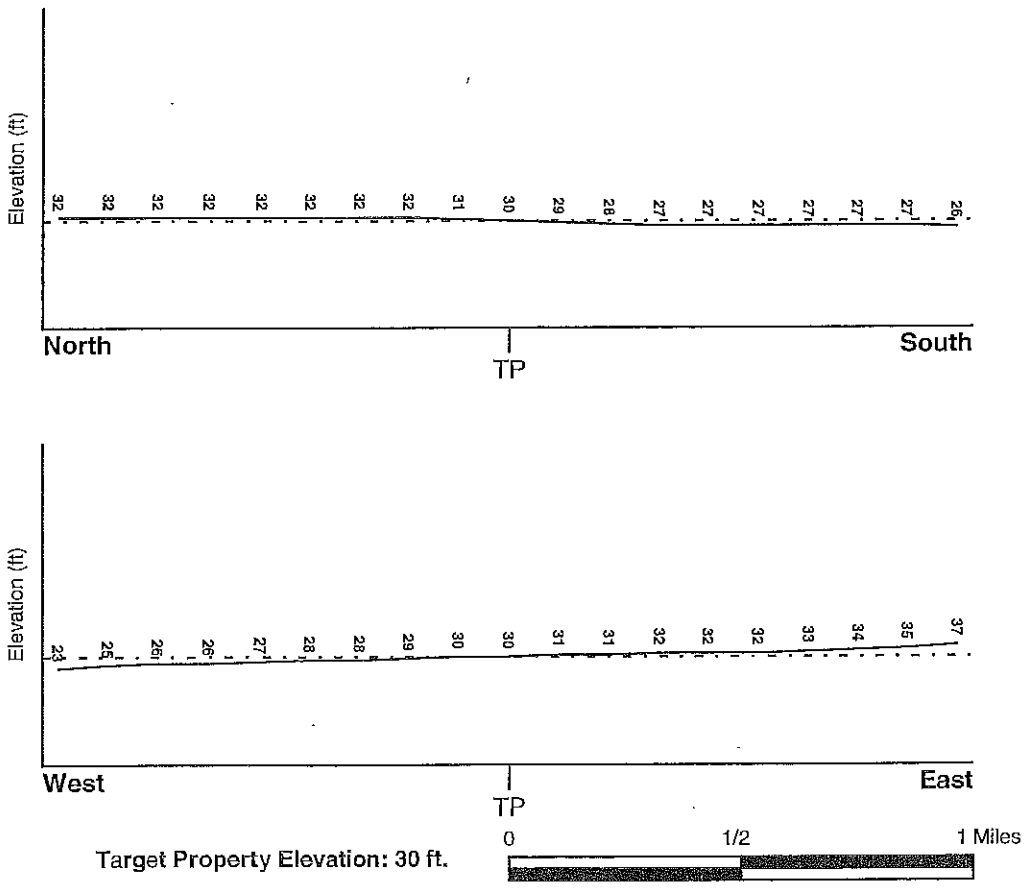
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

USGS Topographic Map:	38121-A3 LODI SOUTH, CA
General Topographic Gradient:	General SSW
Source:	USGS 7.5 min quad index

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Target Property Elevation: 30 ft.

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
SAN JOAQUIN, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property:	0602990295B
Additional Panels in search area:	0602990285B 0602990285B

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
LODI SOUTH	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site-specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era: Cenozoic
System: Quaternary
Series: Quaternary
Code: Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name: CLEAR LAKE

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Not reported

Hydric Status: Soil meets the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: HIGH

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

Soil Layer Information

	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	13 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.20 Min: 0.06	Max: 8.40 Min: 6.10

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
2	13 inches	60 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.20 Min: 0.06	Max: 8.40 Min: 7.40

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: silty clay
clay loam
silty clay loam
fine sandy loam
silt loam
sandy loam

Surficial Soil Types: silty clay
clay loam
silty clay loam
fine sandy loam
silt loam
sandy loam

Shallow Soil Types: clay loam
indurated
silty clay loam
fine sandy loam
sandy clay loam

Deeper Soil Types: silty clay loam
cemented
clay loam
loam
stratified
weathered bedrock

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

According to ASTM E 1527-00, Section 7.2.2, "one or more additional state or local sources of environmental records may be checked, in the discretion of the environmental professional, to enhance and supplement federal and state sources... Factors to consider in determining which local or additional state records, if any, should be checked include (1) whether they are reasonably ascertainable, (2) whether they are sufficiently useful, accurate, and complete in light of the objective of the records review (see 7.1.1), and (3) whether they are obtained, pursuant to local, good commercial or customary practice." One of the record sources listed in Section 7.2.2 is water well information. Water well information can be used to assist the environmental professional in assessing sources that may impact groundwater flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	USGS0168816	1/2 - 1 Mile NNE
4	USGS0168807	1/2 - 1 Mile West
5	USGS0168806	1/2 - 1 Mile East
1	USGS0168816	1/2 - 1 Mile NNE
4	USGS0168807	1/2 - 1 Mile West
5	USGS0168806	1/2 - 1 Mile East

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

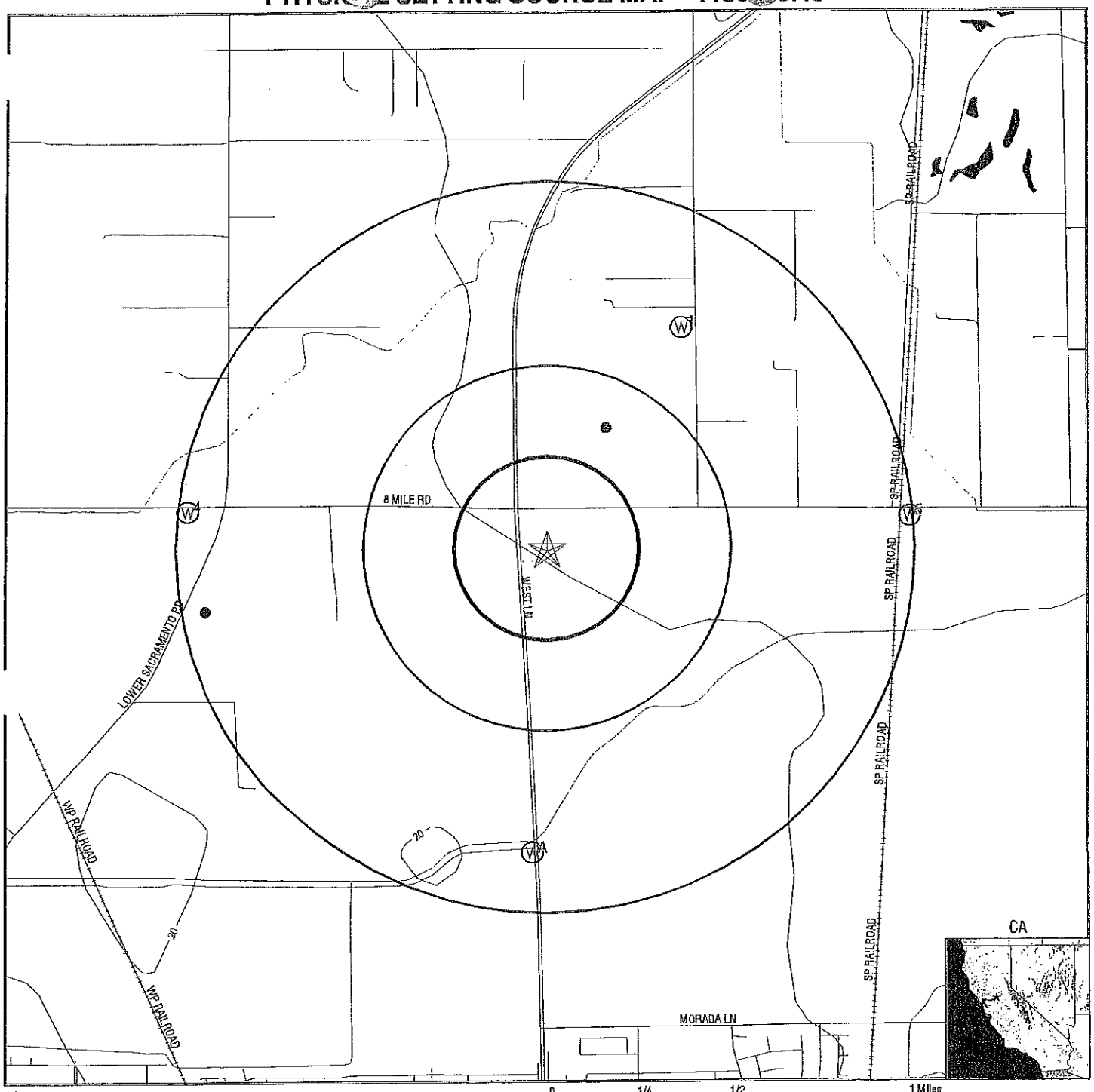
STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A2	23197	1/2 - 1 Mile South
A3	1940	1/2 - 1 Mile South
A2	23197	1/2 - 1 Mile South
A3	1940	1/2 - 1 Mile South

STATE OIL/GAS WELL INFORMATION

DISTANCE FROM TP (Miles)	DISTANCE FROM TP (Miles)
1/4 - 1/2 Mile NNE	1/2 - 1 Mile West
1/2 - 1 Mile West	1/4 - 1/2 Mile NNE

PHYSICAL SETTING SOURCE MAP - 1136378.4s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- (GI) Indeterminate Groundwater Flow at Location
- (GV) Groundwater Flow Varies at Location
- (HD) Closest Hydrogeological Data
- Oil, gas or related wells

TARGET PROPERTY:	38 Acres	CUSTOMER:	Environmental Science Services
ADDRESS:	10666 N. West Lane	CONTACT:	Chris Hintz
CITY/STATE/ZIP:	Stockton CA 95212	INQUIRY #:	1136378.4s
LAT/LONG:	38.0559 / 121.2947	DATE:	February 26, 2004 2:19 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation		Database	EDR ID Number
1 **NNE** **1/2 - 1 Mile** **Higher**		**FED USGS**	**USGS0168816**

Agency:	USGS	Site ID:	380353121171301
Site Name:	003N006E35L004M		
Dec. Latitude:	38.06464		
Dec. Longitude:	-121.288		
Coord Sys:	NAD83		
State:	CA		
County:	San Joaquin County		
Altitude:	30.00		
Hydrologic code:	18040005		
Topographic:	Valley flat		
Site Type:	Ground-water other than Spring		
Const Date:	19661222	Inven Date:	Not Reported
Well Type:	Single well, other than collector or Ranney type		
Primary Aquifer:	Not Reported		
Aquifer type:	Not Reported		
Well depth:	70.0		
Hole depth:	135	Source:	Not Reported
Project no:	Not Reported		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-12-22	36.00	

A2 **South** **1/2 - 1 Mile** **Lower**		**CA WELLS**	**23197**

Water System Information:

Prime Station Code:	J39/012-19TRT	User ID:	PTA
FRDS Number:	3910012074	County:	San Joaquin
District Number:	10	Station Type:	WELL/AMBNT
Water Type:	Well/Groundwater	Well Status:	Active Treated
Source Lat/Long:	380238.0 1211740.0	Precision:	1 Mile (One Minute)
Source Name:	WELL 19 - TREATED		
System Number:	3910012		
System Name:	STOCKTON, CITY OF		
Organization That Operates System:			
	2500 NAVY DRIVE		
	STOCKTON 95206		
Pop Served:	96000	Connections:	28033
Area Served:	STOCKTON		

A3 **South** **1/2 - 1 Mile** **Lower**		**CA WELLS**	**1940**

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Water System Information:

Prime Station Code:	02N/06E-10J03 M	User ID:	PTA
FRDS Number:	3910012038	County:	San Joaquin
District Number:	10	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	380238.0 1211740.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 19 - WEST LANE		
System Number:	3910012		
System Name:	STOCKTON, CITY OF		
Organization That Operates System:	2500 NAVY DRIVE STOCKTON 95206		
Pop Served:	96000	Connections:	28033
Area Served:	STOCKTON		

Sample Information: * Only Findings Above Detection Level Are Listed

Sample Collected:	11/03/1987	Findings:	19.200 C
Chemical:	SOURCE TEMPERATURE C		
Sample Collected:	11/03/1987	Findings:	10.000 UNITS
Chemical:	COLOR		
Sample Collected:	11/03/1987	Findings:	368.000 UMHO
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	11/03/1987	Findings:	7.800
Chemical:	FIELD PH		
Sample Collected:	11/03/1987	Findings:	7.700
Chemical:	PH (LABORATORY)		
Sample Collected:	11/03/1987	Findings:	170.000 MG/L
Chemical:	TOTAL ALKALINITY (AS CACO3)		
Sample Collected:	11/03/1987	Findings:	180.000 MG/L
Chemical:	TOTAL HARDNESS (AS CACO3)		
Sample Collected:	11/03/1987	Findings:	41.600 MG/L
Chemical:	CALCIUM		
Sample Collected:	11/03/1987	Findings:	18.600 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	11/03/1987	Findings:	14.600 MG/L
Chemical:	SODIUM		
Sample Collected:	11/03/1987	Findings:	5.390 MG/L
Chemical:	POTASSIUM		
Sample Collected:	11/03/1987	Findings:	11.000 MG/L
Chemical:	CHLORIDE		
Sample Collected:	11/03/1987	Findings:	168.000 UG/L
Chemical:	BARIUM		
Sample Collected:	11/03/1987	Findings:	21.000 UG/L
Chemical:	CHROMIUM (TOTAL)		
Sample Collected:	11/03/1987	Findings:	110.000 UG/L
Chemical:	IRON		
Sample Collected:	11/03/1987	Findings:	262.000 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	11/03/1987	Findings:	4.830 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11/03/1987	Findings:	6.000 NTU
Chemical:	TURBIDITY (LAB)		

Sample Collected:	03/01/1989	Findings:	1.200 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	03/01/1989	Findings:	5.800 PCI/L
Chemical:	GROSS BETA		
Sample Collected:	03/01/1989	Findings:	7.200 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	05/09/1989	Findings:	2.260 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	05/09/1989	Findings:	12.880 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	09/14/1989	Findings:	1.830 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	09/14/1989	Findings:	2.010 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	09/14/1989	Findings:	12.640 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	12/28/1989	Findings:	.900 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	12/28/1989	Findings:	7.200 PCI/L
Chemical:	GROSS BETA		
Sample Collected:	12/28/1989	Findings:	8.100 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	10/23/1990	Findings:	19.800 C
Chemical:	SOURCE TEMPERATURE C		
Sample Collected:	10/23/1990	Findings:	362.000 UMHO
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	10/23/1990	Findings:	7.600
Chemical:	FIELD PH		
Sample Collected:	10/23/1990	Findings:	8.000
Chemical:	PH (LABORATORY)		
Sample Collected:	10/23/1990	Findings:	160.000 MG/L
Chemical:	TOTAL ALKALINITY (AS CACO3)		
Sample Collected:	10/23/1990	Findings:	160.000 MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	10/23/1990	Findings:	162.000 MG/L
Chemical:	TOTAL HARDNESS (AS CACO3)		
Sample Collected:	10/23/1990	Findings:	38.000 MG/L
Chemical:	CALCIUM		
Sample Collected:	10/23/1990	Findings:	16.400 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	10/23/1990	Findings:	18.100 MG/L
Chemical:	SODIUM		
Sample Collected:	10/23/1990	Findings:	5.270 MG/L
Chemical:	POTASSIUM		
Sample Collected:	10/23/1990	Findings:	15.000 MG/L
Chemical:	CHLORIDE		
Sample Collected:	10/23/1990	Findings:	5.000 UG/L
Chemical:	ARSENIC		
Sample Collected:	10/23/1990	Findings:	115.000 UG/L
Chemical:	BARIUM		

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Sample Collected:	10/23/1990	Findings:	15.000 UG/L
Chemical:	MANGANESE		
Sample Collected:	10/23/1990	Findings:	224.000 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	10/23/1990	Findings:	-.020
Chemical:	LANGELIER INDEX @ SOURCE TEMP.		
Sample Collected:	10/23/1990	Findings:	3.820 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10/23/1990	Findings:	.290 NTU
Chemical:	TURBIDITY (LAB)		
Sample Collected:	11/19/1991	Findings:	19.900 C
Chemical:	SOURCE TEMPERATURE C		
Sample Collected:	11/19/1991	Findings:	338.000 UMHO
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	11/19/1991	Findings:	7.600
Chemical:	FIELD PH		
Sample Collected:	11/19/1991	Findings:	8.000
Chemical:	PH (LABORATORY)		
Sample Collected:	11/19/1991	Findings:	144.000 MG/L
Chemical:	TOTAL ALKALINITY (AS CACO3)		
Sample Collected:	11/19/1991	Findings:	144.000 MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	11/19/1991	Findings:	143.000 MG/L
Chemical:	TOTAL HARDNESS (AS CACO3)		
Sample Collected:	11/19/1991	Findings:	32.900 MG/L
Chemical:	CALCIUM		
Sample Collected:	11/19/1991	Findings:	14.700 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	11/19/1991	Findings:	14.900 MG/L
Chemical:	SODIUM		
Sample Collected:	11/19/1991	Findings:	2.410 MG/L
Chemical:	POTASSIUM		
Sample Collected:	11/19/1991	Findings:	9.300 MG/L
Chemical:	CHLORIDE		
Sample Collected:	11/19/1991	Findings:	4.000 UG/L
Chemical:	ARSENIC		
Sample Collected:	11/19/1991	Findings:	162.000 UG/L
Chemical:	BARIUM		
Sample Collected:	11/19/1991	Findings:	246.000 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	11/19/1991	Findings:	.270
Chemical:	LANGELIER INDEX @ SOURCE TEMP.		
Sample Collected:	11/19/1991	Findings:	.560 NTU
Chemical:	TURBIDITY (LAB)		
Sample Collected:	10/14/1992	Findings:	19.700 C
Chemical:	SOURCE TEMPERATURE C		
Sample Collected:	10/14/1992	Findings:	453.000 UMHO
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	10/14/1992	Findings:	7.500
Chemical:	FIELD PH		

Sample Collected:	10/14/1992	Findings:	7.800
Chemical:	PH (LABORATORY)		
Sample Collected:	10/14/1992	Findings:	184.000 MG/L
Chemical:	TOTAL ALKALINITY (AS CACO3)		
Sample Collected:	10/14/1992	Findings:	224.000 MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	10/14/1992	Findings:	193.000 MG/L
Chemical:	TOTAL HARDNESS (AS CACO3)		
Sample Collected:	10/14/1992	Findings:	44.200 MG/L
Chemical:	CALCIUM		
Sample Collected:	10/14/1992	Findings:	20.000 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	10/14/1992	Findings:	15.200 MG/L
Chemical:	SODIUM		
Sample Collected:	10/14/1992	Findings:	5.320 MG/L
Chemical:	POTASSIUM		
Sample Collected:	10/14/1992	Findings:	12.000 MG/L
Chemical:	CHLORIDE		
Sample Collected:	10/14/1992	Findings:	4.000 UG/L
Chemical:	ARSENIC		
Sample Collected:	10/14/1992	Findings:	190.000 UG/L
Chemical:	BARIUM		
Sample Collected:	10/14/1992	Findings:	209.000 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	10/14/1992	Findings:	- .010
Chemical:	LANGELIER INDEX @ SOURCE TEMP.		
Sample Collected:	10/14/1992	Findings:	.300 NTU
Chemical:	TURBIDITY (LAB)		
Sample Collected:	02/10/1993	Findings:	.300 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	04/29/1993	Findings:	.600 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	07/28/1993	Findings:	5.300 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	07/28/1993	Findings:	.800 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	07/28/1993	Findings:	9.000 PCI/L
Chemical:	GROSS BETA		
Sample Collected:	07/28/1993	Findings:	1.600 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	08/31/1994	Findings:	447.000 UMHO
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	08/31/1994	Findings:	7.700
Chemical:	PH (LABORATORY)		
Sample Collected:	08/31/1994	Findings:	170.000 MG/L
Chemical:	TOTAL ALKALINITY (AS CACO3)		
Sample Collected:	08/31/1994	Findings:	210.000 MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	08/31/1994	Findings:	1300.000 UG/L
Chemical:	NITRATE NITROGEN (NO3-N)		

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Sample Collected:	08/31/1994	Findings:	200.000 MG/L
Chemical:	TOTAL HARDNESS (AS CACO3)		
Sample Collected:	08/31/1994	Findings:	46.000 MG/L
Chemical:	CALCIUM		
Sample Collected:	08/31/1994	Findings:	21.000 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	08/31/1994	Findings:	16.000 MG/L
Chemical:	SODIUM		
Sample Collected:	08/31/1994	Findings:	5.500 MG/L
Chemical:	POTASSIUM		
Sample Collected:	08/31/1994	Findings:	11.000 MG/L
Chemical:	CHLORIDE		
Sample Collected:	08/31/1994	Findings:	160.000 UG/L
Chemical:	BARIUM		
Sample Collected:	08/31/1994	Findings:	48.000 UG/L
Chemical:	SILVER		
Sample Collected:	08/31/1994	Findings:	.010 UG/L
Chemical:	FOAMING AGENTS (MBAS)		
Sample Collected:	08/31/1994	Findings:	270.000 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	08/31/1994	Findings:	5.700 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08/31/1994	Findings:	1300.000 UG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	05/09/1995	Findings:	2.780 PCI/L
Chemical:	URANIUM		
Sample Collected:	05/09/1995	Findings:	.890 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	08/15/1995	Findings:	4.300 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08/15/1995	Findings:	2.660 PCI/L
Chemical:	URANIUM		
Sample Collected:	08/15/1995	Findings:	.900 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	12/07/1995	Findings:	.500 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	06/05/1996	Findings:	4.100 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09/18/1996	Findings:	5.700 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02/26/1997	Findings:	3.650 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	02/26/1997	Findings:	1.280 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		

Map ID Direction Distance Elevation	Database	EDR ID Number
4 **West** **1/2 - 1 Mile** **Lower**	**FED USGS**	**USGS0168807**

Agency:	USGS	Site ID:	380327121184101
Site Name:	002N006E03D003M		
Dec. Latitude:	38.05742		
Dec. Longitude:	-121.31245		
Coord Sys:	NAD83		
State:	CA		
County:	San Joaquin County		
Altitude:	22.00		
Hydrologic code:	18040005		
Topographic:	Valley flat		
Site Type:	Ground-water other than Spring		
Const Date:	Not Reported	Inven Date:	Not Reported
Well Type:	Single well, other than collector or Ranney type		
Primary Aquifer:	Not Reported		
Aquifer type:	Not Reported		
Well depth:	45.0		
Hole depth:	45.0	Source:	Not Reported
Project no:	Not Reported		

Ground-water levels, Number of Measurements: 0

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5 **East** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS0168806**

Agency:	USGS	Site ID:	380326121163201
Site Name:	002N006E01D002M		
Dec. Latitude:	38.05714		
Dec. Longitude:	-121.27661		
Coord Sys:	NAD83		
State:	CA		
County:	San Joaquin County		
Altitude:	33.00		
Hydrologic code:	18040005		
Topographic:	Valley flat		
Site Type:	Ground-water other than Spring		
Const Date:	19630516	Inven Date:	Not Reported
Well Type:	Single well, other than collector or Ranney type		
Primary Aquifer:	Not Reported		
Aquifer type:	Not Reported		
Well depth:	664		
Hole depth:	740	Source:	Not Reported
Project no:	Not Reported		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1963-05-16	34.00	

Map ID Direction Distance Elevation		Database	EDR ID Number
1 **NNE** **1/2 - 1 Mile** **Higher**		**FED USGS**	**USGS0168816**

Agency:	USGS	Site ID:	380353121171301
Site Name:	003N006E35L004M		
Dec. Latitude:	38.06464		
Dec. Longitude:	-121.288		
Coord Sys:	NAD83		
State:	CA		
County:	San Joaquin County		
Altitude:	30.00		
Hydrologic code:	18040005		
Topographic:	Valley flat		
Site Type:	Ground-water other than Spring		
Const Date:	19661222	Inven Date:	Not Reported
Well Type:	Single well, other than collector or Ranney type		
Primary Aquifer:	Not Reported		
Aquifer type:	Not Reported		
Well depth:	70.0		
Hole depth:	135	Source:	Not Reported
Project no:	Not Reported		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1966-12-22	36.00	

A2 **South** **1/2 - 1 Mile** **Lower**		**CA WELLS**	**23197**

Water System Information:

Prime Station Code:	J39/012-19TRT	User ID:	PTA
FRDS Number:	3910012074	County:	San Joaquin
District Number:	10	Station Type:	WELL/AMBNT
Water Type:	Well/Groundwater	Well Status:	Active Treated
Source Lat/Long:	380238.0 1211740.0	Precision:	1 Mile (One Minute)
Source Name:	WELL 19 - TREATED		
System Number:	3910012		
System Name:	STOCKTON, CITY OF		
Organization That Operates System:			
	2500 NAVY DRIVE		
	STOCKTON 95206		
Pop Served:	96000	Connections:	28033
Area Served:	STOCKTON		

A3 **South** **1/2 - 1 Mile** **Lower**		**CA WELLS**	**1940**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Water System Information:

Prime Station Code:	02N/06E-10J03 M	User ID:	PTA
FRDS Number:	3910012038	County:	San Joaquin
District Number:	10	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	380238.0 1211740.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 19 - WEST LANE		
System Number:	3910012		
System Name:	STOCKTON, CITY OF		
Organization That Operates System:	2500 NAVY DRIVE STOCKTON 95206		
Pop Served:	96000	Connections:	28033
Area Served:	STOCKTON		

Sample Information: * Only Findings Above Detection Level Are Listed

Sample Collected:	11/03/1987	Findings:	19.200 C
Chemical:	SOURCE TEMPERATURE C		
Sample Collected:	11/03/1987	Findings:	10.000 UNITS
Chemical:	COLOR		
Sample Collected:	11/03/1987	Findings:	368.000 UMHO
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	11/03/1987	Findings:	7.800
Chemical:	FIELD PH		
Sample Collected:	11/03/1987	Findings:	7.700
Chemical:	PH (LABORATORY)		
Sample Collected:	11/03/1987	Findings:	170.000 MG/L
Chemical:	TOTAL ALKALINITY (AS CACO3)		
Sample Collected:	11/03/1987	Findings:	180.000 MG/L
Chemical:	TOTAL HARDNESS (AS CACO3)		
Sample Collected:	11/03/1987	Findings:	41.600 MG/L
Chemical:	CALCIUM		
Sample Collected:	11/03/1987	Findings:	18.600 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	11/03/1987	Findings:	14.600 MG/L
Chemical:	SODIUM		
Sample Collected:	11/03/1987	Findings:	5.390 MG/L
Chemical:	POTASSIUM		
Sample Collected:	11/03/1987	Findings:	11.000 MG/L
Chemical:	CHLORIDE		
Sample Collected:	11/03/1987	Findings:	168.000 UG/L
Chemical:	BARIUM		
Sample Collected:	11/03/1987	Findings:	21.000 UG/L
Chemical:	CHROMIUM (TOTAL)		
Sample Collected:	11/03/1987	Findings:	110.000 UG/L
Chemical:	IRON		
Sample Collected:	11/03/1987	Findings:	262.000 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	11/03/1987	Findings:	4.830 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11/03/1987	Findings:	6.000 NTU
Chemical:	TURBIDITY (LAB)		

Sample Collected:	03/01/1989	Findings:	1.200 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	03/01/1989	Findings:	5.800 PCI/L
Chemical:	GROSS BETA		
Sample Collected:	03/01/1989	Findings:	7.200 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	05/09/1989	Findings:	2.260 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	05/09/1989	Findings:	12.880 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	09/14/1989	Findings:	1.830 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	09/14/1989	Findings:	2.010 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	09/14/1989	Findings:	12.640 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	12/28/1989	Findings:	.900 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	12/28/1989	Findings:	7.200 PCI/L
Chemical:	GROSS BETA		
Sample Collected:	12/28/1989	Findings:	8.100 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	10/23/1990	Findings:	19.800 C
Chemical:	SOURCE TEMPERATURE C		
Sample Collected:	10/23/1990	Findings:	362.000 UMHO
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	10/23/1990	Findings:	7.600
Chemical:	FIELD PH		
Sample Collected:	10/23/1990	Findings:	8.000
Chemical:	PH (LABORATORY)		
Sample Collected:	10/23/1990	Findings:	160.000 MG/L
Chemical:	TOTAL ALKALINITY (AS CACO3)		
Sample Collected:	10/23/1990	Findings:	160.000 MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	10/23/1990	Findings:	162.000 MG/L
Chemical:	TOTAL HARDNESS (AS CACO3)		
Sample Collected:	10/23/1990	Findings:	38.000 MG/L
Chemical:	CALCIUM		
Sample Collected:	10/23/1990	Findings:	16.400 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	10/23/1990	Findings:	18.100 MG/L
Chemical:	SODIUM		
Sample Collected:	10/23/1990	Findings:	5.270 MG/L
Chemical:	POTASSIUM		
Sample Collected:	10/23/1990	Findings:	15.000 MG/L
Chemical:	CHLORIDE		
Sample Collected:	10/23/1990	Findings:	5.000 UG/L
Chemical:	ARSENIC		
Sample Collected:	10/23/1990	Findings:	115.000 UG/L
Chemical:	BARIUM		

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Sample Collected:	10/23/1990	Findings:	15.000 UG/L
Chemical:	MANGANESE		
Sample Collected:	10/23/1990	Findings:	224.000 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	10/23/1990	Findings:	- .020
Chemical:	LANGELIER INDEX @ SOURCE TEMP.		
Sample Collected:	10/23/1990	Findings:	3.820 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10/23/1990	Findings:	.290 NTU
Chemical:	TURBIDITY (LAB)		
Sample Collected:	11/19/1991	Findings:	19.900 C
Chemical:	SOURCE TEMPERATURE C		
Sample Collected:	11/19/1991	Findings:	338.000 UMHO
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	11/19/1991	Findings:	7.600
Chemical:	FIELD PH		
Sample Collected:	11/19/1991	Findings:	8.000
Chemical:	PH (LABORATORY)		
Sample Collected:	11/19/1991	Findings:	144.000 MG/L
Chemical:	TOTAL ALKALINITY (AS CACO3)		
Sample Collected:	11/19/1991	Findings:	144.000 MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	11/19/1991	Findings:	143.000 MG/L
Chemical:	TOTAL HARDNESS (AS CACO3)		
Sample Collected:	11/19/1991	Findings:	32.900 MG/L
Chemical:	CALCIUM		
Sample Collected:	11/19/1991	Findings:	14.700 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	11/19/1991	Findings:	14.900 MG/L
Chemical:	SODIUM		
Sample Collected:	11/19/1991	Findings:	2.410 MG/L
Chemical:	POTASSIUM		
Sample Collected:	11/19/1991	Findings:	9.300 MG/L
Chemical:	CHLORIDE		
Sample Collected:	11/19/1991	Findings:	4.000 UG/L
Chemical:	ARSENIC		
Sample Collected:	11/19/1991	Findings:	162.000 UG/L
Chemical:	BARIUM		
Sample Collected:	11/19/1991	Findings:	246.000 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	11/19/1991	Findings:	.270
Chemical:	LANGELIER INDEX @ SOURCE TEMP.		
Sample Collected:	11/19/1991	Findings:	.560 NTU
Chemical:	TURBIDITY (LAB)		
Sample Collected:	10/14/1992	Findings:	19.700 C
Chemical:	SOURCE TEMPERATURE C		
Sample Collected:	10/14/1992	Findings:	453.000 UMHO
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	10/14/1992	Findings:	7.500
Chemical:	FIELD PH		

Sample Collected:	10/14/1992	Findings:	7.800
Chemical:	PH (LABORATORY)		
Sample Collected:	10/14/1992	Findings:	184.000 MG/L
Chemical:	TOTAL ALKALINITY (AS CACO3)		
Sample Collected:	10/14/1992	Findings:	224.000 MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	10/14/1992	Findings:	193.000 MG/L
Chemical:	TOTAL HARDNESS (AS CACO3)		
Sample Collected:	10/14/1992	Findings:	44.200 MG/L
Chemical:	CALCIUM		
Sample Collected:	10/14/1992	Findings:	20.000 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	10/14/1992	Findings:	15.200 MG/L
Chemical:	SODIUM		
Sample Collected:	10/14/1992	Findings:	5.320 MG/L
Chemical:	POTASSIUM		
Sample Collected:	10/14/1992	Findings:	12.000 MG/L
Chemical:	CHLORIDE		
Sample Collected:	10/14/1992	Findings:	4.000 UG/L
Chemical:	ARSENIC		
Sample Collected:	10/14/1992	Findings:	190.000 UG/L
Chemical:	BARIUM		
Sample Collected:	10/14/1992	Findings:	209.000 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	10/14/1992	Findings:	- .010
Chemical:	LANGELIER INDEX @ SOURCE TEMP.		
Sample Collected:	10/14/1992	Findings:	.300 NTU
Chemical:	TURBIDITY (LAB)		
Sample Collected:	02/10/1993	Findings:	.300 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	04/29/1993	Findings:	.600 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	07/28/1993	Findings:	5.300 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	07/28/1993	Findings:	.800 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	07/28/1993	Findings:	9.000 PCI/L
Chemical:	GROSS BETA		
Sample Collected:	07/28/1993	Findings:	1.600 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	08/31/1994	Findings:	447.000 UMHO
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	08/31/1994	Findings:	7.700
Chemical:	PH (LABORATORY)		
Sample Collected:	08/31/1994	Findings:	170.000 MG/L
Chemical:	TOTAL ALKALINITY (AS CACO3)		
Sample Collected:	08/31/1994	Findings:	210.000 MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	08/31/1994	Findings:	1300.000 UG/L
Chemical:	NITRATE NITROGEN (NO3-N)		

Sample Collected:	08/31/1994	Findings:	200.000 MG/L
Chemical:	TOTAL HARDNESS (AS CACO3)		
Sample Collected:	08/31/1994	Findings:	46.000 MG/L
Chemical:	CALCIUM		
Sample Collected:	08/31/1994	Findings:	21.000 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	08/31/1994	Findings:	16.000 MG/L
Chemical:	SODIUM		
Sample Collected:	08/31/1994	Findings:	5.500 MG/L
Chemical:	POTASSIUM		
Sample Collected:	08/31/1994	Findings:	11.000 MG/L
Chemical:	CHLORIDE		
Sample Collected:	08/31/1994	Findings:	160.000 UG/L
Chemical:	BARIUM		
Sample Collected:	08/31/1994	Findings:	48.000 UG/L
Chemical:	SILVER		
Sample Collected:	08/31/1994	Findings:	.010 UG/L
Chemical:	FOAMING AGENTS (MBAS)		
Sample Collected:	08/31/1994	Findings:	270.000 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	08/31/1994	Findings:	5.700 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08/31/1994	Findings:	1300.000 UG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	05/09/1995	Findings:	2.780 PCI/L
Chemical:	URANIUM		
Sample Collected:	05/09/1995	Findings:	.890 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	08/15/1995	Findings:	4.300 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08/15/1995	Findings:	2.660 PCI/L
Chemical:	URANIUM		
Sample Collected:	08/15/1995	Findings:	.900 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	12/07/1995	Findings:	.500 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	06/05/1996	Findings:	4.100 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09/18/1996	Findings:	5.700 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02/26/1997	Findings:	3.650 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	02/26/1997	Findings:	1.280 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		

Map ID Direction Distance Elevation		Database	EDR ID Number
4 **West** **1/2 - 1 Mile** **Lower**		**FED USGS**	**USGS0168807**

Agency:	USGS	Site ID:	380327121184101
Site Name:	002N006E03D003M		
Dec. Latitude:	38.05742		
Dec. Longitude:	-121.31245		
Coord Sys:	NAD83		
State:	CA		
County:	San Joaquin County		
Altitude:	22.00		
Hydrologic code:	18040005		
Topographic:	Valley flat		
Site Type:	Ground-water other than Spring		
Const Date:	Not Reported	Inven Date:	Not Reported
Well Type:	Single well, other than collector or Ranney type		
Primary Aquifer:	Not Reported		
Aquifer type:	Not Reported		
Well depth:	45.0		
Hole depth:	45.0	Source:	Not Reported
Project no:	Not Reported		

Ground-water levels, Number of Measurements: 0

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5 **East** **1/2 - 1 Mile** **Higher**		**FED USGS**	**USGS0168806**

Agency:	USGS	Site ID:	380326121163201
Site Name:	002N006E01D002M		
Dec. Latitude:	38.05714		
Dec. Longitude:	-121.27661		
Coord Sys:	NAD83		
State:	CA		
County:	San Joaquin County		
Altitude:	33.00		
Hydrologic code:	18040005		
Topographic:	Valley flat		
Site Type:	Ground-water other than Spring		
Const Date:	19630516	Inven Date:	Not Reported
Well Type:	Single well, other than collector or Ranney type		
Primary Aquifer:	Not Reported		
Aquifer type:	Not Reported		
Well depth:	664		
Hole depth:	740	Source:	Not Reported
Project no:	Not Reported		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1963-05-16	34.00	

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction Distance	Database	EDR ID Number

NNE
1/4 - 1/2 Mile — **OIL_GAS** — **CA00002072**

Well Number:	S1	Status:	Plugged and abandoned-dry hole
API Number:	07700519	Operator:	BP Exploration U.S.A. Inc.
Latitude:	38.06076	Longitude:	-121.29068
Region:	6	Lease:	North Stockton Unit A
Section:	35	Township:	03N
Range:	06E	Map Number:	611
Base and Meridian:	Mount Diablo	Total Depth:	6212.00000
Spud Date:	6/29/1962	Abandonment Date:	7/20/1962

West
1/2 - 1 Mile — **OIL_GAS** — **CA00002095**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	07700477	Operator:	E.C. Brown, Operator
Latitude:	38.05352	Longitude:	-121.31052
Region:	6	Lease:	North Stockton Unit A
Section:	03	Township:	02N
Range:	06E	Map Number:	606
Base and Meridian:	Mount Diablo	Total Depth:	4600.00000
Spud Date:	8/30/1962	Abandonment Date:	9/3/1962

NNE
1/4 - 1/2 Mile — **OIL_GAS** — **CA00002072**

Well Number:	S1	Status:	Plugged and abandoned-dry hole
API Number:	07700519	Operator:	BP Exploration U.S.A. Inc.
Latitude:	38.06076	Longitude:	-121.29068
Region:	6	Lease:	North Stockton Unit A
Section:	35	Township:	03N
Range:	06E	Map Number:	611
Base and Meridian:	Mount Diablo	Total Depth:	6212.00000
Spud Date:	6/29/1962	Abandonment Date:	7/20/1962

West
1/2 - 1 Mile — **OIL_GAS** — **CA00002095**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	07700477	Operator:	E.C. Brown, Operator
Latitude:	38.05352	Longitude:	-121.31052
Region:	6	Lease:	North Stockton Unit A
Section:	03	Township:	02N
Range:	06E	Map Number:	606
Base and Meridian:	Mount Diablo	Total Depth:	4600.00000
Spud Date:	8/30/1962	Abandonment Date:	9/3/1962

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zip	Total Sites	> 4 Pci/L	Pct. > 4 Pci/L
95212	1	0	0.00

Federal EPA Radon Zone for SAN JOAQUIN County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 95212

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	2.700 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002. 7.5-Minute DEMs correspond to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STATE RECORDS

California Drinking Water Quality Database
Source: Department of Health Services
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

California Oil and Gas Well Locations for District 2, 3, 5 and 6
Source: Department of Conservation
Telephone: 916-323-1779

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

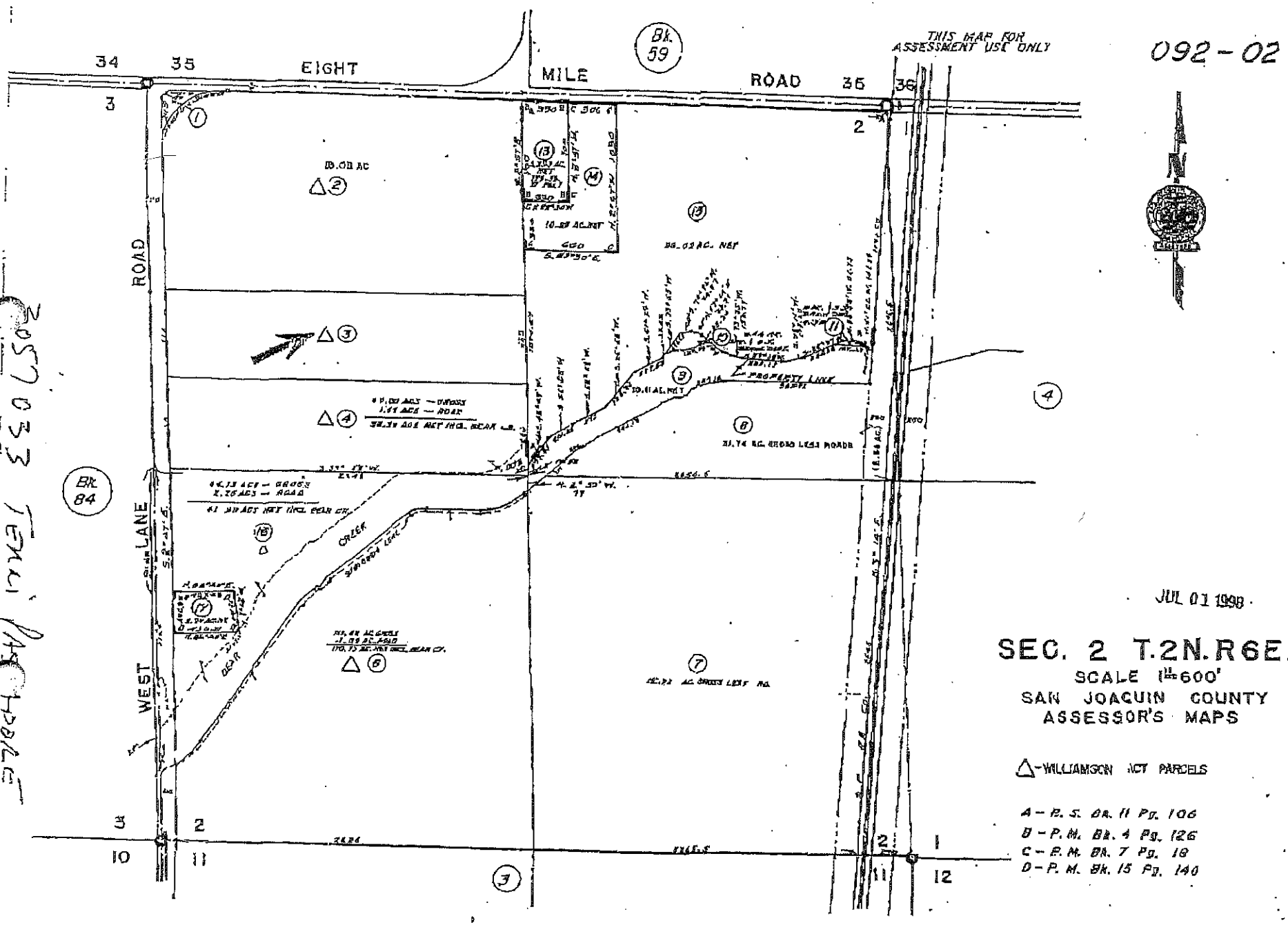
OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

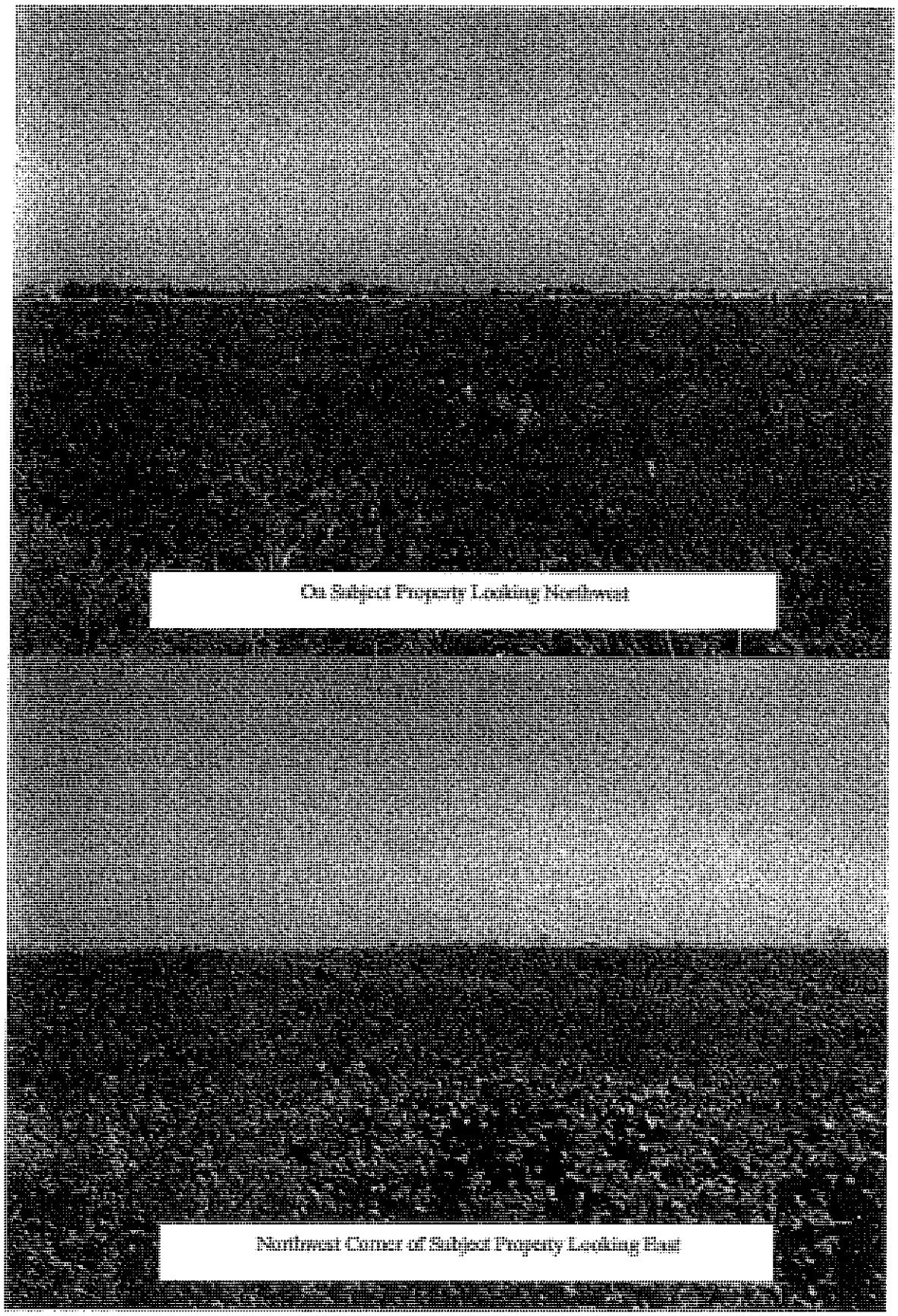
California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

Site Maps



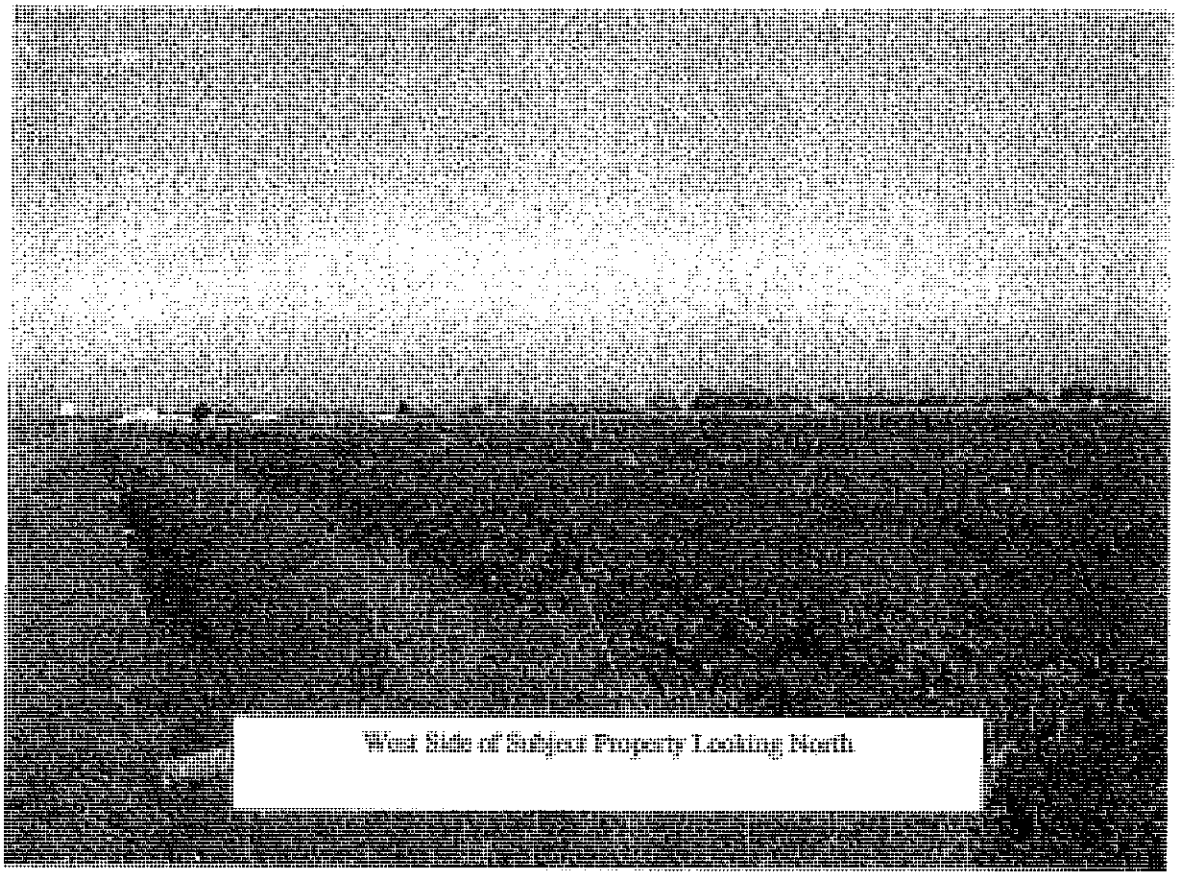
THIS PLAT IS FOR YOUR AID IN LOCATING YOUR LAND WITH REFERENCE TO STREET AND OTHER PARCELS. WHILE THIS PLAT IS BELIEVED TO BE CORRECT, THE COMPANY ASSUMES NO LIABILITY FOR LOSS OCCURING BY REASON OF RELIANCE T[illegible]ON.
CHICAGO TITLE COMPANY

Site Photographs



On Subject Property Looking Northwest

Northwest Corner of Subject Property Looking East



West Side of Subject Property Looking North

ATC ASSOCIATES INC.

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September 12, 2003

Prepared for:

Mill Creek Development Inc.
135 Lark Court
Alamo, California

By:

ATC ASSOCIATES INC.
1117 Lone Palm Avenue, Suite B
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ENVIRONMENTAL SITE ASSESSMENT FOR REAL PROPERTY 10808 NORTH WEST LANE STOCKTON, CALIFORNIA

John Sellman
Staff Geologist

Jeanne Homsey, CA PE #C47410
Branch Manager

Project No. 54.25169.0003

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September 12, 2003
54.25169.0003

Mill Creek Development Inc.
135 Lark Court
Alamo, California 94507

Attention: Mr. John Tomasello

SUBJECT: ENVIRONMENTAL SITE ASSESSMENT FOR REAL PROPERTY 10808 NORTH WEST LANE, STOCKTON, CALIFORNIA

Dear Mr. Tomasello:

Enclosed please find three copies of the above-referenced report in general accordance with ATC's proposal Number P91900 dated August 7, 2003. If you have any questions regarding this report, please call me at your convenience.

Sincerely yours,
ATC ASSOCIATES INC.

John Sellman
Staff Geologist

Jeanne Homsey
Jeanne Homsey, CA PE #C47410
Branch Manager

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ENVIRONMENTAL SITE ASSESSMENT
FOR REAL PROPERTY LOCATED
10808 NORTH WEST LANE
STOCKTON, CALIFORNIA

1.0 INTRODUCTION

This report summarizes the results of an environmental site assessment (ESA) conducted of Real Property located at 10808 North West Lane in Stockton, California, the "site" (Figure 1). ATC Associates Inc. (ATC) conducted the assessment in response to a request by Mr. John Tomasello of Mill Creek Development (Client) and in accordance with Proposal P91900 dated August 7, 2003, between Mill Creek Development and ATC. The stated reason for conducting this site investigation is for a real estate transaction.

2.0 OBJECTIVE

The objective of this assessment was to identify Recognized Environmental Conditions (RECs) and certain environmental conditions outside the scope of ASTM Practice E 1527-00 associated with the site. The Phase I ESA was conducted in general accordance with the requirements of the American Society for Testing and Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I for Environmental Site Assessments Process, Designation E 1527-00.*

3.0 SCOPE

The scope of services used to meet the objective was in general accordance with ASTM Standard E 1527-00. More specifically, the scope of services included review of the following readily available information sources:

- Task 1: Site and Site Vicinity Data
  - Discussions with personnel familiar with the site and review of site drawings;
  - A site reconnaissance to look for evidence of present and/or past operations that use or may have used potentially hazardous materials; and
  - A site vicinity reconnaissance to compile a list of companies and businesses in the immediate site vicinity that are reported to use, or appear to use or produce, hazardous substances that in our judgment may impact the site.

- Task 2: Historical Data

  - San Joaquin County Building, Planning, Environmental Health and Fire Department records regarding the site; and

  - Historical aerial photographs, topographic maps, city directories, and other published materials. The review was intended to provide information on historical land use as it relates to potential sources of hazardous waste (e.g., landfills, sumps, gas stations that are no longer present, or facility changes).

- Task 3: Agency Data

  For the site and a 1.00-mile radius of the site:

  - U.S. Environmental Protection Agency (USEPA) National Priorities List (NPL) database regarding Federal Superfund sites; and

  - California Environmental Protection Agency (CalEPA), Department of Toxic Substances Control (DTSC), Work Plan (AWP), and CalSites databases [formerly the Abandoned Sites Program Information System (ASPIS)].

  For the site and a 0.50-mile radius of the site:

  - EPA Resource Conservation and Recovery Information System (RCRIS), Resource Conservation and Recovery Act (RCRA) Treatment, Storage, and Disposal (TSD) facilities database;

  - Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database;

  - California Regional Water Quality Control Board (RWQCB) database regarding leaking underground storage tanks (LUSTs); and

  - California Integrated Waste Management Board (IWMB) database information regarding active or abandoned landfills, proposed landfills, and transfer stations.

  For the site and a 0.25-mile radius of the site:

  - California Water Resources Control Board (CWRCB) database regarding registered underground storage tanks (USTs);

  - EPA RCRA Facilities and Generators databases; and

- California Division of Oil and Gas (CADOG) published information regarding present or past oil field activities.

For the site:

- EPA Emergency Response Notification Systems (ERNS) database.

- San Joaquin County Environmental Health Division files regarding hazardous materials and USTs;

- San Joaquin County Fire Department files regarding hazardous materials and USTs; and

- Information regarding the hydrogeology of the site and/or site vicinity using selected references.

- Task 4: Consideration of potential environmental conditions outside the scope of ASTM Practice E 1527-00:

  - Asbestos-containing material (ACM), including an opinion of the potential for ACM based on construction date of the property buildings and visual observations of the condition of suspect ACM.

  - Radon gas, including a review of published radon data with regard to the potential for elevated levels of radon gas.

  - Lead-based paint (LBP), including an opinion on the potential for LBP based on the construction date and use of the property buildings.

- Task 5: Data Evaluation, Report Compilation, and Management

  - After completion of Tasks 1 through 4, the data were evaluated and this report was prepared.

4.0 LIMITATIONS

Certain information contained in this report may have been rightfully provided to ATC Associates Inc. by third parties or other sources. ATC Associates Inc. does not make any warranties or representations, whether expressed or implied, regarding the accuracy of such information, and shall not be held accountable or responsible in the event that any inaccuracies are present. No limitations to data collection were encountered.

The term "hazardous substance" is used here in general accordance with its usage as defined in the document Comprehensive Environmental Response, Compensation, and

Liability Act (CERCLA) of 1980, as amended.

As specified in the ASTM Standard E 1527-00 "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process," the term REC is used to describe environmental conditions or impacts warranting further inquiry. A REC, according to ASTM, is defined as the presence or likely presence of any hazardous substances or petroleum products on site under conditions that indicate an existing release, a past release, or a material threat of release of hazardous substances or petroleum products into structures on the site or into the ground, groundwater, or surface water of the site. *De minimis* conditions are **not** considered RECs. A *de minimis* condition generally does not present a material risk of harm to public health or the environment and generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

In addition, environmental conditions that in the past would have been considered a REC, but which may or may not be considered a REC currently, are identified as Historical RECs (HRECs) in this report.

The terms "material," "waste," and "substances" are used interchangeably, and no legal distinction is implied between the terms as used herein. The words "impact" or "impacted" are used here to mean the effect or result of a release of a hazardous substance that could be judged an REC.

5.0 SITE REVIEW

The following terms are used in this report:

- "Site" refers to the property within the approximate boundaries shown in Figures 1 and 2 and described in Subsection 5.1;
- "Immediate site vicinity" refers to properties immediately adjacent to the site that share a common boundary with the site; and
- "Site vicinity" refers to the area within approximately a 1-mile radius of the site.

5.1 Site Setting

The immediate site vicinity legal descriptions on file at the San Joaquin County Assessor's office is APN 092-02-002. The site is currently zoned AU-20, as agricultural land in reserve for future urban development and will be re-designated as low density residential (R-L) according to the general plan by San Joaquin County. The listed address for the site is 10808 North West Lane, Stockton, California 95210. Ownership of the property is listed as North Perris Stockton Association at 24012 Calle De La Plata, Suite 405, Laguna Hills, California.

The site is comprised of approximately 83.08 acres (San Joaquin County Assessors Map, 2003) of agricultural land south of Eight Mile Road and east of West Lane, California (Figures 1 and 2).

5.2 Site and Site Vicinity Reconnaissance

5.2.1 Site Reconnaissance – Mr. John Sellman, Staff Geologist with ATC, conducted the site reconnaissance on August 28, 2003. Color photographs of the site and adjacent properties are presented in Site Photographs 1 through 12. At the time of the site reconnaissance, the weather was clear and warm with good visibility.

The sites address is 10808 North West Lane in Stockton, San Joaquin County, California. The site is currently in used for crop production. Currently the site is not provided utilities but if the site were annexed to the City of Stockton utilities would be provided by:

Water:	City of Stockton.
Sewer:	City of Stockton
Electricity:	Pacific Gas & Electric
Natural Gas:	Pacific Gas & Electric

The site consists of a rectangular-shaped parcel identified by APN 092-02-002 which borders the south side of Eight Mile Road and the east side of North West Lane. The parcel has no improvements and is utilized as agricultural land.

There was one irrigation well observed at the site. Next to this well was one engine which appeared to run the pump for the well which also contained one fuel tank. This tank is considered to be an AST. This engine was observed to be leaking oil onto the ground. About two square feet of soil appeared to be stained with leaking oil. This is interpreted to be a *de minimus condition*.

There were two portable tanks, one polyethylene tank and one steel tank, with unknown contents that were observed to be on the adjacent parcel to the south, near the southeast corner of the site. They were not observed to be leaking and since they were not on the site, they are not an environmental concern to the site.

According to the USGS 7.5" topographic map for Lodi South, California, dated 1968, photorevised 1976, the site is approximately 28 feet above mean sea level. The regional topography slopes to the southwest and site topography is relatively flat.

5.2.2 Storage Tanks - No visual evidence of underground storage tanks (USTs) was observed during the site visit. A review of the regulatory database report indicated no USTs currently or previously permitted at the property address

One above ground storage tank (AST) was observed in association with the well pump engine, at the site during the site visit.

5.2.3 Hazardous Substance Use/Storage – Several discarded tires were observed on the site (Site Photo 10). The tires should be collected and disposed of at a proper recycling facility.

According to the EDR Report contained in Appendix A, PG&E high voltage electrical power lines are known to transect the property. No overhead power lines were observed to transect the property during the site reconnaissance or on any aerial photographs. PG&E should be contacted to locate all pipelines prior to any construction activities conducted at the site, and any unused pipeline should be properly abandoned by PG&E.

5.2.4 Waste Generation, Storage, and Disposal – Evidence of waste generation was not observed at the site. However, a debris pile including several used tires and possible household type waste was observed along the northern edge of the site along Eight Mile Road. Also a discarded television was observed at the southwest corner of the site.

5.2.5 Septic Systems – Evidence of septic systems was not observed at the site.

5.2.6 Polychlorinated Biphenyls (PCBs) – Polychlorinated biphenyls (PCBs) are a toxic chemical component of dielectric fluids, coolants or lubricating oils used in many electrical transformers, light ballasts, capacitors or other similar equipment manufactured prior to 1979. The federal government categorizes PCB content in electrical equipment into three groups:

< 50 ppm	non-PCB unit
> 50 to < 500 ppm	PCB-contaminated unit
500 ppm and greater	PCB-transformer

One pad-mounted electrical transformer was observed during the site visit. The transformer is located on the southwest corner of the site. The transformer was observed to have approximately one-square foot stain on the concrete pad in front of the transformer. The soil in front of the concrete pad did not appear stained.

Pacific Gas and Electric Company (PG&E) owns the transformer and has informed ATC in past telephone interviews that they would take responsibility for any transformer oil release associated with their equipment. Because the transformer did not appear to be leaking, the soil around the transformer pad did not appear stained, and on the information obtained from PG&E, the transformer is not considered to present an environmental concern to the site.

5.2.7 Wells – One irrigation groundwater well is located on the eastern boundary of

the property. No other groundwater recharge wells, groundwater monitoring wells, or dry wells were observed or reported on the property. ATC recommends that the well be properly abandoned when its use is no longer required.

5.2.8 Non-ASTM Practice E 1527-00 Scope Items

The scope-of-work also included consideration of potential environmental conditions that are outside the scope of ASTM Practice E 1527-00.

Asbestos - – Asbestos containing materials were not present since no structures were observed at the site.

Radon – Radon is a naturally occurring colorless, odorless gas that is a by-product of the decay of radioactive materials potentially present in bedrock and soil. Radon gas may enter the lowest level of a building through floor cracks, structural joints, or plumbing conduits. The EPA guidance action level for annual residential exposure to radon is 4.0 Pico Curies per liter of air (pCi/L). The guidance action level is not a regulatory requirement for private owners of commercial real estate, but is commonly used for comparison purposes to suggest whether further action at a building may be prudent. Sampling and analysis of radon gas was not in the scope of this investigation. Only sampling and analysis of radon gas by a licensed radon inspector can determine the radon levels at the Site.

ATC's review of published U.S. EPA radon data provided by Environmental Data Resources, Inc (EDR), indicates the property is located in an area of moderate propensity with regard to the potential for elevated levels of radon gas. The Federal EPA Radon Zone maps place San Joaquin County in Zone 3 characterized by average levels below 2 pCi/L. One measurement reported by EDR for the same zip code place the average radon concentration in the vicinity as 2.70 pCi/L in first floor living areas. Based upon the information obtained from EDR, radon gas accumulation appears to represent a low environmental concern to the site at this time.

Lead Based Paint (LBP) – Lead-based paint was not present since no structures were observed at the site.

5.2.9 Site Vicinity Reconnaissance - A site vicinity reconnaissance was conducted by Mr. Sellman on August 28, 2003. The site vicinity was observed to consist primarily of agricultural and residential properties with two commercial properties to the north and two commercial properties to the east. More specifically, the following surrounding properties were observed on the day of the site visit (Figure 2):

North:	Eight Mile road followed by Mid Way Cabinet, Grayson Engineering, agricultural land and residences;
East:	Pacific Bell facility, Sam Freitas Trucking, and agricultural land;
South:	Agricultural land;

West: North West Lane followed by agricultural land.

No gasoline stations, manufacturing operations, or industrial sites were observed on the adjacent properties.

5.3 Hydrogeology

Geology – Stockton, California is located in the San Joaquin Valley, the southern extension of the California Great Central Valley (Figure 1). The Great Central Valley is a deep alluvial plain extending nearly 500 miles from the Siskiyou Range of the Cascade Mountains in the north to the Tehachapi Range to the south. At Stockton, the San Joaquin Valley is approximately 40 miles wide. The western Valley boundary consists of the low, rolling foothills of the California Coast Range Mountains (maximum elevation due west is less than 3,000 feet) and the eastern boundary consists of the more rugged foothills of the Sierra Nevada (maximum elevation due east is over 10,000 feet).

The Great Central Valley contains a thick sequence of sediment, which, in places, reaches a depth of 10 miles. These sediments range in geologic age from Jurassic (205 million years before present) to Recent (present time) and include both marine and continental deposits. The site's immediate subsurface geology consists of Pleistocene and Recent alluvial deposits. These alluvial deposits consist of heterogeneous sequences of sand and gravel originating from active stream channels, and silt and clay originating from overbank and marsh depositional environments.

Soil information provide in the EDR report indicate that the soils in the site vicinity consist of Clear Lake soils, which are composed of clays, and are characterized as having very slow infiltration rates, have a high water table, or are shallow to an impervious layer.

Hydrology – Regional groundwater depth is reported to be approximately 60 feet below grade and the inferred groundwater gradient is southwesterly based upon surface topography and stream flow directions (Department of Water Resources, 1998).

Actual local groundwater depth and flow direction can be influenced by additional factors such as underground structures, seasonal fluctuations, soil and bedrock geology, and production wells, none of which were considered during this study.

Evidence indicative of wetlands, such as hydrophilic vegetation and surface water sources was observed in the irrigation drainage canal located around the perimeter of the site. The Lodi South, California 7.5-minute topographic quadrangle identifies the canal as wetland areas on the southern boundary and southern half of the western boundary of the site. The topographic map also identifies a canal bisecting the site from east to west. Bear Creek is identified on the topographic map within one half mile southeast of the site. The EDR database report obtained for this site assessment does not identify the canal as wetlands.

6.0 HISTORICAL REVIEW

6.1 Prior Ownership and Use

ATC contacted the San Joaquin County Planning Department and San Joaquin County Building Department on August 28, 2003. San Joaquin County Planning Department counter personnel stated that APN 092-02-002 is assigned the address 10808 North West Lane. ATC attempted to review historical permits and building records for the addresses, but no records were available.

6.2 San Joaquin County Assessor's Office

According to information on file at the San Joaquin County Assessor's Office, the site has been assigned the APN 092-02-002, and is zoned AU-20 as agricultural land in reserve for future urban development. Under the general plan for the area, this property will be will be re-designated as low density residential (R-L). No historical permits and building records for the addresses were available for review.

6.3 Sanborn Fire Insurance Maps

A search for historical Sanborn Fire Insurance Maps for the site was conducted through EDR of Southport, Connecticut. No coverage was identified for the site (see Appendix A).

6.4 Aerial Photographs

Readily available aerial photographs to assess the historical land use and development of the site and site vicinity were reviewed at the San Joaquin County Surveyor Division, in Stockton, California. Aerial photographs dated 1940, 1952, 1963, 1975, and 1983 were available for review. Obvious indicators of potential sources of hazardous waste from land use, such as apparent aboveground tank areas, ponds, pits, sumps, landfills, and heavy industry or oil-field-related developments, were not observed at the site in the photographs reviewed.

The 1940 photograph depicts the site as farmland. The adjacent land to the north, east, west, and south is agricultural land.

The 1952 photograph shows the site as farmland. The adjacent property to the south, east, and west is agricultural land. The land to the north is agricultural land with homesteads.

The 1963 photograph also shows the site as farmland. The adjacent property to the south, east, and west is agricultural land. The land to the north is agricultural land with homesteads. A feature interpreted to be an irrigation ditch appears to bisect the

site from east to west and another feature interpreted to be an irrigation ditch lies along the southern site boundary.

The 1975 photograph depicts the site and vicinity similar to the 1963 photograph.

The 1983 aerial photograph depicts the site similar to the 1975 photograph. A parcel to the north of the site is shown to have commercial buildings. Two parcels to the east depict commercial buildings. The parcels to the south and west appear to be agricultural.

Copies of the aerial photographs from 1940, 1952, 1963, 1975, and 1983 are presented in the Figures section of this report as Aerial Photographs 1 through 6.

6.5 Topographic Map

The site is located on the USGS 7.5-minute series Lodi South topographic map, dated 1968, and photorevised 1976. The topographic map depicts the site as vacant property with the irrigation canal bisecting the property approximately east to west. Two wells appear on the topographic map, one near the eastern boundary of the site and one near the southeast corner of the site. The surrounding areas to the south, east, and west are shown as undeveloped land. Land to the north is shown as having residences and one commercial structure to the north and west.

6.6 Cross-Reference Directories

ATC reviewed Haines Criss-Cross Directories for the year 1977, 1987, 1997, and 2003 at the Cesar Chavez Central Library in Stockton, California. The 1977, 1987, 1997, and 2003 Haines Criss-Cross Directories listed had no listing for 10808 North West Lane. Midway Cabinet and Fixture was listed to the north of the site, the remaining entries were residential.

Polk Business Directories for the years 1955, 1965, 1975, 1982, 1991, and 2003 were also reviewed at the Cesar Chavez Central Library. Polk Business Directories had no listing for 10808 North West Lane any of the years reviewed. No listings were found for any of the adjacent properties to the north or south of the site until 2003. In 2003 the Polk Directory listed Midway Cabinets to the north of the site.

7.0 PREVIOUS REPORTS

One previous report was provided to ATC, entitled *Preacquisition Site Assessment Moss and Craig Developments Approximately 194 Acres on East Eight Mile Road and West Lane Stockton, California*, by Kleinfelder, Inc. dated May 1991. This report included the site and another parcel to the south in its descriptions. The site is described as the northern parcel in the report. The report recommended that the site be sampled for pesticides. This report is included in Appendix C.

8.0 AGENCY LIST REVIEW

To conduct some parts of the regulatory review for this environmental assessment, the services of EDR were used and their report was provided to ATC. Appendix A presents the report that was provided by EDR and is the basis for the following agency information.

In the following sections, only facilities that are located in the immediate site vicinity, or those that are located upgradient (but are not necessarily located near the site) are discussed. These facilities were selected based on the assumption that hazardous material released to the subsurface generally does not migrate laterally within the soil for a substantial distance, but that hazardous material can migrate in the groundwater in a generally downgradient direction; however, there are limitations to this interpretation.

8.1 Federal NPL Superfund Sites: Distance Searched – 1.00 mile

Federal NPL Superfund sites are facilities that have been assigned the highest priority for cleanup by EPA pursuant to the EPA Hazard Ranking System. According to the EDR report, the site is not listed and no NPL facilities are located within the search area.

8.2 Federal CERCLIS List: Distance Searched – 0.50 miles

The CERCLIS list is an EPA-maintained database of potential hazardous waste sites that have come to the attention of EPA, which discovers these sites through citizen reports, routine inspections of hazardous waste generators and treatment, storage, and disposal facilities, and reporting requirements. Sites on the CERCLIS list are not necessarily hazardous waste sites, but rather sites that EPA plans to investigate in the future or has already investigated. According to the EDR report, the site is not listed and no CERCLIS facilities are located within the search area.

8.3 EPA RCRA TSD Facilities List: Distance Searched - 0.50 miles

The RCRA TSD list is a database maintained by EPA for facilities at which treatment, storage and/or disposal of hazardous waste takes place, as defined and regulated by RCRA. According to the EDR report, the site is not listed and no RCRA TSD facilities are located within the search area.

8.4 EPA RCRA Generators List: Distance Searched - 0.25 miles

The RCRA generators list is a database maintained by EPA of those facilities, entities, or persons that generate hazardous waste as defined and regulated by RCRA. According to the EDR report, the site is not listed. According to the EDR report, the Pacific Bell facility located at 2300 East Eight Mile Road, located approximately one eighth mile west-north west of the site is listed on the RCRA Small Quantity Generator list. During the site investigation the location of the Pacific Bell facility was observed to be adjacent to the east and potentially upgradient from the site. This facility has no reported violations, so it's listing as a RCRA small quantity generator does not represent an environmental concern to the site.

8.5 EPA ERNS List: Distance Searched – Target Property

The ERNS list is the EPA list of reported CERCLA hazardous substance releases or spills in quantities greater than the reportable quantity, as maintained at the National Response Center. Notification requirements for such releases or spills are codified in 40 CFR Parts 302 and 355. According to the EDR report, the site is not listed in this database.

8.6 CalEPA, DTSC, and Cal-Sites List: Distance Searched - 1.00 mile

The Cal-Sites (formerly ASPIS) is a Cal-EPA-maintained database of active and inactive cases of the site evaluation and/or site survey programs. This database is used as a tracking system for present or former sites by Cal-EPA, including State Superfund facilities. According to the EDR report, the site is not listed and no Cal-Sites are located within the search area.

8.7 Landfills: Distance Searched - 0.50 miles

The California Integrated Waste Management Board (IWMB) maintains a list of active and inactive landfills and transfer stations in California. Generally, the California IWMB learns of locations of landfills through permit applications and from local enforcement agencies. According to the EDR report, the site is not listed and no landfills are located within the search area.

8.8 Underground Storage Tanks (USTs)

USTs can be sources of hazardous materials that could potentially impact the soil around the tanks and the underlying groundwater if leakage of the contents of the tanks or associated piping were to occur.

8.8.1 Permitted USTs: Distance Searched – 0.25 miles - The California Water Resources Control Board (CWRCB) maintains a list regarding registered USTs in the State of California. According to the EDR report, the site is not listed. According to the EDR report, the Pacific Bell (UE-708) Stkn CA facility located at 2300 East Eight Mile Road, located approximately one eight mile west-north west of the site is listed on the CA FID UST list. During the site investigation the location of the Pacific Bell facility was observed to be adjacent to the east and potentially upgradient from the site. The site is listed as having an active UST. This facility is further discussed in Section 8.8.2.

8.8.2 UST Releases: Distance Searched - 0.50 miles - The California Regional Water Quality Control Board (RWQCB) maintains records of facilities currently involved in site assessment/mitigation resulting from reported spills or releases from USTs. According to the EDR report, the site is not listed. According to the database, one leaking UST (LUST) facility is located within the search radius.

The Pacific Bell facility located at 2300 East Eight Mile Road, located approximately one eight mile west-north west of the site is listed on the LUST, CA FID, and CORTESE databases. During the site investigation the location of the Pacific Bell facility was observed to be adjacent to the east and potentially upgradient from the site. This facility was reported to have had a release of gasoline which impacted soils only. The facility is further reported as having the affected soil excavated and disposed of in an approved location. This facility was granted a "No Further Action" status by the local oversight agency. Due to its status and reported removal of the affected soil this facility does not represent an environmental concern to the site.

Thirty-three Orphan sites are listed in the CA SLIC, HAZNET, SWF/LF, LUST, RCRIS-SQG, and FINDS databases. Orphans are sites that have inadequate addressing information to properly locate the sites by the EDR database report. A physical check of the locations reveals that only one orphan facility is located within one mile from the site and the remaining facilities are greater than one mile from the site and have a very low likelihood of having affected the site. This facility is listed on the HAZNET database and is greater than one half mile from the site. Due to the nature of the listing and distance from the site it does not represent an environmental concern to the site.

8.9 Oil and Gas: Distance Searched - 1.00 mile

According to oil and gas records and maps, no oil and/or gas production activity was reported to have occurred at the site. Three oil and/or gas wells were drilled north, and southwest of the site within the specified search distance. Two wells were drilled in 1962, to depths of 4,600 and 6,212 feet and one well was drilled in 1983 to a depth of 7,025 feet. All three wells were plugged and abandoned as dry holes.

8.10 Local Agencies: Distance Searched - Site

ATC issued a request to review file information maintained by the San Joaquin County Environmental Health Division (SJEHD).

8.10.1 San Joaquin County Environmental Health Department (SJEHD) – ATC contacted the SJEHD regarding the site. The SJEHD informed ATC that no files exist for the site.

9.0 DISCUSSION

9.1 On-Site Potential Sources

Review of historical resources indicates that the site has been undeveloped agricultural property from at least 1940 to present. Site use over that time period has been for crop production.

No visual evidence of underground storage tanks (USTs) was observed during the site visit. A review of the regulatory database report indicated no USTs currently or previously permitted at the property Address.

Several discarded tires were observed along the northern boundary of the site. The tires should be collected and disposed of at a proper recycling facility.

One pad-mounted electrical transformer was observed during the site visit. The transformer is located on the southwestern corner of the site. The transformer was observed to have approximately one-square foot stain on the concrete pad in front of the transformer. The soil in front of the concrete pad did not appear stained. Because the transformer did not appear to be leaking, the soil around the transformer pad did not appear stained, and on the information obtained from PG&E, the transformer is not considered to present an environmental concern to the site.

One irrigation groundwater well is located on the property on the east side of the site. The pump engine next to the well contained a fuel tank, interpreted to be an AST. The engine appeared to be leaking oil onto the ground, impacting approximately two square feet. This is interpreted to be a *de minimus condition*. ATC recommends that the well be properly abandoned when its use is no longer required.

Suspect ACMs or lead based paint were not present since no structures were observed at the site.

ATC's review the published U.S. EPA radon data for the area that indicates that the property is located in an area of low propensity with regard to the potential for elevated levels of radon gas. Based upon the published data, radon gas accumulation appears to represent a low environmental concern to the site at this time.

The site was not listed on environmentally related government databases searched for this ESA. In addition, ATC's review of local agency files did not indicate violations or environmental impairment at the site. Based on this assessment, it is our judgment that there is a low likelihood that current or historical activities conducted at the site have adversely impacted the site, and it is our judgment that these activities represent *de minimis* condition. Information pertaining to likelihood statements is presented in Appendix B.

9.2 Off-Site Potential Sources

Based on the location, distance, and nature of the off-site potential sources in the site vicinity, it is our judgment that there is a very low likelihood that potentially hazardous waste is present on or beneath the site due to these off-site potential sources of hazardous substances. It is our judgment that the off-site source would not constitute an REC.

10.0 CONCLUSIONS

Based on the information obtained during this assessment, current regulatory guidelines, and the judgment of ATC Associates Inc., the following conclusion has been drawn:

- ATC has performed a Phase I Environmental Site Assessment in conformance with the scope of work and limitations of ASTM Standard E 1527-00 for Real Property located at 10808 North West Land located in Stockton, California. The assessment has revealed no evidence of RECs in connection with the site. **However**, one *de minimis* condition was observed at the site, which in ATC's opinion have a low likelihood to have affected the site and recommendations are presented to investigate these conditions.

11.0 RECOMMENDATIONS

Based on the information obtained during this assessment, current regulatory guidelines, and the judgment of ATC Associates Inc., ATC presents the following recommendations to address potential environmental conditions at the property located at 10808 North West Lane in Stockton, California.

- ATC recommends the irrigation well should be abandon in accordance with local and state agency regulations when no longer in use, and prior to property development.
- ATC recommends the collection of soil matrix samples from the fields to evaluate the potential for elevated concentrations of pesticides or herbicides
- ATC recommends the oil stained soil near the irrigation well should be excavated and properly disposed of in accordance with local and state agency regulations.
- ATC recommends the abandoned tires along the northern boundary of the site should be removed from the site and disposed of in accordance with local and state agency regulations.

The judgments and conclusions described in this report pertain to the conditions judged to be present or applicable at the time the work was performed. Future conditions may differ from those described herein and this report is not intended for use in future evaluations of the site unless a consultant familiar with environmental assessments conducts an update. Use of this report is provided to Mill Creek Development for their exclusive use and shall be subject to the terms and conditions in the Proposal between Mill Creek Development and ATC Associates Inc. Any third party use of this report shall also be subject to the terms and conditions governing the work in the Proposal between Mill Creek Development and ATC Associates Inc. Any unauthorized release or misuse of this report shall be without risk or liability to ATC Associates Inc.

Certain information contained in this report may have been rightfully provided to ATC Associates Inc. by third parties or other outside sources. ATC Associates Inc. does not make any warranties or representations, whether expressed or implied, regarding the accuracy of such information, and shall not be held accountable or responsible in the event that any such inaccuracies are present, which inaccuracies were not readily discoverable by ATC in the exercise of reasonable care.

12.0 REFERENCES

Documents/Files:

American Society for Testing and Materials (ASTM), Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, ASTM Designation E1527-00: dated July 2000.

Environmental Data Resources (EDR), EDR-Radius Map with GeoCheck™, Mill Creek, Inquiry Number 01035271.1r, August 25, 2003.

Environmental Data Resources (EDR), Sanborn Map Report, Mill Creek, Inquiry Number 1035271.2s, August 25, 2003.

Department of Water Resources, Basin Plan Depth to Water Information, December 1998.

United States Department of the Interior, Geologic Survey, *Geology of the Fresh Groundwater Basin of the Central Valley, California, with Texture Maps and Sections, U.S. Geologic Survey Professional Paper 1401-C,* 1986.

Correspondence/Interviews:

San Joaquin County Building Department counter personnel

San Joaquin County Planning Department counter personnel

Maps:

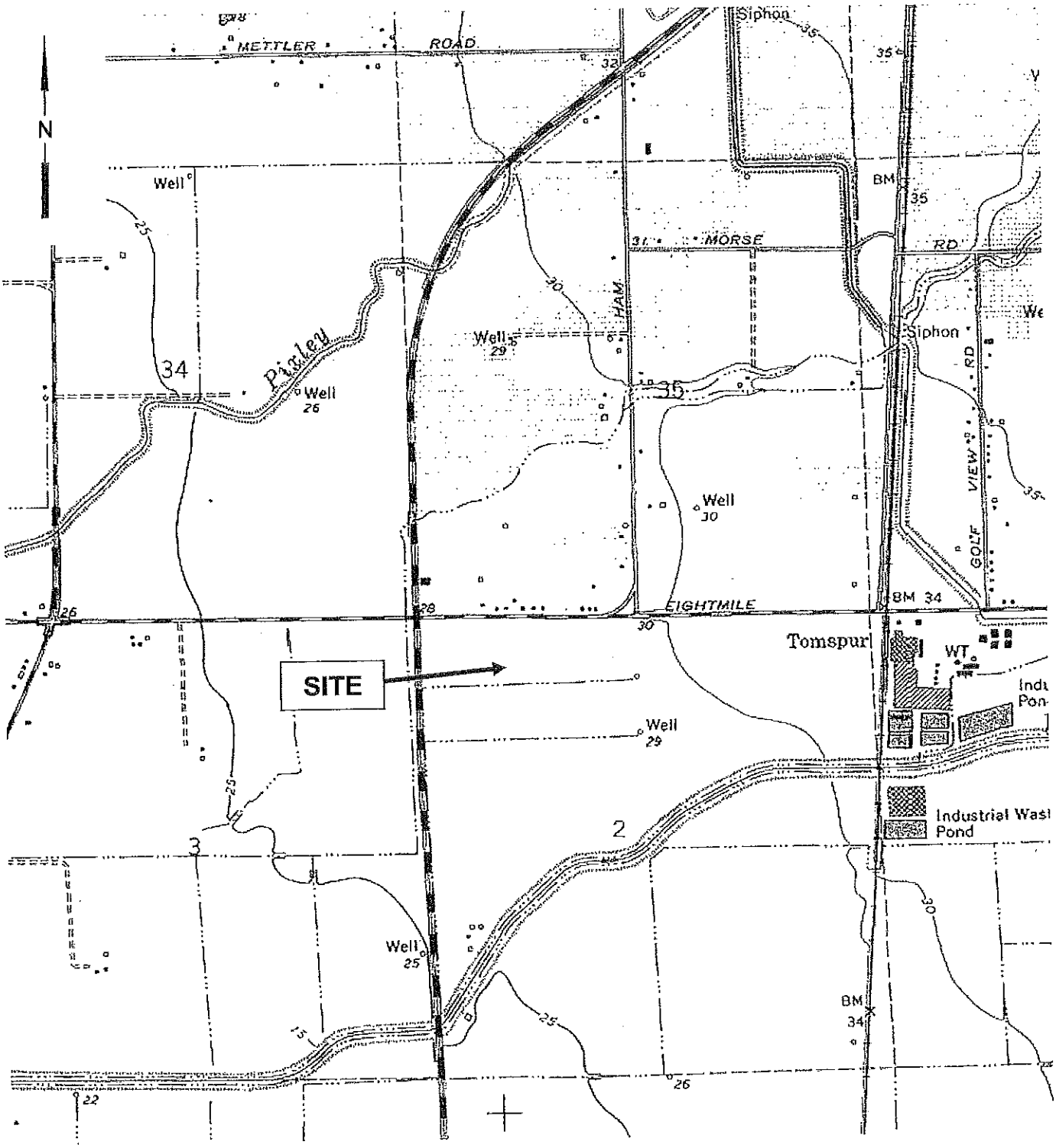
California Division of Oil and Gas, February 19, 1999, Map Numbers 606 and 611.

United States Geological Survey (USGS), 7.5-Minute Series Quadrangle Topographic Map, Lodi South, California dated: 1968 (photorevised 1976).

Aerial Photographs:

San Joaquin County Surveyor Office

Date/Year	Identification	Scale
1940	None	Unknown
1952	None	Unknown
1963	None	Unknown
1975	None	Unknown
1983	None	Unknown



SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP LODI SOUTH QUADRANGLE, CALIFORNIA, DATED 1968, PHOTOREVISED 1976.

ATC ASSOCIATES INC.
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(209) 579-2221

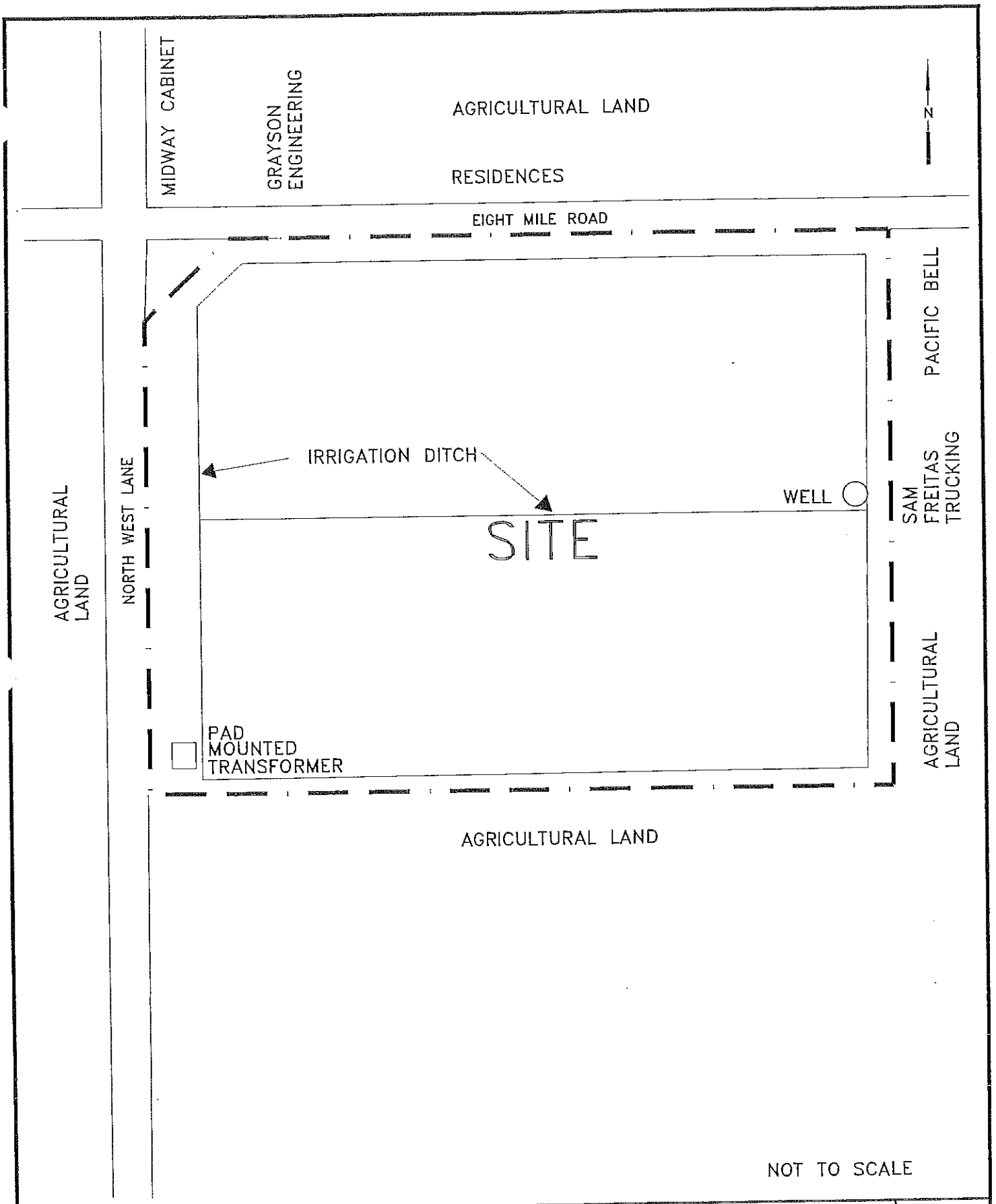
PROJECT NO: 54.25169.0003		
DESIGNED BY: JS	SCALE: 1:24,000	REVIEWED BY: JH
DRAWN BY: JS	DATE: 09/03	FILE: LOCATION

FIGURE 1

SITE LOCATION MAP

ASTM PHASE I ENVIRONMENTAL SITE ASSESSMENT

REAL PROPERTY
MILL CREEK DEVELOPMENT
10808 NORTH WEST LANE
STOCKTON, CALIFORNIA



VATC ASSOCIATES INC.

REAL PROPERTY
MILL CREEK DEVELOPMENT
10808 NORTH WEST LANE
STOCKTON, CALIFORNIA

SITE PLAN

PROJECT #: 54.25169.0003 | SEPTEMBER 2003

FIGURE 2

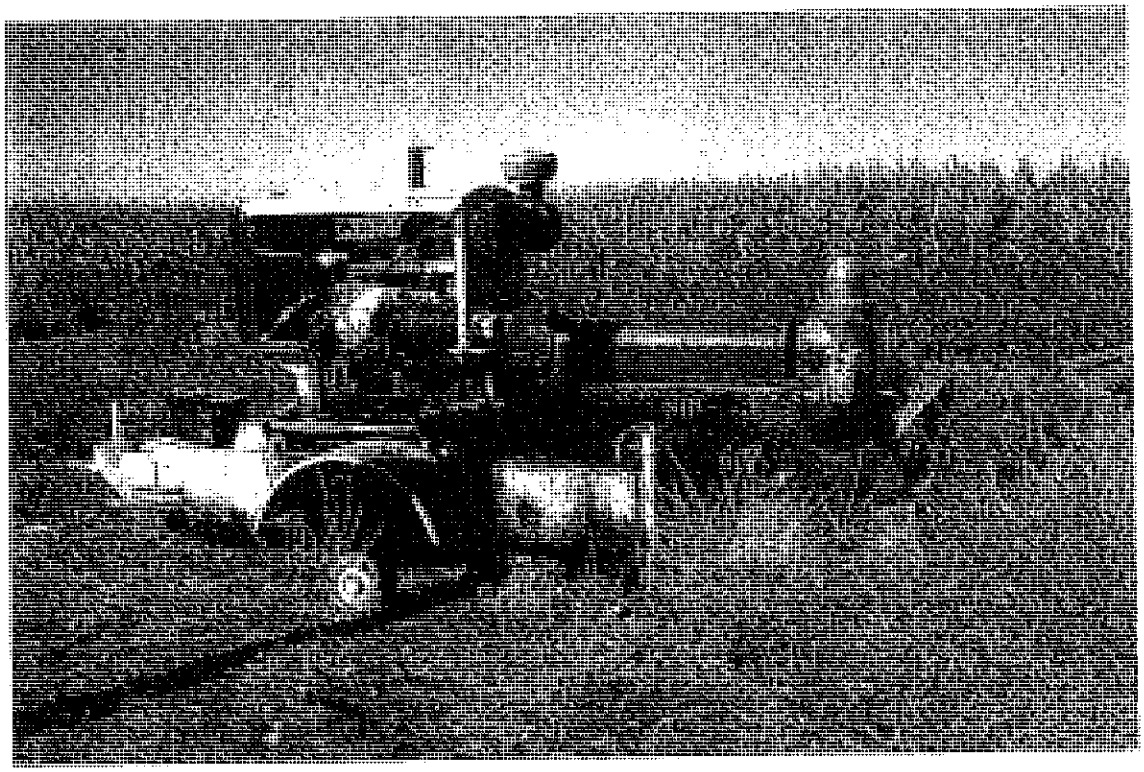


PHOTO 9: IRRIGATION WELL

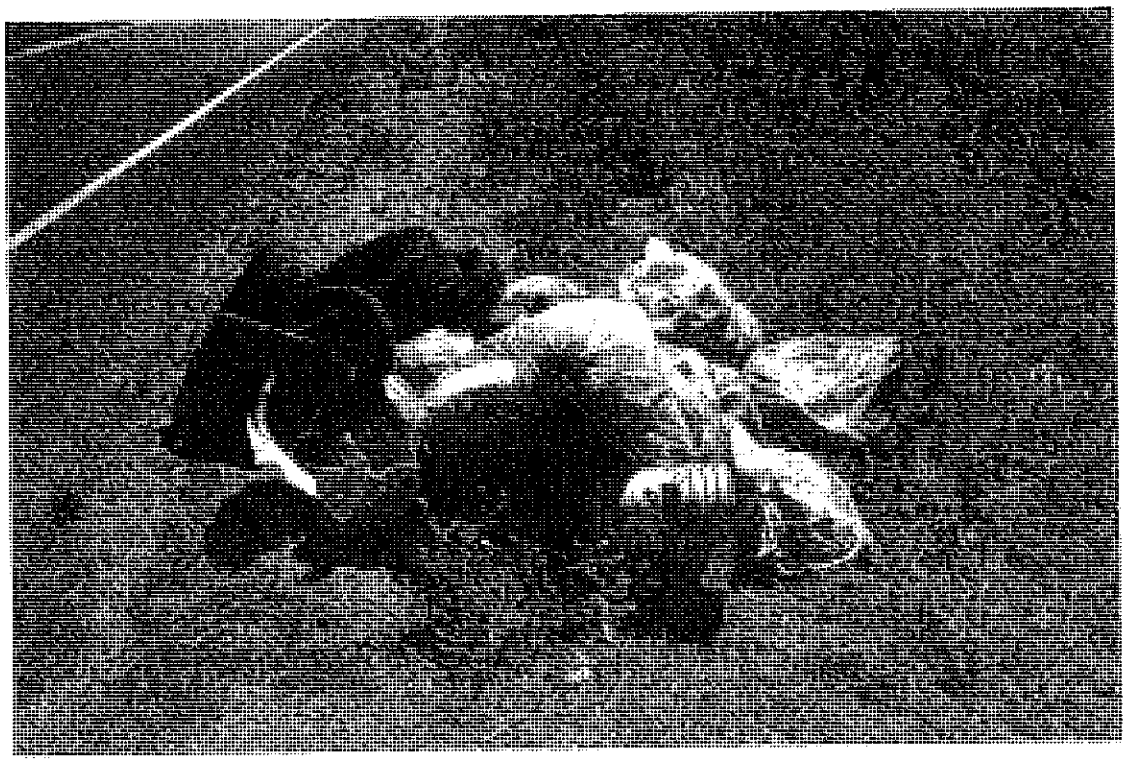


PHOTO 10: ABANDONED TIRES AND DEBRIS ALONG EIGHT MILE ROAD

Site Photographs
Mill Creek Development
10808 North West Lane
Stockton, California

PHOTO 1: SOUTHWEST CORNER OF SITE FACING EAST

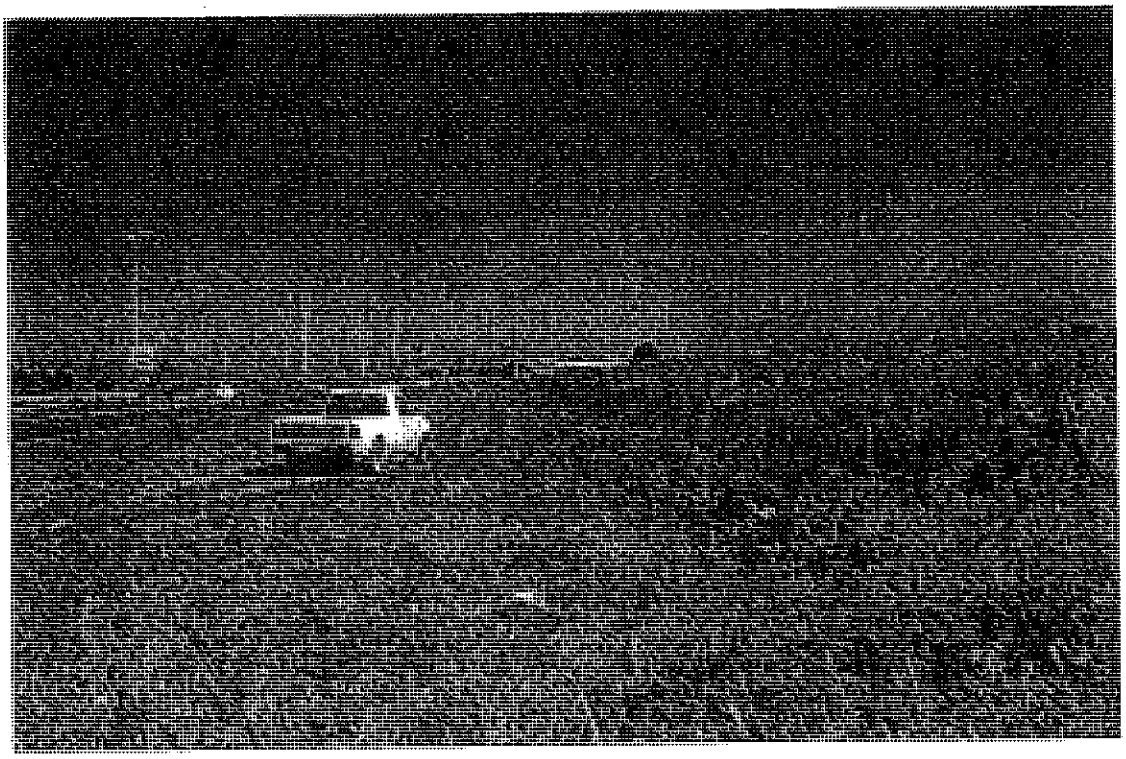


PHOTO 2: SOUTHWEST CORNER OF SITE FACING NORTH

Site Photographs
Mill Creek Development
10808 North West Lane
Stockton, California

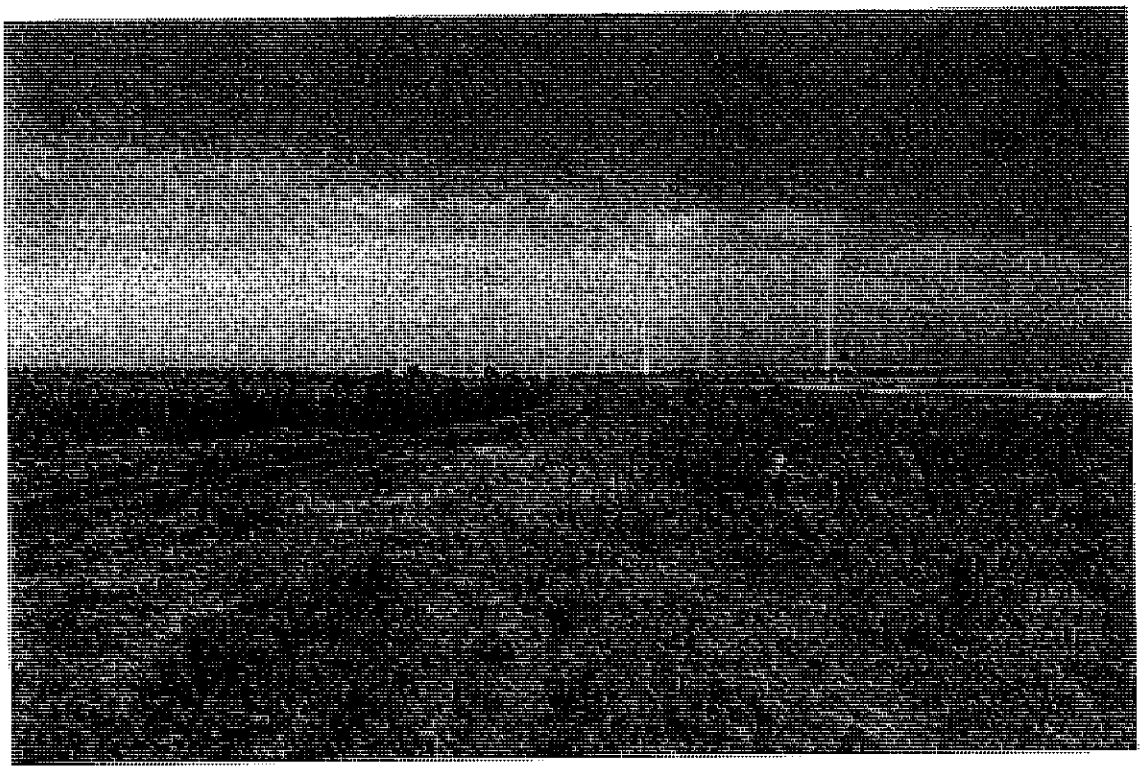


PHOTO 3: NORTHWEST CORNER OF SITE FACING SOUTH

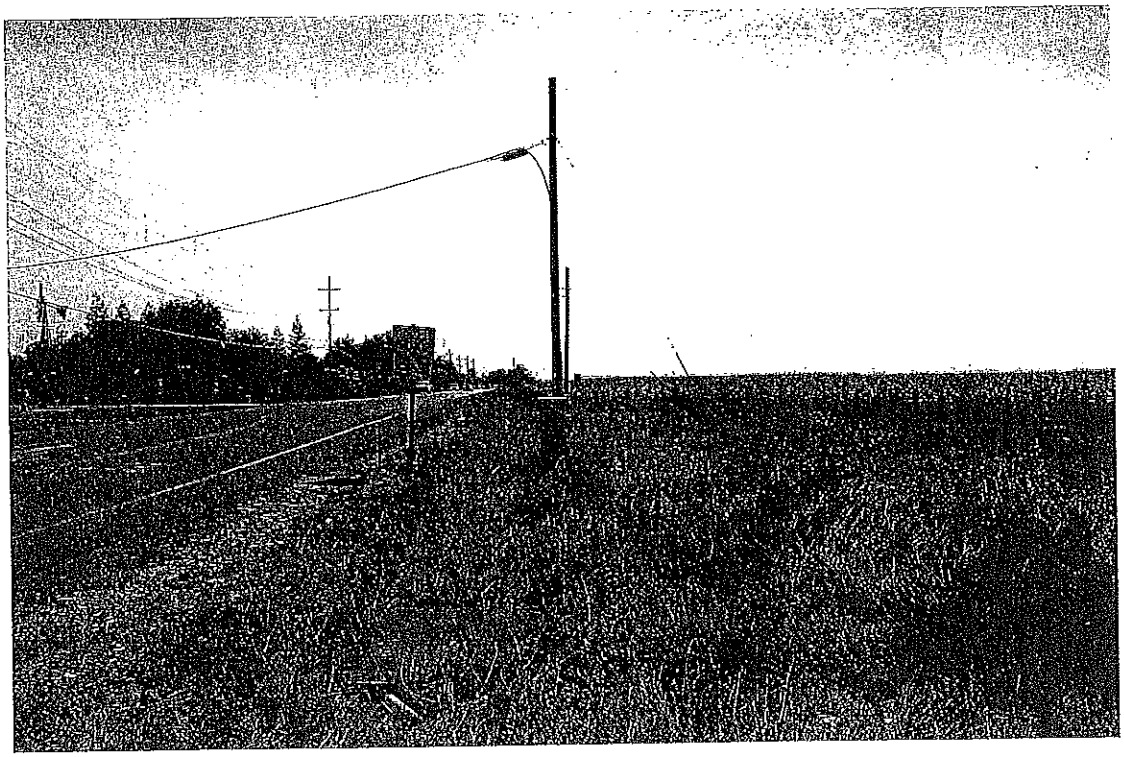


PHOTO 4: NORTHWEST CORNER OF SITE FACING EAST

Site Photographs
Mill Creek Development
10808 North West Lane
Stockton, California

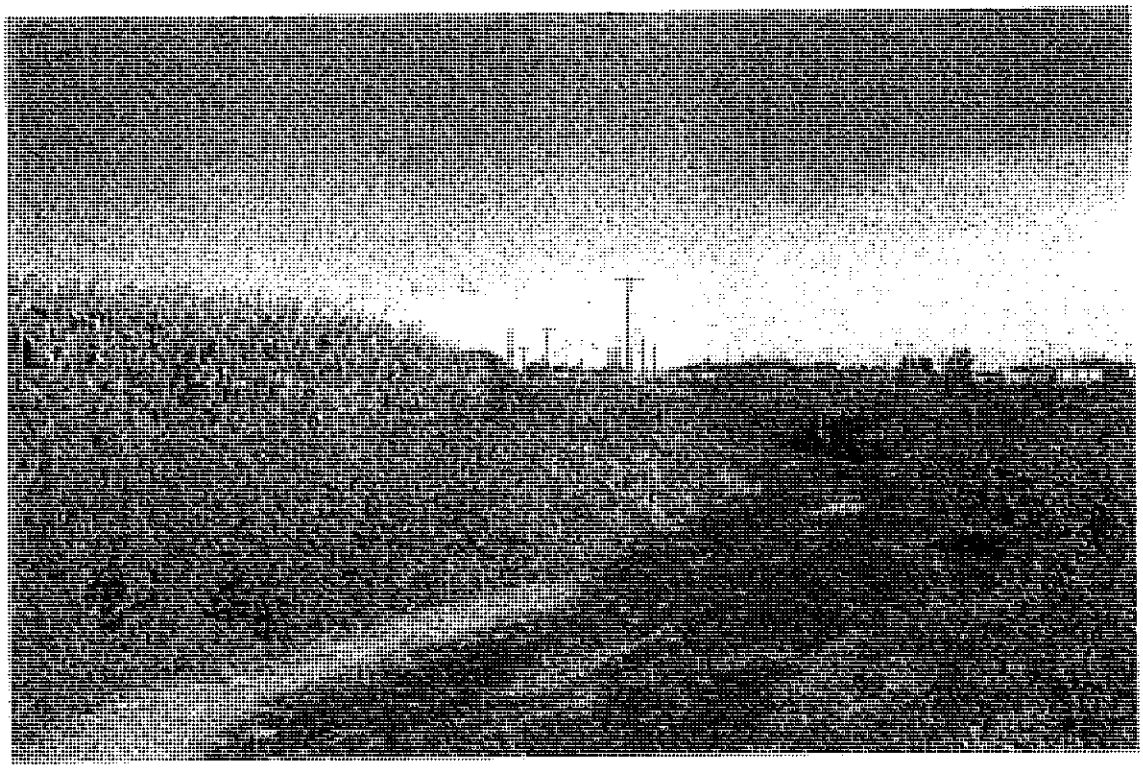


PHOTO 5: SOUTHEAST CORNER OF SITE FACING NORTH

PHOTO 6: SOUTHEAST CORNER OF SITE FACING WEST

Site Photographs
Mill Creek Development
10808 North West Lane
Stockton, California

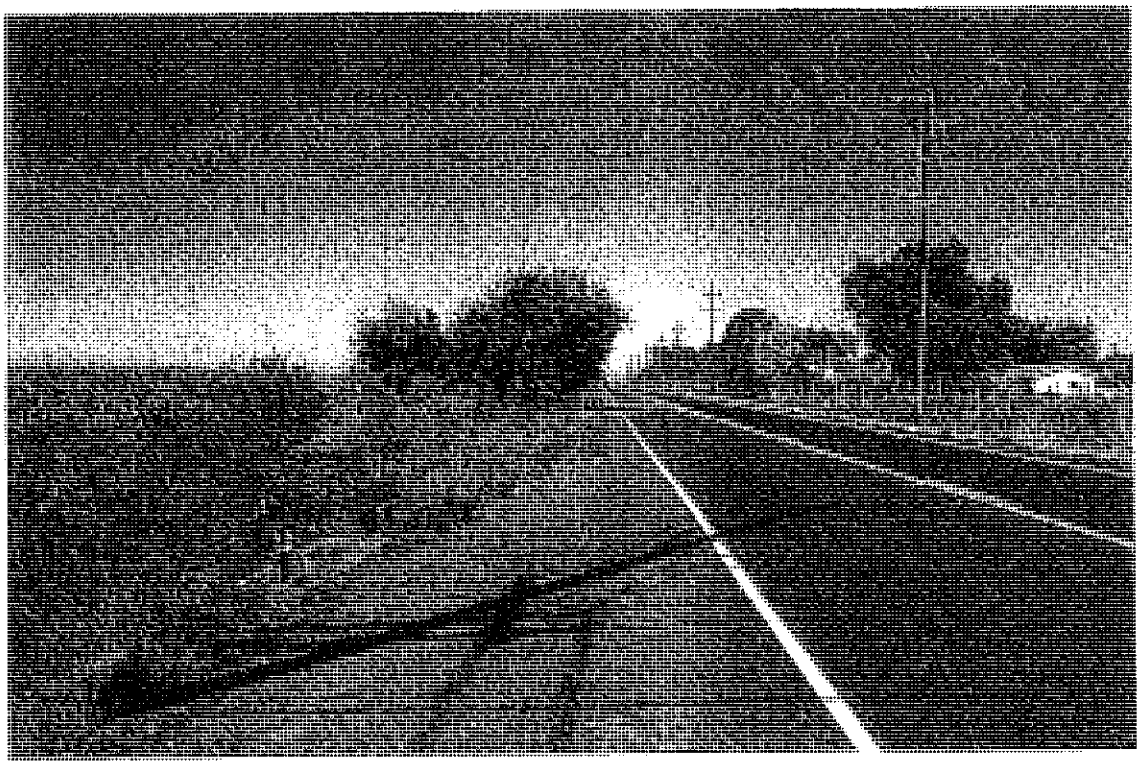


PHOTO 7: NORTHEAST CORNER OF SITE FACING WEST

PHOTO 8: NORTHEAST CORNER OF SITE FACING SOUTH

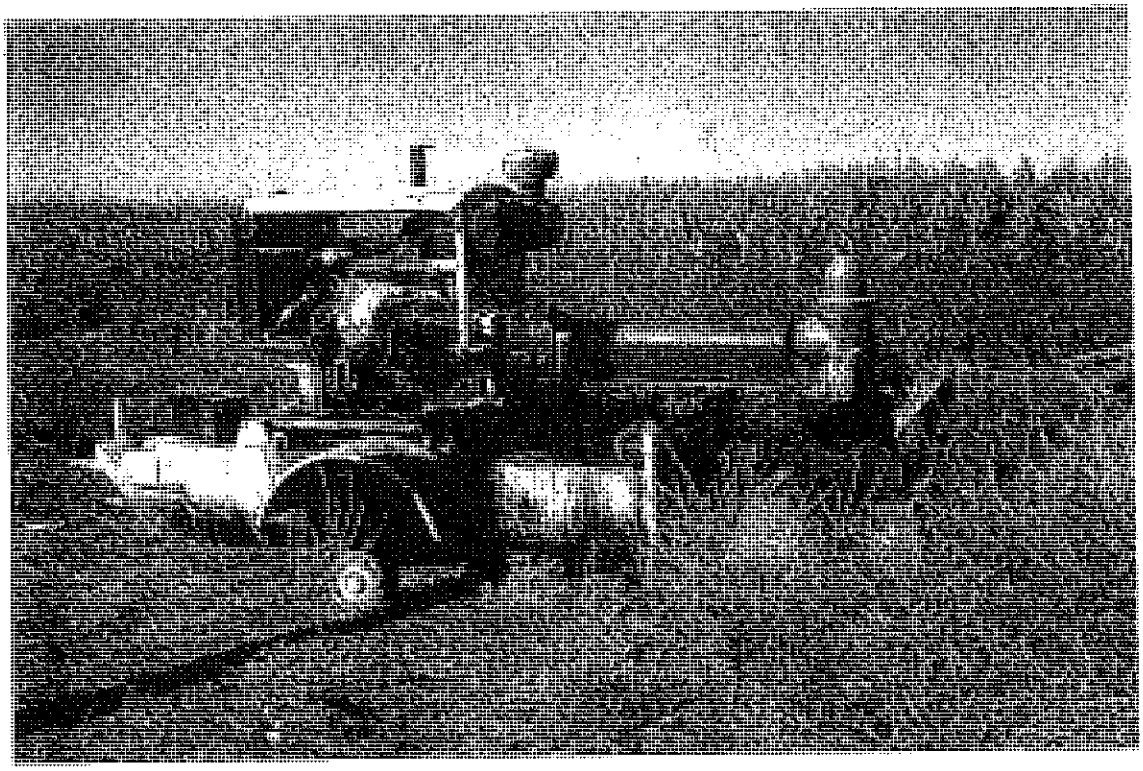
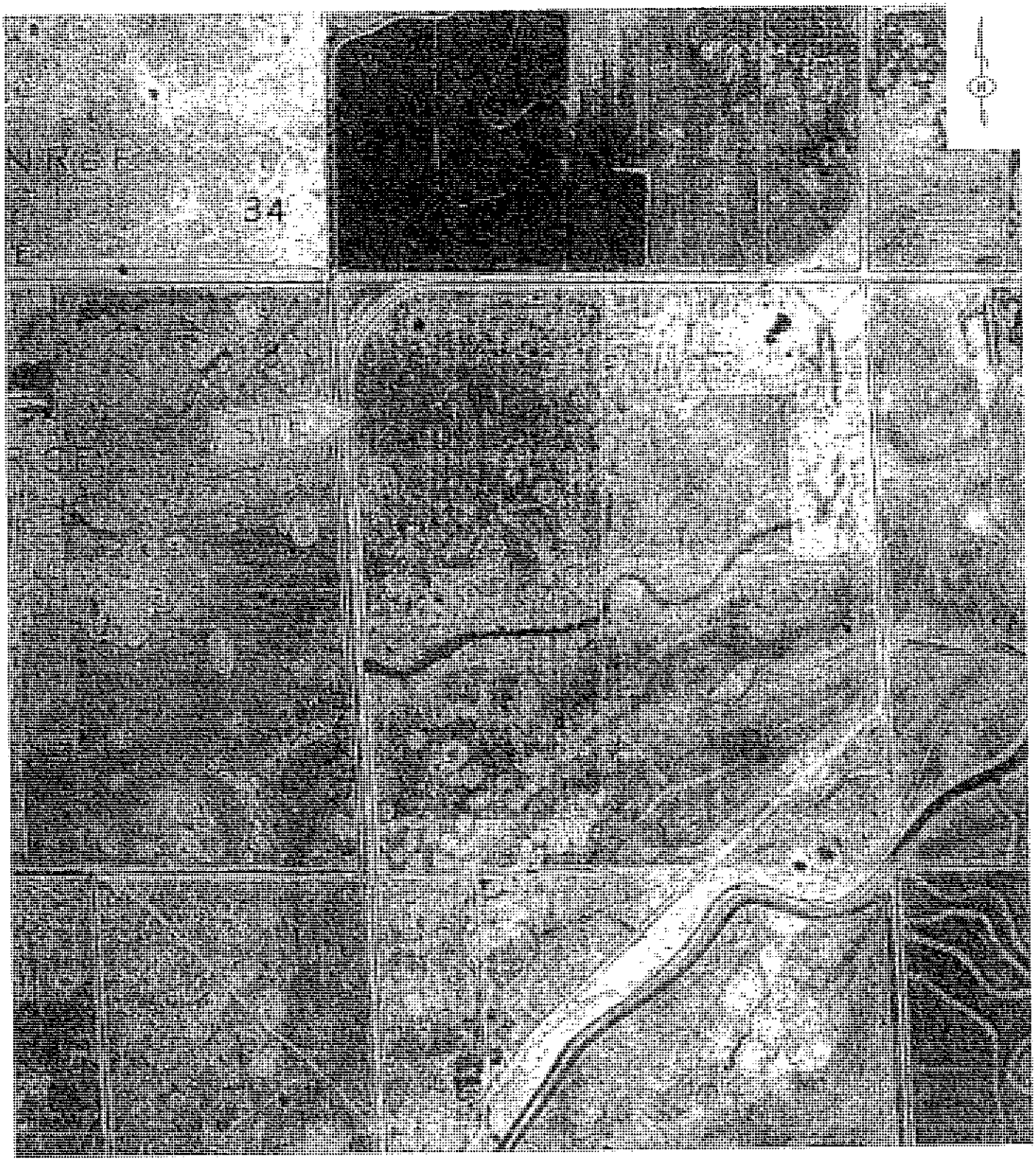


PHOTO 9: IRRIGATION WELL

PHOTO 10: ABANDONED TIRES AND DEBRIS ALONG EIGHT MILE ROAD



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AERIAL PHOTOGRAPH 1940

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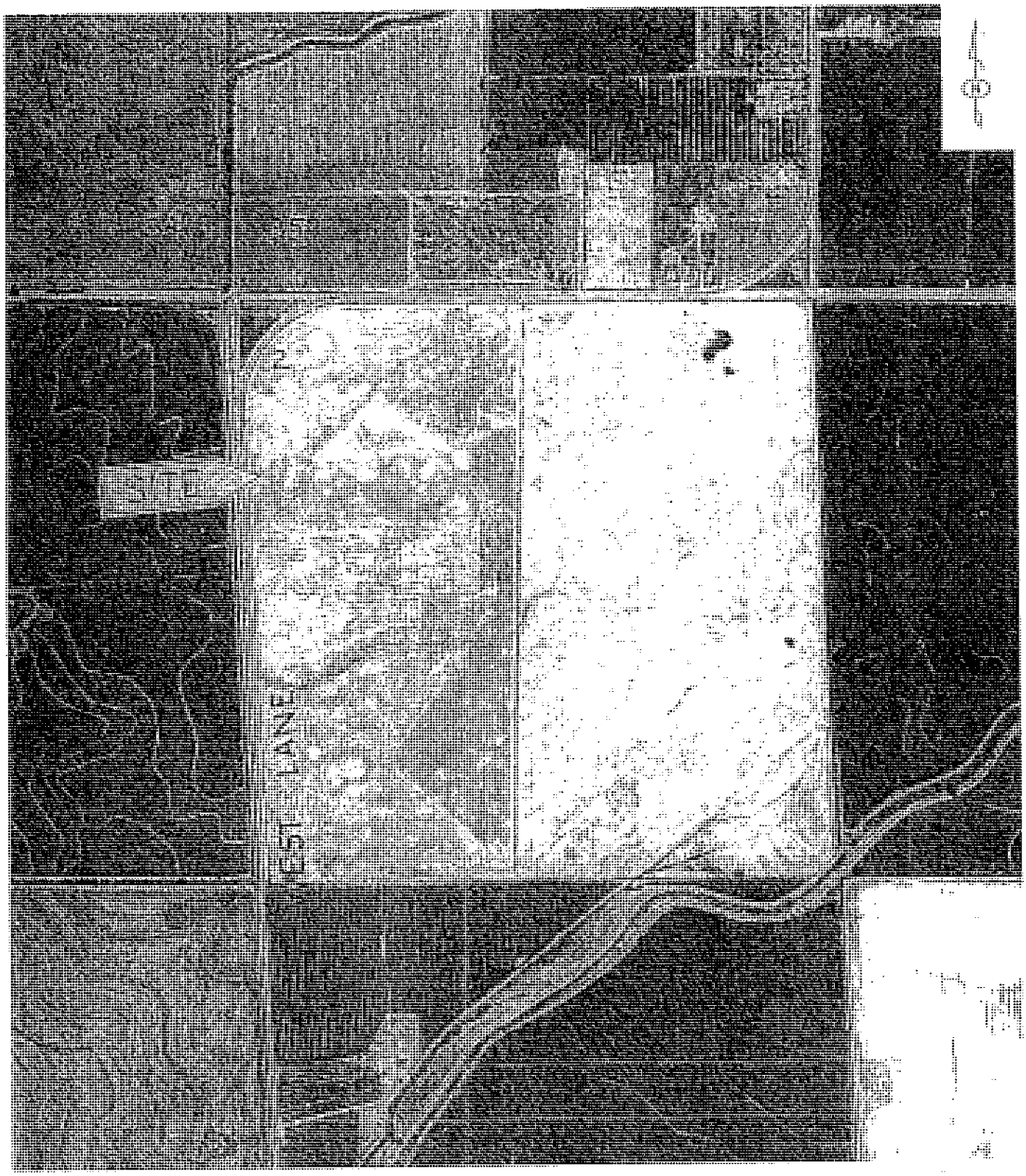

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AERIAL PHOTOGRAPH 1952

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AERIAL PHOTOGRAPH 1963

ASTM PHASE I ENVIRONMENTAL SITE ASSESSMENT

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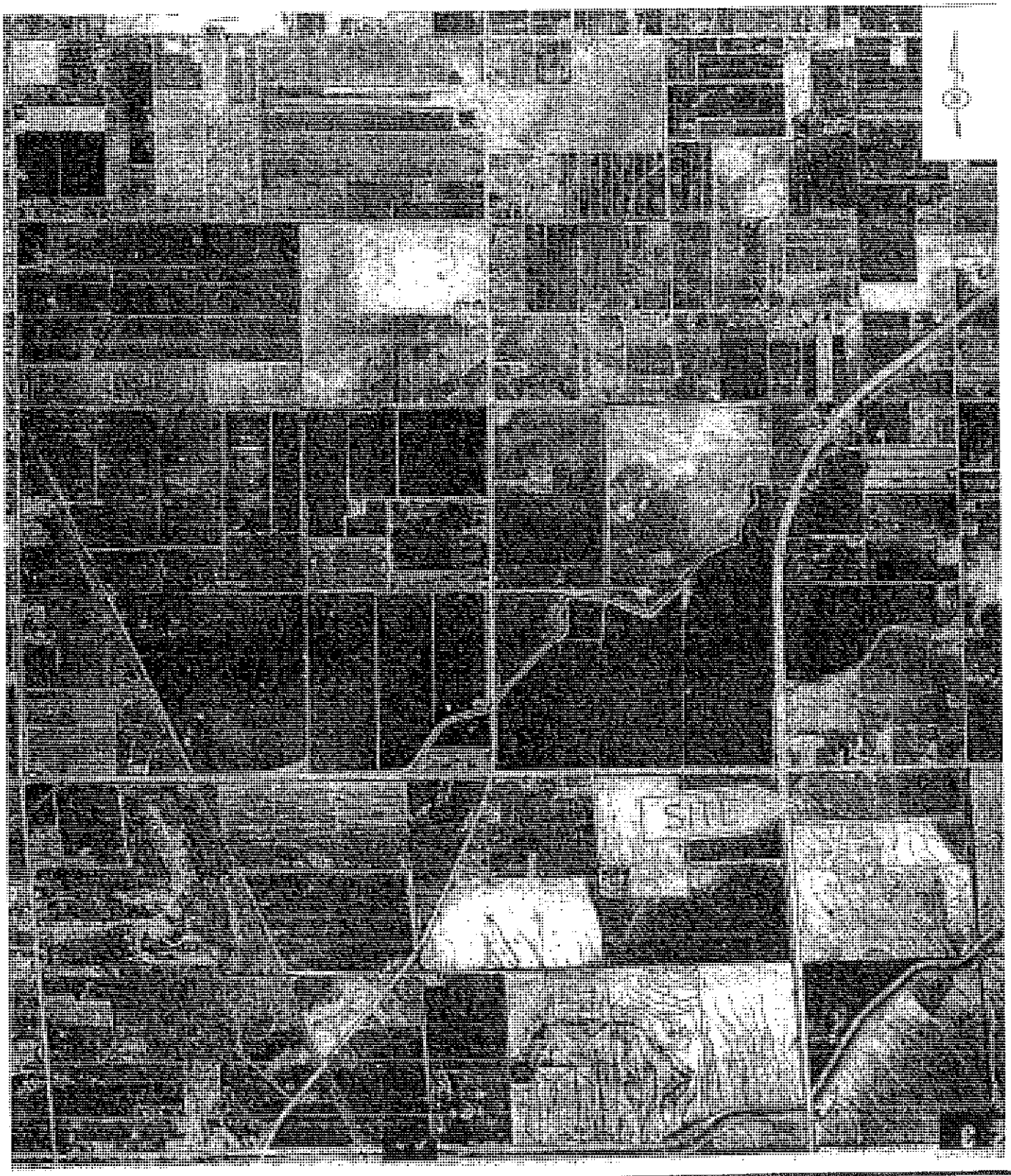
STOCKTON, CALIFORNIA



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AERIAL PHOTOGRAPH 1975

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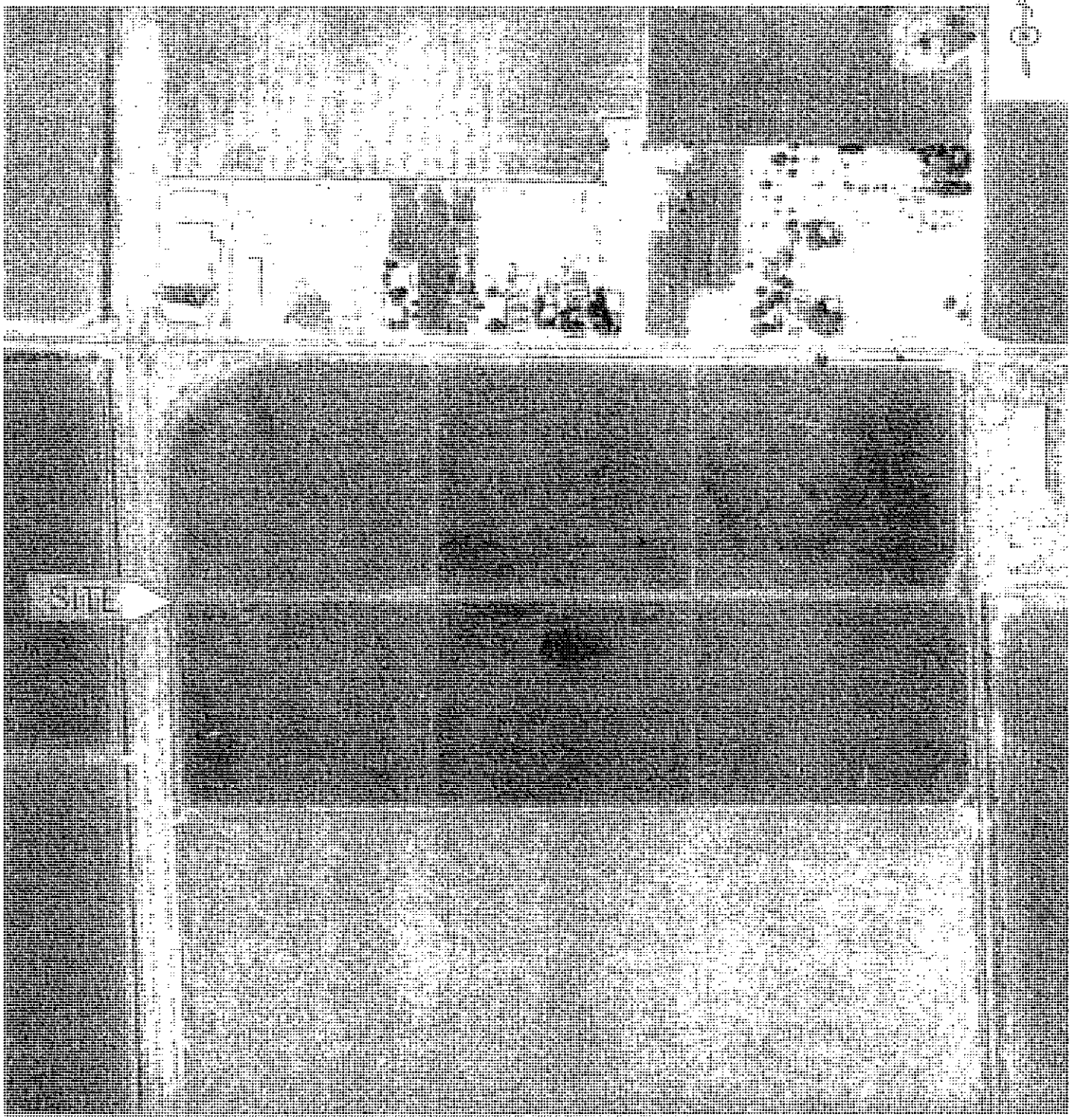
STOCKTON, CALIFORNIA



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PROJECT NO: 54.25169.0003		
DESIGNED BY: JS	SCALE: unknown	REVIEWED BY: JH
DRAWN BY: JS	DATE: 09/03	FILE: AERIAL1983

AERIAL PHOTOGRAPH 1983

ASTM PHASE I ENVIRONMENTAL SITE ASSESSMENT

REAL PROPERTY
MILL CREEK DEVELOPMENT
10808 NORTH WEST LANE
STOCKTON, CALIFORNIA

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1117 Lone Palm Ave-Suite B
Modesto, CA 95351

Customer Project: 54.25169.0003
1862589CUR 209-579-2221

Order Date: 8/25/2003 **Completion Date:** 8/25/2003 1:34:
Inquiry #: 1035271.2s
P.O. #: mod082203
Site Name: Mill Creek
Address: Eight Mile Road/West Lane
City/State: Stockton, CA 95212
Cross Streets:

This document reports that the largest and most complete collection of Sanborn fire insurance maps has been reviewed based on client-supplied information, and fire insurance maps depicting the target property at the specified address were not identified.

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The EDR Radius Map
with GeoCheck®

Mill Creek
Eight Mile Road/West Lane
Stockton, CA 95212

Inquiry Number: 01035271.1r

August 25, 2003

Environmental Data Resources, Inc.

The Source For Environmental Risk Management Data

3530 Post Road
Southport, Connecticut 06890

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

FORM-CUR

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the govemment records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-00. Search distances are per ASTM standard or custom distances requested by the user.

TARGET PROPERTY INFORMATION

ADDRESS

EIGHT MILE ROAD/WEST LANE
STOCKTON, CA 95212

COORDINATES

Latitude (North):	38.057000 - 38' 3' 25.2"
Longitude (West):	121.294600 - 121' 17' 40.6"
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	649622.7
UTM Y (Meters):	4213306.5
Elevation:	31 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property:	2438121-A3 LODI SOUTH, CA
Source:	USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the ASTM E 1527-00 search radius around the target property for the following databases:

FEDERAL ASTM STANDARD

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP..... CERCLIS No Further Remedial Action Planned
CORRACTS..... Corrective Action Report
RCRIS-TSD..... Resource Conservation and Recovery Information System
RCRIS-LQG..... Resource Conservation and Recovery Information System
ERNS..... Emergency Response Notification System

STATE ASTM STANDARD

AWP..... Annual Workplan Sites

EXECUTIVE SUMMARY

Cal-Sites	Calsites Database
Notify 65	Proposition 65 Records
Toxic Pits	Toxic Pits Cleanup Act Sites
SWF/LF	Solid Waste Information System
WMUDS/SWAT	Waste Management Unit Database
CA BOND EXP. PLAN	Bond Expenditure Plan
UST	List of Underground Storage Tank Facilities
VCP	Voluntary Cleanup Program Properties
INDIAN UST	Underground Storage Tanks on Indian Land
HIST UST	Hazardous Substance Storage Container Database

FEDERAL ASTM SUPPLEMENTAL

CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
Delisted NPL	National Priority List Deletions
FINDS	Facility Index System/Facility Identification Initiative Program Summary Report
HMIRS	Hazardous Materials Information Reporting System
MLTS	Material Licensing Tracking System
MINES	Mines Master Index File
NPL Liens	Federal Superfund Liens
PADS	PCB Activity Database System
DOD	Department of Defense Sites
RAATS	RCRA Administrative Action Tracking System
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
SSTS	Section 7 Tracking Systems
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

STATE OR LOCAL ASTM SUPPLEMENTAL

AST	Aboveground Petroleum Storage Tank Facilities
CLEANERS	Cleaner Facilities
CA WDS	Waste Discharge System
DEED	List of Deed Restrictions
NFA	No Further Action Determination
REF	Unconfirmed Properties Referred to Another Agency
SCH	School Property Evaluation Program
NFE	Properties Needing Further Evaluation
CA SLIC	Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

EDR PROPRIETARY HISTORICAL DATABASES

Coal Gas	Former Manufactured Gas (Coal Gas) Sites

BROWNFIELDS DATABASES

VCP	Voluntary Cleanup Program Properties

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

EXECUTIVE SUMMARY

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

FEDERAL ASTM STANDARD

RCRIS: The Resource Conservation and Recovery Act database includes selected information on sites that generate, store, treat, or dispose of hazardous waste as defined by the Act. The source of this database is the U.S. EPA.

A review of the RCRIS-SQG list, as provided by EDR, and dated 07/11/2003 has revealed that there is 1 RCRIS-SQG site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
PACIFIC BELL	*2300 E EIGHT MILE ROAD*	*1/8 - 1/4 WNW*	*A1*	*6*

STATE ASTM STANDARD

CHMIRS: The California Hazardous Material Incident Report System contains information on reported hazardous material incidents, i.e., accidental releases or spills. The source is the California Office of Emergency Services.

A review of the CHMIRS list, as provided by EDR, and dated 12/31/2002 has revealed that there is 1 CHMIRS site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
Not reported	3200 E. EIGHT MILE ROAD	1/2 - 1 E	4	9

CORTESE: This database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with USTs having a reportable release and all solid waste disposal facilities from which there is known migration. The source is the California Environmental Protection Agency/Office of Emergency Information.

A review of the Cortese list, as provided by EDR, has revealed that there is 1 Cortese site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
PACIFIC BELL	*2300 EIGHT MILE RD*	*1/8 - 1/4 WNW*	*3*	*8*

EXECUTIVE SUMMARY

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 04/02/2003 has revealed that there is 1 LUST site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
PACIFIC BELL	*2300 EIGHT MILE RD*	*1/8 - 1/4 WNW*	*3*	*8*

CA FID: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, has revealed that there is 1 CA FID UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
PACIFIC BELL (UE-708) STKN CA	2300 E EIGHT MILE RD	1/8 - 1/4 WNW	A2	7

STATE OR LOCAL ASTM SUPPLEMENTAL

HAZNET: The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000-1,000,000 annually, representing approximately 350,000-500,000 shipments. Data from non-California manifests & continuation sheets are not included at the present time. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, & disposal method. The source is the Department of Toxic Substance Control is the agency

A review of the HAZNET list, as provided by EDR, has revealed that there is 1 HAZNET site within approximately 0.25 miles of the target property.

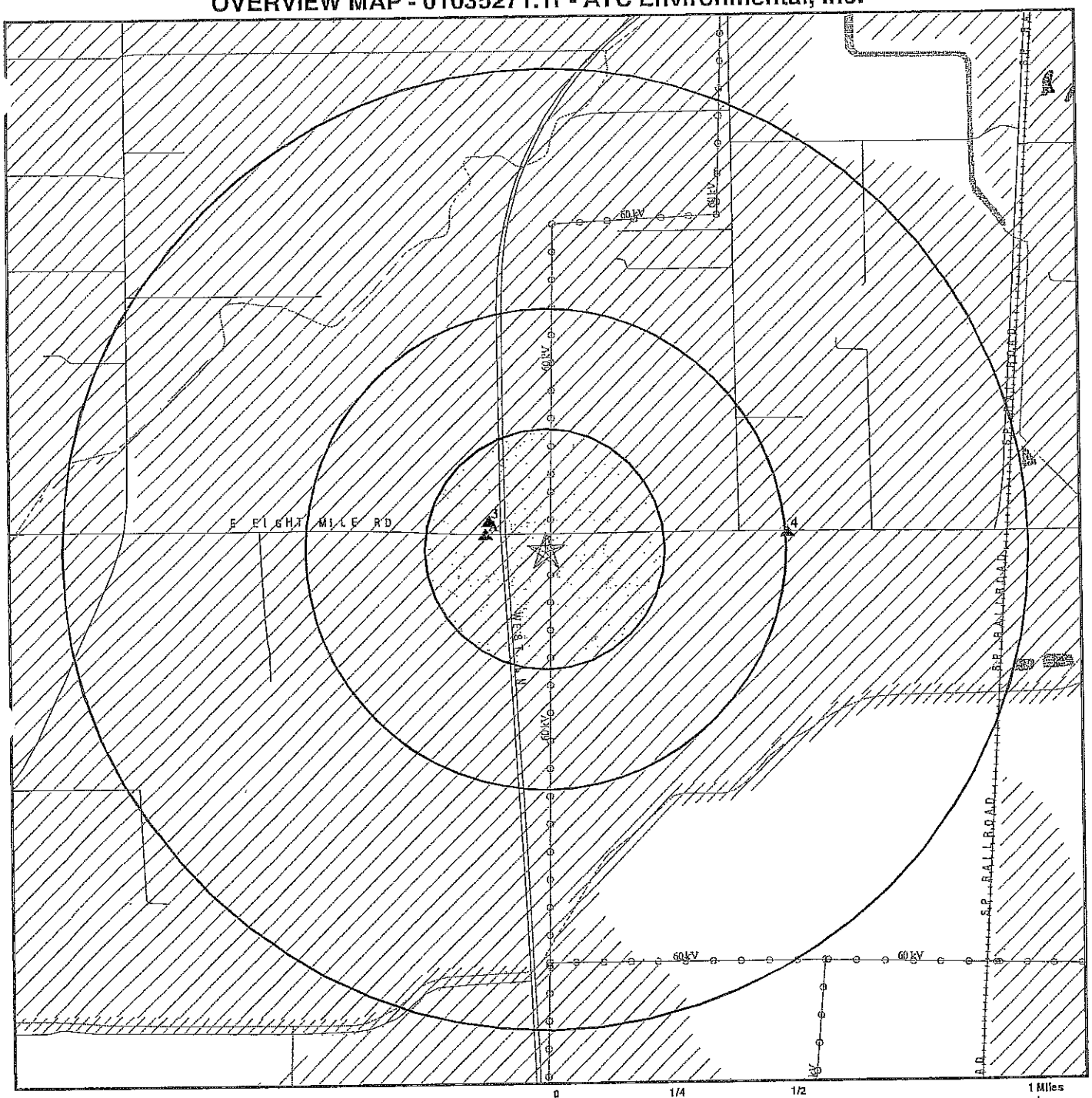
Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
PACIFIC BELL	*2300 E EIGHT MILE ROAD*	*1/8 - 1/4 WNW*	*A1*	*6*

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
MARAUDER CLEANERS	CLEANERS
CHARLEY JACOBS	LUST, Cortese
SPEEDY FOODS	LUST, Cortese
THE FUEL MART	LUST, Cortese
THE AUTO FACTORY	LUST, Cortese
DURANGO TIRE (CHP SITE)	SWF/LF
VICTOR MEATS	LUST
WEST LANE MARKET (WLM)	LUST
MORADA CHEVRON	UST
ARCO STATION #595*	UST
ROSA RANCH	HIST UST
KURTZ'S FUEL MART	HIST UST
P G & E/TERMINOUS SUBSTATION	HAZNET
CESAR'S TRUCKING	HAZNET
ANTELOPE MOVING AND STORAGE	HAZNET
MCKEE FOODS CORP	HAZNET
SIGNATURE FRUIT (TOMATO) INC PLANT 4	HAZNET
PACIFIC MOTOR TRANSPORT PACER DIVISION	HAZNET
AUTO FACTORY	HAZNET
REY BAGLIETTO/FRANK RAUZI	HAZNET
FRONTIER PERFORMANCE LUBRICANTS INC.	HAZNET
WALMART STORES INC	HAZNET
BAGLEY ENTERPRISES,INC DBA MORADA CHEVRO	HAZNET
FULL CIRCLE RESTORATION	HAZNET
SAN JOAQUIN FLOOD CONTROL AGENCY	HAZNET
UNION PACIFIC RAILROAD	HAZNET
CALIF WATER SVC CO STK TANK 8	HAZNET
DR LAURENT VIEN DDS	HAZNET
CHEVRON STATION NO 200764	RCRIS-SQG, FINDS
STOCKTON REDEVEL. AGENCY - SOUTHSHORE PARCELS	CA SLIC
GUARANTY FEDERAL BANK**	CA SLIC
VOLPI FARMS	CA SLIC
RIO CALAVERAS ELEMENTARY SCHOOL	SCH

OVERVIEW MAP - 01035271.1r - ATC Environmental, Inc.



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	Mill Creek	CUSTOMER:	ATC Environmental, Inc.
ADDRESS:	Eight Mile Road/West Lane	CONTACT:	John Sellman
CITY/STATE/ZIP:	Stockton CA 95212	INQUIRY #:	01035271.1r
LAT/LONG:	38.0570 / 121.2946	DATE:	August 25, 2003 9:30 am

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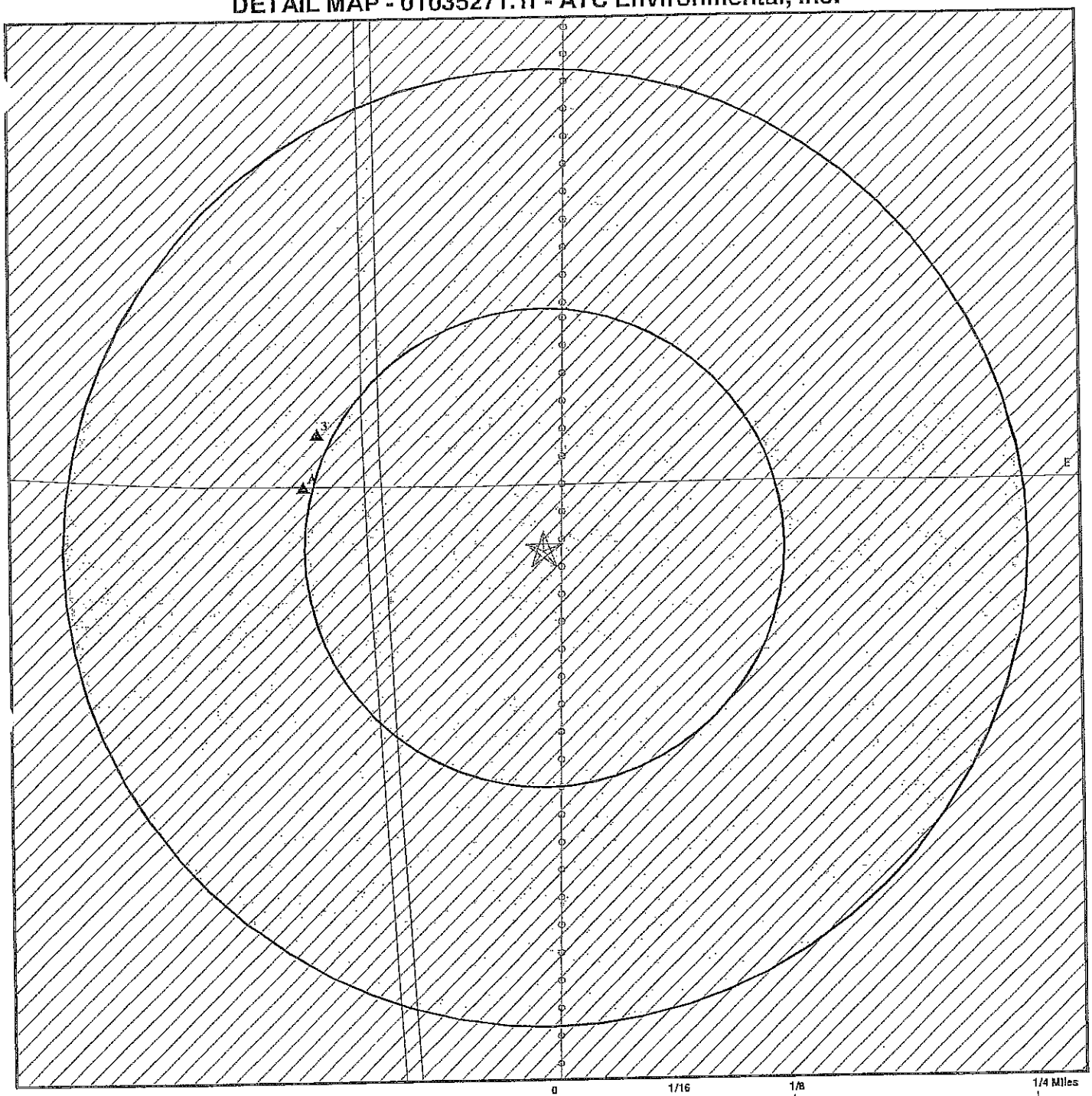
DETAIL MAP - 01035271.1r - ATC Environmental, Inc.



- ☆ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Areas of Concern

TARGET PROPERTY:	Mill Creek	CUSTOMER:	ATC Environmental, Inc.
ADDRESS:	Eight Mile Road/West Lane	CONTACT:	John Sellman
CITY/STATE/ZIP:	Stockton CA 95212	INQUIRY #:	01035271.1r
LAT/LONG:	38.0570 / 121.2946	DATE:	August 25, 2003 9:30 am

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MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FEDERAL ASTM STANDARD								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.250	0	0	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
RCRIS-TSD		0.500	0	0	0	NR	NR	0
RCRIS Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRIS Sm. Quan. Gen.		0.250	0	1	NR	NR	NR	1
ERNS		TP	NR	NR	NR	NR	NR	0
STATE ASTM STANDARD								
AWP		1.000	0	0	0	0	NR	0
Cal-Sites		1.000	0	0	0	0	NR	0
CHMIRS		1.000	0	0	0	1	NR	1
Cortese		1.000	0	1	0	0	NR	1
Notify 65		1.000	0	0	0	0	NR	0
Toxic Pits		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
WMUDS/SWAT		0.500	0	0	0	NR	NR	0
LUST		0.500	0	1	0	NR	NR	1
CA Bond Exp. Plan		1.000	0	0	0	0	NR	0
UST		0.250	0	0	NR	NR	NR	0
VCP		0.500	0	0	0	NR	NR	0
INDIAN UST		0.250	0	0	NR	NR	NR	0
CA FID UST		0.250	0	1	NR	NR	NR	1
HIST UST		0.250	0	0	NR	NR	NR	0
FEDERAL ASTM SUPPLEMENTAL								
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
NPL Liens		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
STATE OR LOCAL ASTM SUPPLEMENTAL								
AST		TP	NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CLEANERS		0.250	0	0	NR	NR	NR	0
CA WDS		TP	NR	NR	NR	NR	NR	0
DEED		TP	NR	NR	NR	NR	NR	0
NFA		0.250	0	0	NR	NR	NR	0
REF		0.250	0	0	NR	NR	NR	0
SCH		0.250	0	0	NR	NR	NR	0
NFE		0.250	0	0	NR	NR	NR	0
CA SLIC		0.500	0	0	0	NR	NR	0
HAZNET		0.250	0	1	NR	NR	NR	1
EDR PROPRIETARY HISTORICAL DATABASES								
Coal Gas		1.000	0	0	0	0	NR	0
BROWNFIELDS DATABASES								
VCP		0.500	0	0	0	NR	NR	0

NOTES:

AQUIFLOW - see EDR Physical Setting Source Addendum

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

A1 WNW 1/8-1/4 686 ft. — **PACIFIC BELL, 2300 E EIGHT MILE ROAD, STOCKTON, CA 95205** — RCRIS-SQG, FINDS, HAZNET — **1000251665, CAT080026420**

Site 1 of 2 in cluster A

Relative: Equal

Actual: 31 ft.

RCRIS:

Owner:	NOT REQUIRED (415) 555-1212
EPA ID:	CAT080026420
Contact:	Not reported
Classification:	Small Quantity Generator
TSDF Activities:	Not reported
Violation Status:	No violations found

FINDS:

Other Pertinent Environmental Activity Identified at Site:
- Facility Registry System (FRS)
- Resource Conservation and Recovery Act Information system (RCRAINFO)

HAZNET:

Gepaid:	CAT080026420
TSD EPA ID:	CAT000613968
Gen County:	San Joaquin
Tsd County:	Stanislaus
Tons:	.1041
Waste Category:	Liquids with halogenated organic compounds > 1000 mg/l
Disposal Method:	Transfer Station
Contact:	PACIFIC BELL
Telephone:	(925) 823-6161
Mailing Address:	RM 3E000 SAN RAMON, CA 94583 - 0995
County	San Joaquin

Gepaid:	CAT080026420
TSD EPA ID:	CAD980887418
Gen County:	San Joaquin
Tsd County:	1
Tons:	4.7121
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Contact:	PACIFIC BELL
Telephone:	(925) 823-6161
Mailing Address:	RM 3E000 SAN RAMON, CA 94583 - 0995
County	San Joaquin

PACIFIC BELL (Continued) 1000251665

Gepaid: CAT080026420
TSD EPA ID: CAD980887418
Gen County: San Joaquin
Tsd County: 1
Tons: .3336
Waste Category: Aqueous solution with less than 10% total organic residues
Disposal Method: Transfer Station
Contact: PACIFIC BELL
Telephone: (925) 823-6161
Mailing Address: RM 3E000
SAN RAMON, CA 94583 - 0995
County San Joaquin

Gepaid: CAT080026420
TSD EPA ID: CAT000613968
Gen County: San Joaquin
Tsd County: Stanislaus
Tons: .3913
Waste Category: Liquids with halogenated organic compounds > 1000 mg/l
Disposal Method: Transfer Station
Contact: PACIFIC BELL
Telephone: (925) 823-6161
Mailing Address: RM 3E000
SAN RAMON, CA 94583 - 0995
County San Joaquin

Gepaid: CAT080026420
TSD EPA ID: CAD980887418
Gen County: San Joaquin
Tsd County: 1
Tons: 7.2975
Waste Category: Waste oil and mixed oil
Disposal Method: Not reported
Contact: PACIFIC BELL
Telephone: (925) 823-6161
Mailing Address: RM 3E000
SAN RAMON, CA 94583 - 0995
County San Joaquin

The CA HAZNET database contains 46 additional records for this site.
Please click here or contact your EDR Account Executive for more information.

A2 WNW 1/8-1/4 686 ft. | **PACIFIC BELL (UE-708) STKN CA** | **CA FID UST** | **S101593171** / **N/A**
2300 E EIGHT MILE RD
STOCKTON, CA 95240

Site 2 of 2 in cluster A

Relative: Equal

Actual: 31 ft.

PACIFIC BELL (UE-708) STKN CA (Continued) **S101593171**

FID:

Facility ID:	39003273	Regulate ID:	Not reported
Reg By:	Active Underground Storage Tank Location		
Cortese Code:	Not reported	SIC Code:	Not reported
Status:	Active	Facility Tel:	Not reported
Mail To:	Not reported 1445 VAN NESS #236 STOCKTON, CA 95240		
Contact:	Not reported	Contact Tel:	Not reported
DUNs No:	Not reported	NPDES No:	Not reported
Creation:	10/22/93	Modified:	00/00/00
EPA ID:	Not reported		
Comments:	Not reported		

---

3 WNW 1/8-1/4 702 ft. **PACIFIC BELL**
2300 EIGHT MILE RD
STOCKTON, CA 95205

LUST **S104403565**
Cortese **N/A**

Relative: Equal

Actual: 31 ft.

State LUST:

Cross Street:	Not reported
Qty Leaked:	Not reported
Case Number	390916
Reg Board:	0
Chemical:	Gasoline
Lead Agency:	Local Agency
Local Agency :	0
Case Type:	Soil only
Status:	Case Closed
Abate Method:	Excavate and Dispose - remove contaminated soil and dispose in approved site
Review Date:	05/02/1996
Confirm Leak:	05/02/1996
Workplan:	Not reported
Prelim Assess:	Not reported
Pollution Char:	Not reported
Remed Plan:	Not reported
Remed Action:	Not reported
Monitoring:	Not reported
Close Date:	11/27/1996
Release Date:	12/02/1996
Cleanup Fund Id :	Not reported
Discover Date :	05/02/1996
Enforcement Dt :	1/1/65
Enf Type:	None Taken
Enter Date :	06/10/1996
Funding:	Not reported
Staff Initials:	MAR
How Discovered:	Tank Closure
How Stopped:	Not reported
Interim :	Yes
Leak Cause:	Not reported
Leak Source:	Not reported
MTBE Date :	/ /
Max MTBE GW :	0 Parts per Billion
MTBE Tested:	Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
Priority:	Medium priority
Local Case # :	1893
Beneficial:	Not reported
Staff :	JLB
GW Qualifier :	Not reported

PACIFIC BELL (Continued) S104403565

Max MTBE Soil : Not reported
Soil Qualifier : Not reported
Hydr Basin #: Not reported
Operator : Not reported
Oversight Prgm: Local Oversight Program UST
Oversight Prgm : LOP
Review Date : 12/02/1996
Stop Date : / /
Work Suspended :No
Responsible PartyPACIFIC BELL
RP Address: PO BOX 5095, RM1N201, SAN RAMON, CA 94583
Global Id: T0607700738
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 0
Mtbe Fuel: 1
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

LUST Region 5:
Substance: GASOLINE
Case Type: Soil only
Program: Local Oversite Program - SWB Sponsored Program
Staff Initials: JLB Case Number: 390916
Status: Case Closed
MTBE Code: N/A
Lead Agency: Local

CORTESE:
Reg Id: 390916
Region: CORTESE
Reg By: Leaking Underground Storage Tanks

---

4 **CHMIRS** **S100217704**
East **3200 E. EIGHT MILE ROAD** **N/A**
1/2-1 **STOCKTON, CA 95201**
2668 ft.

Relative: **Higher**

Actual: **32 ft.**

CHMIRS:

OES Control Number:	8907872
Chemical Name:	Not reported
Extent of Release:	Not reported
Property Use:	Manufacturing
Incident Date:	12-SEP-89
Date Completed:	12-SEP-89
Time Completed :	1030
Agency Id Number :	39807
Agency Incident Number :	99999
OES Incident Number :	8907872
Time Notified :	930
Surrounding Area :	650
Estimated Temperature :	80
Property Management :	P
More Than Two Substances Involved? :	N
Special Studies 1 :	Not reported
Special Studies 2 :	Not reported
Special Studies 3 :	Not reported

S100217704

(Continued)

Special Studies 4 :	Not reported
Special Studies 5 :	Not reported
Special Studies 6 :	Not reported
Responding Agency Personel # Of Injuries :	0
Responding Agency Personel # Of Fatalities :	0
Resp Agncy Personel # Of Decontaminated :	0
Others Number Of Decontaminated :	3
Others Number Of Injuries :	3
Others Number Of Fatalities :	0
Vehicle Make/year :	Not reported
Vehicle License Number :	Not reported
Vehicle State :	Not reported
Vehicle Id Number :	Not reported
CA/DOT/PUC/ICC Number :	Not reported
Company Name :	Not reported
Reporting Officer Name/ID :	DAVID CARAVEO
Report Date :	13-SEP-89
Comments :	Not reported
Facility Telephone Number :	209 944-2116
Waterway Involved :	Not reported
Waterway :	Not reported
Spill Site :	Not reported
Cleanup By :	Not reported
Containment :	Not reported
What Happened :	Not reported
Type :	Not reported
Other :	Not reported
Chemical 1 :	Not Reported
Chemical 2 :	Not Reported
Chemical 3 :	Not Reported
Date/Time :	Not reported
Evacuations :	Not reported

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
LINDEN	U001603857	ROSA RANCH	EIGHT MILE RD. - 1 MI. E. OF T	95212	HIST UST
LODI	S104164855	CHARLEY JACOBS	13889 HWY 12 W	95240	LUST, Cortese
LODI	S105084006	P G & E/TERMINOUS SUBSTATION	8735 HWY 12	95242	HAZNET
LODI	S104735713	VICTOR MEATS	18846 HWY 99 N	95240	LUST
STOCKTON	S104572108	CESAR'S TRUCKING	HWY 4 1/2 MI W OF STOCKTON		HAZNET
STOCKTON	S103678858	ANTELOPE MOVING AND STORAGE	HIGHWAY 4 / WILSON WAY		HAZNET
STOCKTON	S105084154	MCKEE FOODS CORP	HWY 4 @ WILSON WAY		HAZNET
STOCKTON	S105725542	SIGNATURE FRUIT (TOMATO) INC PLANT 4	3200 E 8 MILE RD / RURAL RT 2	95212	HAZNET
STOCKTON	S105087601	PACIFIC MOTOR TRANSPORT PACER DIVISION	HWY 99 SOUTH BOUND SOUTH OF HWY 4	95210	HAZNET
STOCKTON	S103066342	SPEEDY FOODS	8200 HWY 99 N	95212	LUST, Cortese
STOCKTON	S103665999	AUTO FACTORY	5942 HWY 99 FRONTAGE	95212	HAZNET
STOCKTON	S103984202	REY BAGLIETTO/FRANK RAUZI	8200 HWY 99	95212	HAZNET
STOCKTON	S105026786	THE FUEL MART	10876 HWY 99 N	95212	LUST, Cortese
STOCKTON	S105026789	THE AUTO FACTORY	5942 HWY 99 E	95212	LUST, Cortese
STOCKTON	U003785864	MORADA CHEVRON	10876 HWY 99	95212	UST
STOCKTON	U003786311	ARCO STATION #595*	6100 HWY 99	95212	UST
STOCKTON	S104572152	FRONTIER PERFORMANCE LUBRICANTS INC.	HWY 99 N BOUND STOCKTON ON CHARTER W		HAZNET
STOCKTON	S104566965	WALMART STORES INC	HWY 99 / CHARTER		HAZNET
STOCKTON	S105628949	RIO CALAVERAS ELEMENTARY SCHOOL	BIANCHI ROAD/MARCH LANE/WEST LANE	95210	SCH
STOCKTON	S105892082	STOCKTON REDEVEL. AGENCY - SOUTHSHORE PARCELS	SW CORNER OF THE INTERSECTION OF WEST WEBER AVE AN		CA SLIC
STOCKTON	S104228653	DURANGO TIRE (CHP SITE)	2749 EL DORADO STREET		SWF/LF
STOCKTON	U001603853	KURTZ'S FUEL MART	10807 N HIGHWAY 99	95212	HIST UST
STOCKTON	S104568099	BAGLEY ENTERPRISES,INC DBA MORADA CHEVRO	10876 N HWY 99	95212	HAZNET
STOCKTON	S105092066	FULL CIRCLE RESTORATION	10327 N HWY 88	95212	HAZNET
STOCKTON	S105266593	MARAUDER CLEANERS	10060 N HWY 99	95212	CLEANERS
STOCKTON	S103680223	SAN JOAQUIN FLOOD CONTROL AGENCY	WEST LANE BET 8 MILE RD		HAZNET
STOCKTON	S105691993	WEST LANE MARKET (WLM)	9484 WEST LANE	95210	LUST
STOCKTON	1006805059	CHEVRON STATION NO 200764	4747 WEST LN	95210	RCRIS-SQG, FINDS
STOCKTON	S105892024	GUARANTY FEDERAL BANK**	201 N. MAIN STREET, MANTECA / 501 WEST WEBER AVE		CA SLIC
STOCKTON	S103993172	UNION PACIFIC RAILROAD	8 MILE RD APPRX 1 1/2 MILE W OF HWY 99		HAZNET
STOCKTON	S103680227	CALIF WATER SVC CO STK TANK 8	WEST SONOMA / PLYMOUTH RD		HAZNET
STOCKTON	S105557310	VOLPI FARMS	14210 W. STATE ROUTE 4		CA SLIC
STOCKTON	S103961458	DR LAURENT VIEN DDS	7743 N WEST LN_STE C5	95210	HAZNET

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Elapsed ASTM days: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL ASTM STANDARD RECORDS

NPL: National Priority List
Source: EPA
Telephone: N/A
National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/30/03
Date Made Active at EDR: 06/02/03
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 05/05/03
Elapsed ASTM days: 28
Date of Last EDR Contact: 08/04/03

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 6
Telephone: 214-655-6659

EPA Region 8
Telephone: 303-312-6774

Proposed NPL: Proposed National Priority List Sites
Source: EPA
Telephone: N/A

Date of Government Version: 04/30/03
Date Made Active at EDR: 06/02/03
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 05/05/03
Elapsed ASTM days: 28
Date of Last EDR Contact: 08/04/03

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
Source: EPA
Telephone: 703-413-0223
CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 06/16/03
Date Made Active at EDR: 08/01/03
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 06/23/03
Elapsed ASTM days: 39
Date of Last EDR Contact: 06/23/03

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned
Source: EPA
Telephone: 703-413-0223
As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

Date of Government Version: 06/11/03
Date Made Active at EDR: 08/01/03
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 06/23/03
Elapsed ASTM days: 39
Date of Last EDR Contact: 06/23/03

CORRACTS: Corrective Action Report
Source: EPA
Telephone: 800-424-9346
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/31/03
Date Made Active at EDR: 05/08/03
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 04/07/03
Elapsed ASTM days: 31
Date of Last EDR Contact: 06/09/03

RCRIS: Resource Conservation and Recovery Information System
Source: EPA/NTIS
Telephone: 800-424-9346
Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

Date of Government Version: 07/11/03
Date Made Active at EDR: 08/18/03
Database Release Frequency: Varies

Date of Data Arrival at EDR: 07/30/03
Elapsed ASTM days: 19
Date of Last EDR Contact: 06/26/03

ERNS: Emergency Response Notification System
Source: National Response Center, United States Coast Guard
Telephone: 202-260-2342
Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/02
Date Made Active at EDR: 02/03/03
Database Release Frequency: Annually

Date of Data Arrival at EDR: 01/27/03
Elapsed ASTM days: 7
Date of Last EDR Contact: 07/28/03

FEDERAL ASTM SUPPLEMENTAL RECORDS

BRS: Biennial Reporting System
Source: EPA/NTIS
Telephone: 800-424-9346
The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/99
Database Release Frequency: Biennially

Date of Last EDR Contact: 06/16/03
Date of Next Scheduled EDR Contact: 09/15/03

CONSENT: Superfund (CERCLA) Consent Decrees
Source: EPA Regional Offices
Telephone: Varies
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: N/A
Database Release Frequency: Varies

Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

ROD: Records Of Decision
Source: EPA
Telephone: 703-416-0223
Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 07/09/03
Database Release Frequency: Annually

Date of Last EDR Contact: 07/07/03
Date of Next Scheduled EDR Contact: 10/06/03

DELISTED NPL: National Priority List Deletions
Source: EPA
Telephone: N/A
The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/30/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 08/04/03
Date of Next Scheduled EDR Contact: 11/03/03

FINDS: Facility Index System/Facility Identification Initiative Program Summary Report
Source: EPA
Telephone: N/A
Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/25/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/02/03
Date of Next Scheduled EDR Contact: 10/06/03

HMIRS: Hazardous Materials Information Reporting System
Source: U.S. Department of Transportation
Telephone: 202-366-4555
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 03/31/03
Database Release Frequency: Annually

Date of Last EDR Contact: 07/23/03
Date of Next Scheduled EDR Contact: 10/20/03

MLTS: Material Licensing Tracking System
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/23/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/02/03
Date of Next Scheduled EDR Contact: 10/06/03

MINES: Mines Master Index File
Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959

Date of Government Version: 06/07/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 06/30/03
Date of Next Scheduled EDR Contact: 09/29/03

NPL LIENS: Federal Superfund Liens
Source: EPA
Telephone: 205-564-4267
Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 05/27/03
Date of Next Scheduled EDR Contact: 08/25/03

PADS: PCB Activity Database System
Source: EPA
Telephone: 202-564-3887
PCB Activity Database. PADS identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 03/26/03
Database Release Frequency: Annually

Date of Last EDR Contact: 08/13/03
Date of Next Scheduled EDR Contact: 11/10/03

DOD: Department of Defense Sites
Source: USGS
Telephone: 703-648-5920
This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 04/01/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 08/15/03
Date of Next Scheduled EDR Contact: 11/10/03

RAATS: RCRA Administrative Action Tracking System
Source: EPA
Telephone: 202-564-4104
RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/95
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 06/09/03
Date of Next Scheduled EDR Contact: 09/08/03

TRIS: Toxic Chemical Release Inventory System
Source: EPA
Telephone: 202-260-1531
Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/01
Database Release Frequency: Annually

Date of Last EDR Contact: 06/27/03
Date of Next Scheduled EDR Contact: 09/22/03

TSCA: Toxic Substances Control Act
Source: EPA
Telephone: 202-260-5521
Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/98
Database Release Frequency: Every 4 Years

Date of Last EDR Contact: 06/09/03
Date of Next Scheduled EDR Contact: 09/08/03

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA
Telephone: 202-564-2501

Date of Government Version: 04/15/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/23/03
Date of Next Scheduled EDR Contact: 09/22/03

SSTS: Section 7 Tracking Systems
Source: EPA
Telephone: 202-564-5008
Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/00
Database Release Frequency: Annually
Date of Last EDR Contact: 07/24/03
Date of Next Scheduled EDR Contact: 10/20/03

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-564-2501
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/15/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/23/03
Date of Next Scheduled EDR Contact: 09/22/03

STATE OF CALIFORNIA ASTM STANDARD RECORDS

AWP: Annual Workplan Sites
Source: California Environmental Protection Agency
Telephone: 916-323-3400
Known Hazardous Waste Sites. California DTSC's Annual Workplan (AWP), formerly BEP, identifies known hazardous substance sites targeted for cleanup.

Date of Government Version: 06/30/03
Date Made Active at EDR: 07/18/03
Database Release Frequency: Annually
Date of Data Arrival at EDR: 07/07/03
Elapsed ASTM days: 11
Date of Last EDR Contact: 07/07/03

CAL-SITES: Calsites Database
Source: Department of Toxic Substance Control
Telephone: 916-323-3400
The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database.

Date of Government Version: 04/28/03
Date Made Active at EDR: 06/23/03
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 06/02/03
Elapsed ASTM days: 21
Date of Last EDR Contact: 06/02/03

CHMIRS: California Hazardous Material Incident Report System
Source: Office of Emergency Services
Telephone: 916-845-8400
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/02
Date Made Active at EDR: 08/07/03
Database Release Frequency: Varies
Date of Data Arrival at EDR: 07/11/03
Elapsed ASTM days: 27
Date of Last EDR Contact: 05/27/03

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-9100
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 04/01/01
Date Made Active at EDR: 07/26/01
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 05/29/01
Elapsed ASTM days: 58
Date of Last EDR Contact: 07/28/03

NOTIFY 65: Proposition 65 Records
Source: State Water Resources Control Board
Telephone: 916-445-3846
Proposition 65 Notification Records. NOTIFY 65 contains facility notifications about any release which could impact drinking water and thereby expose the public to a potential health risk.

Date of Government Version: 10/21/93
Date Made Active at EDR: 11/19/93
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 11/01/93
Elapsed ASTM days: 18
Date of Last EDR Contact: 07/23/03

TOXIC PITS: Toxic Pits Cleanup Act Sites
Source: State Water Resources Control Board
Telephone: 916-227-4364
Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/95
Date Made Active at EDR: 09/26/95
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 08/30/95
Elapsed ASTM days: 27
Date of Last EDR Contact: 08/04/03

SWF/LF (SWIS): Solid Waste Information System
Source: Integrated Waste Management Board
Telephone: 916-341-6320
Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 06/13/03
Date Made Active at EDR: 07/07/03
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 06/16/03
Elapsed ASTM days: 21
Date of Last EDR Contact: 06/16/03

WMUDS/SWAT: Waste Management Unit Database
Source: State Water Resources Control Board
Telephone: 916-227-4448
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/00
Date Made Active at EDR: 05/10/00
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 04/10/00
Elapsed ASTM days: 30
Date of Last EDR Contact: 06/17/03

LUST: Leaking Underground Storage Tank Information System
Source: State Water Resources Control Board
Telephone: 916-341-5740
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 04/02/03
Date Made Active at EDR: 04/25/03
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 04/16/03
Elapsed ASTM days: 9
Date of Last EDR Contact: 07/08/03

CA BOND EXP. PLAN: Bond Expenditure Plan
Source: Department of Health Services
Telephone: 916-255-2118
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/89
Date Made Active at EDR: 08/02/94
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 07/27/94
Elapsed ASTM days: 6
Date of Last EDR Contact: 05/31/94

CA UST:

UST: Active UST Facilities
Source: SWRCB
Telephone: 916-341-5700
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 04/02/03
Date Made Active at EDR: 04/30/03
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 04/16/03
Elapsed ASTM days: 14
Date of Last EDR Contact: 07/08/03

VCP: Voluntary Cleanup Program Properties
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 04/28/03
Date Made Active at EDR: 06/12/03
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 06/02/03
Elapsed ASTM days: 10
Date of Last EDR Contact: 06/02/03

INDIAN UST: Underground Storage Tanks on Indian Land
Source: EPA Region 9
Telephone: 415-972-3368

Date of Government Version: N/A
Date Made Active at EDR: N/A
Database Release Frequency: Varies

Date of Data Arrival at EDR: N/A
Elapsed ASTM days: 0
Date of Last EDR Contact: N/A

CA FID UST: Facility Inventory Database
Source: California Environmental Protection Agency
Telephone: 916-445-6532
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/94
Date Made Active at EDR: 09/29/95
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 09/05/95
Elapsed ASTM days: 24
Date of Last EDR Contact: 12/28/98

HIST UST: Hazardous Substance Storage Container Database
Source: State Water Resources Control Board
Telephone: 916-341-5700
The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/90
Date Made Active at EDR: 02/12/91
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 01/25/91
Elapsed ASTM days: 18
Date of Last EDR Contact: 07/26/01

STATE OF CALIFORNIA ASTM SUPPLEMENTAL RECORDS

AST: Aboveground Petroleum Storage Tank Facilities
Source: State Water Resources Control Board
Telephone: 916-341-5712
Registered Aboveground Storage Tanks.

Date of Government Version: 05/01/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 08/04/03
Date of Next Scheduled EDR Contact: 11/03/03

CLEANERS: Cleaner Facilities
Source: Department of Toxic Substance Control
Telephone: 916-225-0873
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 03/11/03
Database Release Frequency: Annually
Date of Last EDR Contact: 07/02/03
Date of Next Scheduled EDR Contact: 10/06/03

CA WDS: Waste Discharge System
Source: State Water Resources Control Board
Telephone: 916-657-1571
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/23/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/23/03
Date of Next Scheduled EDR Contact: 09/22/03

DEED: List of Deed Restrictions
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
The use of recorded land use restrictions is one of the methods the DTSC uses to protect the public from unsafe exposures to hazardous substances and wastes.

Date of Government Version: 07/04/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 07/07/03
Date of Next Scheduled EDR Contact: 10/06/03

NFA: No Further Action Determination
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties at which DTSC has made a clear determination that the property does not pose a problem to the environment or to public health.

Date of Government Version: 04/28/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/02/03
Date of Next Scheduled EDR Contact: 09/01/03

REF: Unconfirmed Properties Referred to Another Agency
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties where contamination has not been confirmed and which were determined as not requiring direct DTSC Site Mitigation Program action or oversight. Accordingly, these sites have been referred to another state or local regulatory agency.

Date of Government Version: 04/28/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/02/03
Date of Next Scheduled EDR Contact: 09/01/03

SCH: School Property Evaluation Program
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 04/28/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/02/03
Date of Next Scheduled EDR Contact: 09/01/03

NFE: Properties Needing Further Evaluation
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties that are suspected of being contaminated. These are unconfirmed contaminated properties that need to be assessed using the PEA process. PEA in Progress indicates properties where DTSC is currently conducting a PEA. PEA Required indicates properties where DTSC has determined a PEA is required, but not currently underway.

Date of Government Version: 04/28/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/02/03
Date of Next Scheduled EDR Contact: 09/01/03

HAZNET: Hazardous Waste Information System
Source: California Environmental Protection Agency
Telephone: 916-255-1136
Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/01
Database Release Frequency: Annually

Date of Last EDR Contact: 08/12/03
Date of Next Scheduled EDR Contact: 11/10/03

LOCAL RECORDS

ALAMEDA COUNTY:

Local Oversight Program Listing of UGT Cleanup Sites
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700

Date of Government Version: 07/03/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 07/07/03
Date of Next Scheduled EDR Contact: 10/27/03

Underground Tanks
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700

Date of Government Version: 07/03/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 07/07/03
Date of Next Scheduled EDR Contact: 10/27/03

CONTRA COSTA COUNTY:

Site List
Source: Contra Costa Health Services Department
Telephone: 925-646-2286
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 06/16/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 06/05/03
Date of Next Scheduled EDR Contact: 09/01/03

FRESNO COUNTY:

CUPA Resources List
Source: Dept. of Community Health
Telephone: 559-445-3271
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 07/15/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 07/21/03
Date of Next Scheduled EDR Contact: 11/10/03

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Kern County Sites and Tanks Listing.

Date of Government Version: 07/25/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/24/03
Date of Next Scheduled EDR Contact: 09/08/03

LOS ANGELES COUNTY:

List of Solid Waste Facilities
Source: La County Department of Public Works
Telephone: 818-458-5185

Date of Government Version: 12/01/02
Database Release Frequency: Varies

Date of Last EDR Contact: 08/18/03
Date of Next Scheduled EDR Contact: 11/17/03

City of El Segundo Underground Storage Tank
Source: City of El Segundo Fire Department
Telephone: 310-607-2239

Date of Government Version: 03/01/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 08/18/03
Date of Next Scheduled EDR Contact: 11/17/03

City of Long Beach Underground Storage Tank
Source: City of Long Beach Fire Department
Telephone: 562-570-2543

Date of Government Version: 05/30/02
Database Release Frequency: Annually

Date of Last EDR Contact: 05/27/03
Date of Next Scheduled EDR Contact: 08/25/03

City of Torrance Underground Storage Tank
Source: City of Torrance Fire Department
Telephone: 310-618-2973

Date of Government Version: 02/25/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 08/18/03
Date of Next Scheduled EDR Contact: 11/17/03

City of Los Angeles Landfills
Source: Engineering & Construction Division
Telephone: 213-473-7869

Date of Government Version: 03/01/02
Database Release Frequency: Varies

Date of Last EDR Contact: 06/16/03
Date of Next Scheduled EDR Contact: 09/15/03

HMS: Street Number List
Source: Department of Public Works
Telephone: 626-458-3517
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 04/03/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 08/18/03
Date of Next Scheduled EDR Contact: 11/17/03

Site Mitigation List
Source: Community Health Services
Telephone: 323-890-7806
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/07/03
Database Release Frequency: Annually

Date of Last EDR Contact: 08/18/03
Date of Next Scheduled EDR Contact: 11/17/03

San Gabriel Valley Areas of Concern
Source: EPA Region 9
Telephone: 415-972-3178
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 12/31/98
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 07/06/99
Date of Next Scheduled EDR Contact: N/A

MARIN COUNTY:

Underground Storage Tank Sites
Source: Public Works Department Waste Management
Telephone: 415-499-6647
Currently permitted USTs in Marin County.

Date of Government Version: 03/04/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 08/04/03
Date of Next Scheduled EDR Contact: 11/03/03

NAPA COUNTY:

Sites With Reported Contamination
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 03/31/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 06/30/03
Date of Next Scheduled EDR Contact: 09/29/03

Closed and Operating Underground Storage Tank Sites
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 03/31/03
Database Release Frequency: Annually

Date of Last EDR Contact: 06/30/03
Date of Next Scheduled EDR Contact: 09/29/03

ORANGE COUNTY:

List of Underground Storage Tank Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 11/04/02
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/11/03
Date of Next Scheduled EDR Contact: 09/08/03

List of Underground Storage Tank Facilities
Source: Health Care Agency
Telephone: 714-834-3446
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 11/27/01
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/11/03
Date of Next Scheduled EDR Contact: 09/08/03

List of Industrial Site Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Petroleum and non-petroleum spills.

Date of Government Version: 10/24/00
Database Release Frequency: Annually

Date of Last EDR Contact: 06/11/03
Date of Next Scheduled EDR Contact: 09/08/03

PLACER COUNTY:

Master List of Facilities
Source: Placer County Health and Human Services
Telephone: 530-889-7312
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 07/17/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 06/23/03
Date of Next Scheduled EDR Contact: 09/22/03

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Source: Department of Public Health
Telephone: 909-358-5055
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 06/03/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/23/03
Date of Next Scheduled EDR Contact: 10/20/03

Underground Storage Tank Tank List
Source: Health Services Agency
Telephone: 909-358-5055

Date of Government Version: 05/30/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/23/03
Date of Next Scheduled EDR Contact: 10/20/03

SACRAMENTO COUNTY:

CS - Contaminated Sites
Source: Sacramento County Environmental Management
Telephone: 916-875-8406

Date of Government Version: 04/02/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 08/04/03
Date of Next Scheduled EDR Contact: 11/03/03

ML - Regulatory Compliance Master List
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 04/03/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 08/04/03
Date of Next Scheduled EDR Contact: 11/03/03

SAN BERNARDINO COUNTY:

Hazardous Material Permits
Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 06/01/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/09/03
Date of Next Scheduled EDR Contact: 09/08/03

SAN DIEGO COUNTY:

Solid Waste Facilities
Source: Department of Health Services
Telephone: 619-338-2209
San Diego County Solid Waste Facilities.

Date of Government Version: 08/01/00
Database Release Frequency: Varies

Date of Last EDR Contact: 05/27/03
Date of Next Scheduled EDR Contact: 08/25/03

Hazardous Materials Management Division Database
Source: Hazardous Materials Management Division
Telephone: 619-338-2268
The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 03/31/02
Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/08/03
Date of Next Scheduled EDR Contact: 10/06/03

SAN FRANCISCO COUNTY:

Local Oversite Facilities
Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920

Date of Government Version: 06/20/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/09/03
Date of Next Scheduled EDR Contact: 09/08/03

Underground Storage Tank Information
Source: Department of Public Health
Telephone: 415-252-3920

Date of Government Version: 06/20/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/09/03
Date of Next Scheduled EDR Contact: 09/08/03

SAN MATEO COUNTY:

Fuel Leak List
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921

Date of Government Version: 03/13/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 07/28/03
Date of Next Scheduled EDR Contact: 10/27/03

Business Inventory
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 06/16/03
Database Release Frequency: Annually

Date of Last EDR Contact: 07/08/03
Date of Next Scheduled EDR Contact: 10/13/03

SANTA CLARA COUNTY:

Fuel Leak Site Activity Report
Source: Santa Clara Valley Water District
Telephone: 408-265-2600

Date of Government Version: 07/02/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 06/30/03
Date of Next Scheduled EDR Contact: 09/29/03

Hazardous Material Facilities
Source: City of San Jose Fire Department
Telephone: 408-277-4659

Date of Government Version: 12/11/02
Database Release Frequency: Annually

Date of Last EDR Contact: 06/09/03
Date of Next Scheduled EDR Contact: 09/08/03

SOLANO COUNTY:

Leaking Underground Storage Tanks
Source: Solano County Department of Environmental Management
Telephone: 707-421-6770

Date of Government Version: 12/20/02
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/16/03
Date of Next Scheduled EDR Contact: 09/15/03

Underground Storage Tanks
Source: Solano County Department of Environmental Management
Telephone: 707-421-6770

Date of Government Version: 12/18/02
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/16/03
Date of Next Scheduled EDR Contact: 09/15/03

SONOMA COUNTY:

Leaking Underground Storage Tank Sites
Source: Department of Health Services
Telephone: 707-565-6565

Date of Government Version: 07/28/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/28/03
Date of Next Scheduled EDR Contact: 10/27/03

SUTTER COUNTY:

Underground Storage Tanks
Source: Sutter County Department of Agriculture
Telephone: 530-822-7500

Date of Government Version: 07/01/01
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 07/07/03
Date of Next Scheduled EDR Contact: 10/06/03

VENTURA COUNTY:

Inventory of Illegal Abandoned and Inactive Sites
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 09/01/02
Database Release Frequency: Annually

Date of Last EDR Contact: 05/27/03
Date of Next Scheduled EDR Contact: 08/25/03

Listing of Underground Tank Cleanup Sites
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/22/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/15/03
Date of Next Scheduled EDR Contact: 09/15/03

Underground Tank Closed Sites List
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 12/30/02
Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/08/03
Date of Next Scheduled EDR Contact: 10/13/03

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 05/21/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/16/03
Date of Next Scheduled EDR Contact: 09/15/03

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Source: Yolo County Department of Health
Telephone: 530-666-8646

Date of Government Version: 06/19/03
Database Release Frequency: Annually

Date of Last EDR Contact: 06/19/03
Date of Next Scheduled EDR Contact: 10/20/03

California Regional Water Quality Control Board (RWQCB) LUST Records

LUST REG 1: Active Toxic Site Investigation
Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-576-2220
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/01
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 05/27/03
Date of Next Scheduled EDR Contact: 08/25/03

LUST REG 2: Fuel Leak List
Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457

Date of Government Version: 03/28/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/10/03
Date of Next Scheduled EDR Contact: 10/13/03

LUST REG 3: Leaking Underground Storage Tank Database
Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147

Date of Government Version: 05/19/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 08/18/03
Date of Next Scheduled EDR Contact: 11/17/03

LUST REG 4: Underground Storage Tank Leak List
Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-266-6600
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 08/09/01
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 06/30/03
Date of Next Scheduled EDR Contact: 09/29/03

LUST REG 5: Leaking Underground Storage Tank Database
Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-255-3125

Date of Government Version: 07/01/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/07/03
Date of Next Scheduled EDR Contact: 10/06/03

LUST REG 6L: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 916-542-5424
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 06/09/03
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 06/09/03
Date of Next Scheduled EDR Contact: 09/08/03

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-346-7491

Date of Government Version: 05/29/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/02/03
Date of Next Scheduled EDR Contact: 10/06/03

LUST REG 7: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-346-7491

Date of Government Version: 07/02/02
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 06/30/03
Date of Next Scheduled EDR Contact: 09/29/03

LUST REG 8: Leaking Underground Storage Tanks
Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4498
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 06/11/03
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 08/11/03
Date of Next Scheduled EDR Contact: 11/10/03

LUST REG 9: Leaking Underground Storage Tank Report
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/01
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 07/23/03
Date of Next Scheduled EDR Contact: 10/20/03

California Regional Water Quality Control Board (RWQCB) SLIC Records

SLIC REG 1: Active Toxic Site Investigations
Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220

Date of Government Version: 04/03/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 05/27/03
Date of Next Scheduled EDR Contact: 08/25/03

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 03/28/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/10/03
Date of Next Scheduled EDR Contact: 10/13/03

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 05/19/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 08/18/03
Date of Next Scheduled EDR Contact: 11/17/03

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 07/01/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/28/03
Date of Next Scheduled EDR Contact: 10/27/03

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-855-3075
Unregulated sites that impact groundwater or have the potential to impact groundwater.

Date of Government Version: 07/02/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 07/07/03
Date of Next Scheduled EDR Contact: 10/06/03

SLIC REG 6L: SLIC Sites
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574

Date of Government Version: 06/09/03
Database Release Frequency: Varies

Date of Last EDR Contact: 06/09/03
Date of Next Scheduled EDR Contact: 09/08/03

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583

Date of Government Version: 05/08/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 07/02/03
Date of Next Scheduled EDR Contact: 10/06/03

SLIC REG 7: SLIC List
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491

Date of Government Version: 05/29/03
Database Release Frequency: Varies

Date of Last EDR Contact: 05/27/03
Date of Next Scheduled EDR Contact: 08/25/03

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-3298

Date of Government Version: 04/01/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 07/07/03
Date of Next Scheduled EDR Contact: 10/06/03

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980

Date of Government Version: 03/03/03
Database Release Frequency: Annually

Date of Last EDR Contact: 06/02/03
Date of Next Scheduled EDR Contact: 09/01/03

EDR PROPRIETARY HISTORICAL DATABASES

Former Manufactured Gas (Coal Gas) Sites: The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. ©Copyright 1993 Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

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The information contained in this report has predominantly been obtained from publicly available sources produced by entities other than Real Property Scan. While reasonable steps have been taken to insure the accuracy of this report, Real Property Scan does not guarantee the accuracy of this report. Any liability on the part of Real Property Scan is strictly limited to a refund of the amount paid. No claim is made for the actual existence of toxins at any site. This report does not constitute a legal opinion.

STATE OF CALIFORNIA BROWNFIELDS DATABASES RECORDS

VCP: Voluntary Cleanup Program Properties
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 04/28/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/02/03
Date of Next Scheduled EDR Contact: 09/01/03

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: PennWell Corporation
Telephone: (800) 823-6277
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

STREET AND ADDRESS INFORMATION

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GEOCHECK™ PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

MILL CREEK
EIGHT MILE ROAD/WEST LANE
STOCKTON, CA 95212

TARGET PROPERTY COORDINATES

Latitude (North):	38.056999 - 38˚ 3' 25.2"
Longitude (West):	121.294601 - 121˚ 17' 40.6"
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	649622.7
UTM Y (Meters):	4213306.5
Elevation:	31 ft. above sea level

EDR's GeoCheck Physical Setting Source Addendum has been developed to assist the environmental professional with the collection of physical setting source information in accordance with ASTM 1527-00, Section 7.2.3. Section 7.2.3 requires that a current USGS 7.5 Minute Topographic Map (or equivalent, such as the USGS Digital Elevation Model) be reviewed. It also requires that one or more additional physical setting sources be sought when (1) conditions have been identified in which hazardous substances or petroleum products are likely to migrate to or from the property, and (2) more information than is provided in the current USGS 7.5 Minute Topographic Map (or equivalent) is generally obtained, pursuant to local good commercial or customary practice, to assess the impact of migration of recognized environmental conditions in connection with the property. Such additional physical setting sources generally include information about the topographic, hydrologic, hydrogeologic, and geologic characteristics of a site, and wells in the area.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata. EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

GEOCHECK - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

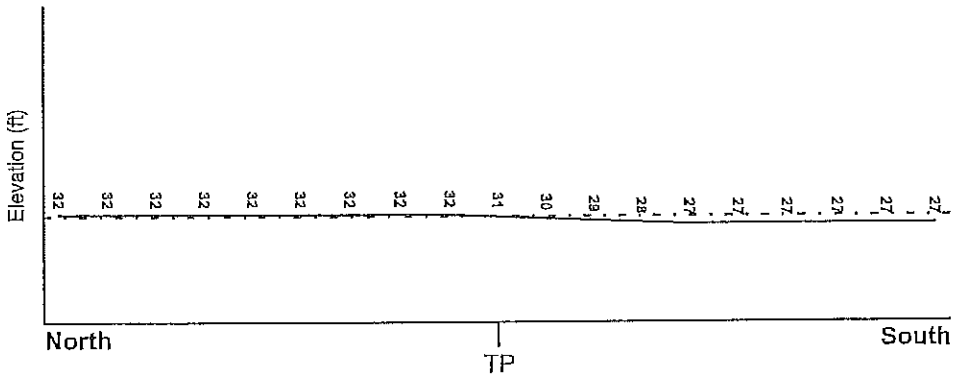
TOPOGRAPHIC INFORMATION

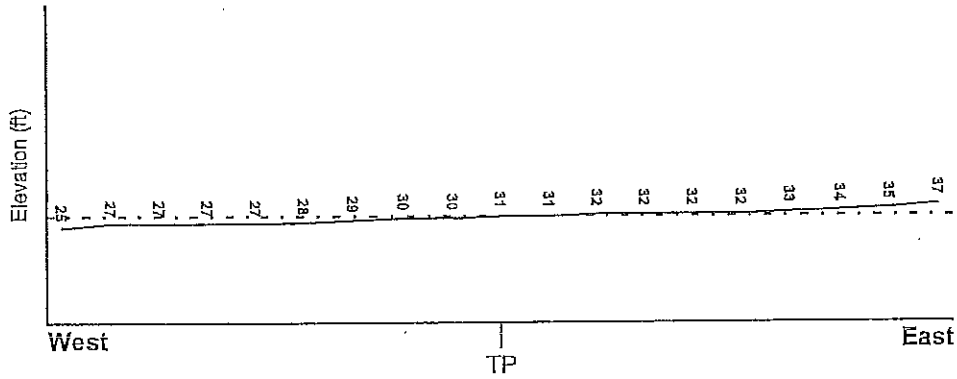
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

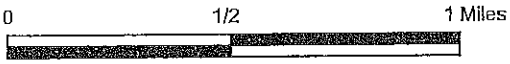
USGS Topographic Map:	2438121-A3 LODI SOUTH, CA
General Topographic Gradient:	General SSW
Source:	USGS 7.5 min quad index

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 31 ft.



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
SAN JOAQUIN, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 0602990295B

Additional Panels in search area: 0602990285B

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
LODI SOUTH	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data:*

Search Radius: 1.25 miles
Status: Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site-specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name: CLEAR LAKE

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Not reported

Hydric Status: Soil meets the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: HIGH

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	13 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.20 Min: 0.06	Max: 8.40 Min: 6.10

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
2	13 inches	60 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.20 Min: 0.06	Max: 8.40 Min: 7.40

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: silty clay
clay loam
silty clay loam
fine sandy loam
silt loam
sandy loam

Surficial Soil Types: silty clay
clay loam
silty clay loam
fine sandy loam
silt loam
sandy loam

Shallow Soil Types: clay loam
indurated
silty clay loam
fine sandy loam
sandy clay loam

Deeper Soil Types: silty clay loam
cemented
clay loam
loam
stratified
weathered bedrock

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

According to ASTM E 1527-00, Section 7.2.2, "one or more additional state or local sources of environmental records may be checked, in the discretion of the environmental professional, to enhance and supplement federal and state sources... Factors to consider in determining which local or additional state records, if any, should be checked include (1) whether they are reasonably ascertainable, (2) whether they are sufficiently useful, accurate, and complete in light of the objective of the records review (see 7.1.1), and (3) whether they are obtained, pursuant to local, good commercial or customary practice." One of the record sources listed in Section 7.2.2 is water well information. Water well information can be used to assist the environmental professional in assessing sources that may impact groundwater flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	USGS0168816	1/2 - 1 Mile NE
4	USGS0168807	1/2 - 1 Mile West
5	USGS0168806	1/2 - 1 Mile East

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

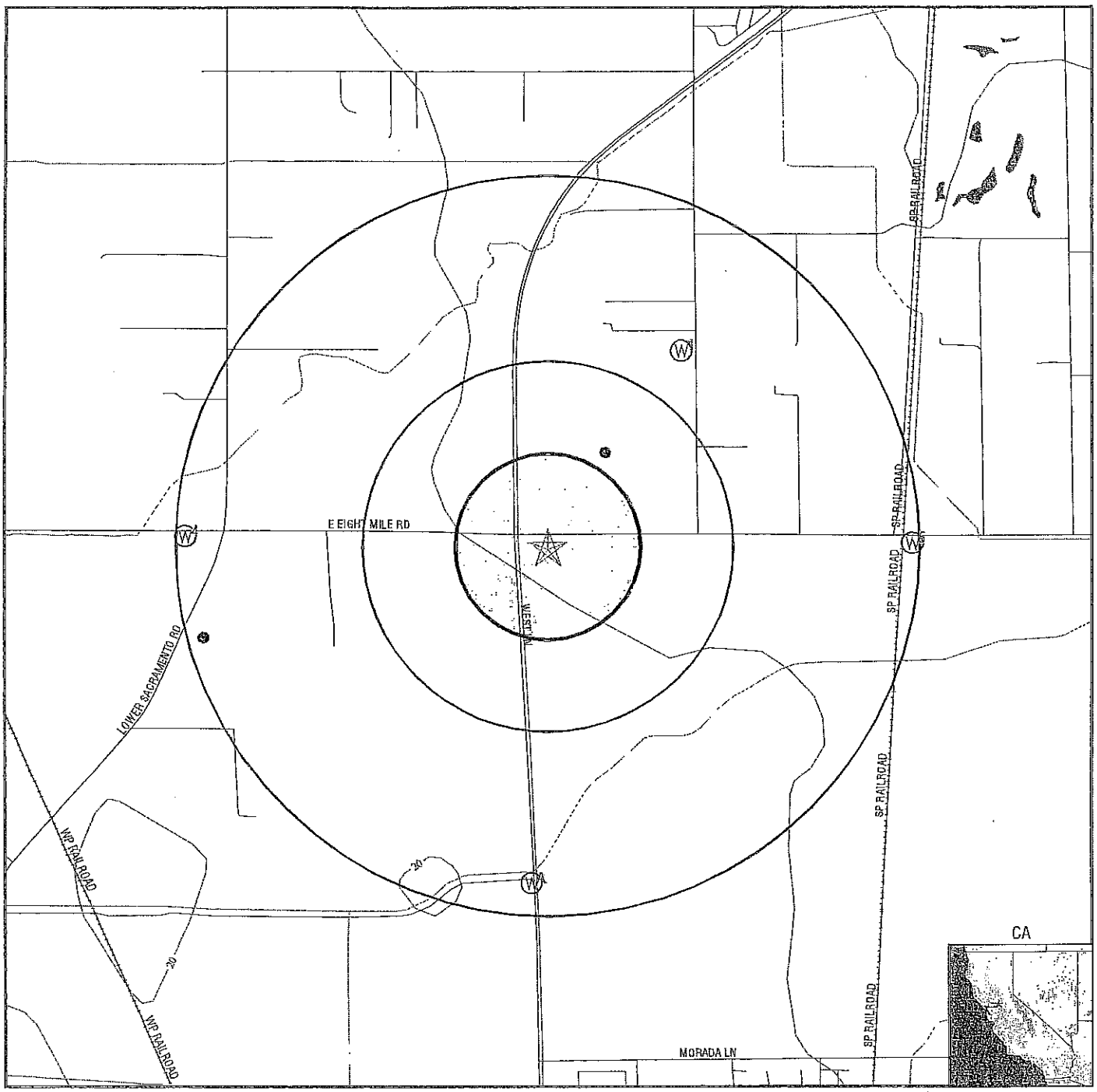
STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A2	23197	1/2 - 1 Mile South
A3	1940	1/2 - 1 Mile South

STATE OIL/GAS WELL INFORMATION

DISTANCE FROM TP (Miles)	DISTANCE FROM TP (Miles)
1/8 - 1/4 Mile NNE	1 - 2 Miles WSW

PHYSICAL SETTING SOURCE MAP - 01035271.1r



County Boundary
Major Roads
Contour Lines
Earthquake Fault Lines
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

Groundwater Flow Direction
GI Indeterminate Groundwater Flow at Location
GV Groundwater Flow Varies at Location
HD Closest Hydrogeological Data
Oil, gas or related wells

TARGET PROPERTY:	Mill Creek	CUSTOMER:	ATC Environmental, Inc.
ADDRESS:	Eight Mile Road/West Lane	CONTACT:	John Sellman
CITY/STATE/ZIP:	Stockton CA 95212	INQUIRY #:	01035271.1r
LAT/LONG:	38.0570 / 121.2946	DATE:	August 25, 2003 9:31 am

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GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation		Database	EDR ID Number
1 **NE** **1/2 - 1 Mile** **Higher**		FED USGS	USGS0168816

Agency:	USGS	Site ID:	380353121171301
Site Name:	003N006E35L004M		
Dec. Latitude:	38.06464		
Dec. Longitude:	-121.288		
Coord Sys:	NAD83		
State:	CA		
County:	San Joaquin County		
Altitude:	30.00		
Hydrologic code:	18040005		
Topographic:	Valley flat		
Site Type:	Ground-water other than Spring		
Const Date:	19661222	Inven Date:	Not Reported
Well Type:	Single well, other than collector or Ranney type		
Primary Aquifer:	Not Reported		
Aquifer type:	Not Reported	Well depth:	70.0
Hole depth:	135	Source:	Not Reported
Project no:	Not Reported		

A2 **South** **1/2 - 1 Mile** **Lower**		CA WELLS	23197

Water System Information:

Prime Station Code:	J39/012-19TRT	User ID:	PTA
FRDS Number:	3910012074	County:	San Joaquin
District Number:	10	Station Type:	WELL/AMBNT
Water Type:	Well/Groundwater	Well Status:	Active Treated
Source Lat/Long:	380238.0 1211740.0	Precision:	1 Mile (One Minute)
Source Name:	WELL 19 - TREATED		
System Number:	3910012		
System Name:	STOCKTON, CITY OF		
Organization That Operates System:	2500 NAVY DRIVE STOCKTON 95206		
Pop Served:	96000	Connections:	28033
Area Served:	STOCKTON		

A3 **South** **1/2 - 1 Mile** **Lower**		CA WELLS	1940

Water System Information:

Prime Station Code:	02N/06E-10J03 M	User ID:	PTA
FRDS Number:	3910012038	County:	San Joaquin
District Number:	10	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	380238.0 1211740.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 19 - WEST LANE		

GEOCHECK - PHYSICAL SETTING SOURCE MAP FINDINGS

System Number: 3910012
System Name: STOCKTON, CITY OF
Organization That Operates System:
2500 NAVY DRIVE
STOCKTON 95206
Pop Served: 96000 Connections: 28033
Area Served: STOCKTON

Sample Information: * Only Findings Above Detection Level Are Listed

Sample Collected:	11/03/1987	Findings:	19.200 C
Chemical:	SOURCE TEMPERATURE C		
Sample Collected:	11/03/1987	Findings:	10.000 UNITS
Chemical:	COLOR		
Sample Collected:	11/03/1987	Findings:	368.000 UMHO
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	11/03/1987	Findings:	7.800
Chemical:	FIELD PH		
Sample Collected:	11/03/1987	Findings:	7.700
Chemical:	PH (LABORATORY)		
Sample Collected:	11/03/1987	Findings:	170.000 MG/L
Chemical:	TOTAL ALKALINITY (AS CACO3)		
Sample Collected:	11/03/1987	Findings:	180.000 MG/L
Chemical:	TOTAL HARDNESS (AS CACO3)		
Sample Collected:	11/03/1987	Findings:	41.600 MG/L
Chemical:	CALCIUM		
Sample Collected:	11/03/1987	Findings:	18.600 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	11/03/1987	Findings:	14.600 MG/L
Chemical:	SODIUM		
Sample Collected:	11/03/1987	Findings:	5.390 MG/L
Chemical:	POTASSIUM		
Sample Collected:	11/03/1987	Findings:	11.000 MG/L
Chemical:	CHLORIDE		
Sample Collected:	11/03/1987	Findings:	168.000 UG/L
Chemical:	BARIUM		
Sample Collected:	11/03/1987	Findings:	21.000 UG/L
Chemical:	CHROMIUM (TOTAL)		
Sample Collected:	11/03/1987	Findings:	110.000 UG/L
Chemical:	IRON		
Sample Collected:	11/03/1987	Findings:	262.000 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	11/03/1987	Findings:	4.830 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11/03/1987	Findings:	6.000 NTU
Chemical:	TURBIDITY (LAB)		
Sample Collected:	03/01/1989	Findings:	1.200 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	03/01/1989	Findings:	5.800 PCI/L
Chemical:	GROSS BETA		
Sample Collected:	03/01/1989	Findings:	7.200 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Sample Collected:	05/09/1989	Findings:	2.260 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	05/09/1989	Findings:	12.880 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	09/14/1989	Findings:	1.830 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	09/14/1989	Findings:	2.010 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	09/14/1989	Findings:	12.640 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	12/28/1989	Findings:	.900 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	12/28/1989	Findings:	7.200 PCI/L
Chemical:	GROSS BETA		
Sample Collected:	12/28/1989	Findings:	8.100 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	10/23/1990	Findings:	19.800 C
Chemical:	SOURCE TEMPERATURE C		
Sample Collected:	10/23/1990	Findings:	362.000 UMHO
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	10/23/1990	Findings:	7.600
Chemical:	FIELD PH		
Sample Collected:	10/23/1990	Findings:	8.000
Chemical:	PH (LABORATORY)		
Sample Collected:	10/23/1990	Findings:	160.000 MG/L
Chemical:	TOTAL ALKALINITY (AS CACO3)		
Sample Collected:	10/23/1990	Findings:	160.000 MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	10/23/1990	Findings:	162.000 MG/L
Chemical:	TOTAL HARDNESS (AS CACO3)		
Sample Collected:	10/23/1990	Findings:	38.000 MG/L
Chemical:	CALCIUM		
Sample Collected:	10/23/1990	Findings:	16.400 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	10/23/1990	Findings:	18.100 MG/L
Chemical:	SODIUM		
Sample Collected:	10/23/1990	Findings:	5.270 MG/L
Chemical:	POTASSIUM		
Sample Collected:	10/23/1990	Findings:	15.000 MG/L
Chemical:	CHLORIDE		
Sample Collected:	10/23/1990	Findings:	5.000 UG/L
Chemical:	ARSENIC		
Sample Collected:	10/23/1990	Findings:	115.000 UG/L
Chemical:	BARIUM		
Sample Collected:	10/23/1990	Findings:	15.000 UG/L
Chemical:	MANGANESE		
Sample Collected:	10/23/1990	Findings:	224.000 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	10/23/1990	Findings:	- .020
Chemical:	LANGELIER INDEX @ SOURCE TEMP.		

Sample Collected:	10/23/1990	Findings:	3.820 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10/23/1990	Findings:	.290 NTU
Chemical:	TURBIDITY (LAB)		
Sample Collected:	11/19/1991	Findings:	19.900 C
Chemical:	SOURCE TEMPERATURE C		
Sample Collected:	11/19/1991	Findings:	338.000 UMHO
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	11/19/1991	Findings:	7.600
Chemical:	FIELD PH		
Sample Collected:	11/19/1991	Findings:	8.000
Chemical:	PH (LABORATORY)		
Sample Collected:	11/19/1991	Findings:	144.000 MG/L
Chemical:	TOTAL ALKALINITY (AS CACO3)		
Sample Collected:	11/19/1991	Findings:	144.000 MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	11/19/1991	Findings:	143.000 MG/L
Chemical:	TOTAL HARDNESS (AS CACO3)		
Sample Collected:	11/19/1991	Findings:	32.900 MG/L
Chemical:	CALCIUM		
Sample Collected:	11/19/1991	Findings:	14.700 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	11/19/1991	Findings:	14.900 MG/L
Chemical:	SODIUM		
Sample Collected:	11/19/1991	Findings:	2.410 MG/L
Chemical:	POTASSIUM		
Sample Collected:	11/19/1991	Findings:	9.300 MG/L
Chemical:	CHLORIDE		
Sample Collected:	11/19/1991	Findings:	4.000 UG/L
Chemical:	ARSENIC		
Sample Collected:	11/19/1991	Findings:	162.000 UG/L
Chemical:	BARIUM		
Sample Collected:	11/19/1991	Findings:	246.000 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	11/19/1991	Findings:	.270
Chemical:	LANGELIER INDEX @ SOURCE TEMP.		
Sample Collected:	11/19/1991	Findings:	.560 NTU
Chemical:	TURBIDITY (LAB)		
Sample Collected:	10/14/1992	Findings:	19.700 C
Chemical:	SOURCE TEMPERATURE C		
Sample Collected:	10/14/1992	Findings:	453.000 UMHO
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	10/14/1992	Findings:	7.500
Chemical:	FIELD PH		
Sample Collected:	10/14/1992	Findings:	7.800
Chemical:	PH (LABORATORY)		
Sample Collected:	10/14/1992	Findings:	184.000 MG/L
Chemical:	TOTAL ALKALINITY (AS CACO3)		
Sample Collected:	10/14/1992	Findings:	224.000 MG/L
Chemical:	BICARBONATE ALKALINITY		

Sample Collected:	10/14/1992	Findings:	193.000 MG/L
Chemical:	TOTAL HARDNESS (AS CACO3)		
Sample Collected:	10/14/1992	Findings:	44.200 MG/L
Chemical:	CALCIUM		
Sample Collected:	10/14/1992	Findings:	20.000 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	10/14/1992	Findings:	15.200 MG/L
Chemical:	SODIUM		
Sample Collected:	10/14/1992	Findings:	5.320 MG/L
Chemical:	POTASSIUM		
Sample Collected:	10/14/1992	Findings:	12.000 MG/L
Chemical:	CHLORIDE		
Sample Collected:	10/14/1992	Findings:	4.000 UG/L
Chemical:	ARSENIC		
Sample Collected:	10/14/1992	Findings:	190.000 UG/L
Chemical:	BARIUM		
Sample Collected:	10/14/1992	Findings:	209.000 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	10/14/1992	Findings:	- .010
Chemical:	LANGELIER INDEX @ SOURCE TEMP.		
Sample Collected:	10/14/1992	Findings:	.300 NTU
Chemical:	TURBIDITY (LAB)		
Sample Collected:	02/10/1993	Findings:	.300 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	04/29/1993	Findings:	.600 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	07/28/1993	Findings:	5.300 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	07/28/1993	Findings:	.800 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	07/28/1993	Findings:	9.000 PCI/L
Chemical:	GROSS BETA		
Sample Collected:	07/28/1993	Findings:	1.600 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	08/31/1994	Findings:	447.000 UMHO
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	08/31/1994	Findings:	7.700
Chemical:	PH (LABORATORY)		
Sample Collected:	08/31/1994	Findings:	170.000 MG/L
Chemical:	TOTAL ALKALINITY (AS CACO3)		
Sample Collected:	08/31/1994	Findings:	210.000 MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	08/31/1994	Findings:	1300.000 UG/L
Chemical:	NITRATE NITROGEN (NO3-N)		
Sample Collected:	08/31/1994	Findings:	200.000 MG/L
Chemical:	TOTAL HARDNESS (AS CACO3)		
Sample Collected:	08/31/1994	Findings:	46.000 MG/L
Chemical:	CALCIUM		
Sample Collected:	08/31/1994	Findings:	21.000 MG/L
Chemical:	MAGNESIUM		

Sample Collected:	08/31/1994	Findings:	16.000 MG/L
Chemical:	SODIUM		
Sample Collected:	08/31/1994	Findings:	5.500 MG/L
Chemical:	POTASSIUM		
Sample Collected:	08/31/1994	Findings:	11.000 MG/L
Chemical:	CHLORIDE		
Sample Collected:	08/31/1994	Findings:	160.000 UG/L
Chemical:	BARIUM		
Sample Collected:	08/31/1994	Findings:	48.000 UG/L
Chemical:	SILVER		
Sample Collected:	08/31/1994	Findings:	.010 UG/L
Chemical:	FOAMING AGENTS (MBAS)		
Sample Collected:	08/31/1994	Findings:	270.000 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	08/31/1994	Findings:	5.700 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08/31/1994	Findings:	1300.000 UG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	05/09/1995	Findings:	2.780 PCI/L
Chemical:	URANIUM		
Sample Collected:	05/09/1995	Findings:	.890 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	08/15/1995	Findings:	4.300 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08/15/1995	Findings:	2.660 PCI/L
Chemical:	URANIUM		
Sample Collected:	08/15/1995	Findings:	.900 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	12/07/1995	Findings:	.500 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	06/05/1996	Findings:	4.100 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09/18/1996	Findings:	5.700 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02/26/1997	Findings:	3.650 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	02/26/1997	Findings:	1.280 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		

4
West
1/2 - 1 Mile
Lower

FED USGS **USGS0168807**

Agency:	USGS	Site ID:	380327121184101
Site Name:	002N006E03D003M		
Dec. Latitude:	38.05742		
Dec. Longitude:	-121.31245		
Coord Sys:	NAD83		
State:	CA		
County:	San Joaquin County		
Altitude:	22.00		
Hydrologic code:	18040005		
Topographic:	Valley flat		
Site Type:	Ground-water other than Spring		
Const Date:	Not Reported	Inven Date:	Not Reported
Well Type:	Single well, other than collector or Ranney type		
Primary Aquifer:	Not Reported		
Aquifer type:	Not Reported	Well depth:	45.0
Hole depth:	45.0	Source:	Not Reported
Project no:	Not Reported		

5
East
1/2 - 1 Mile
Higher

FED USGS **USGS0168806**

Agency:	USGS	Site ID:	380326121163201
Site Name:	002N006E01D002M		
Dec. Latitude:	38.05714		
Dec. Longitude:	-121.27661		
Coord Sys:	NAD83		
State:	CA		
County:	San Joaquin County		
Altitude:	33.00		
Hydrologic code:	18040005		
Topographic:	Valley flat		
Site Type:	Ground-water other than Spring		
Const Date:	19630516	Inven Date:	Not Reported
Well Type:	Single well, other than collector or Ranney type		
Primary Aquifer:	Not Reported		
Aquifer type:	Not Reported	Well depth:	664
Hole depth:	740	Source:	Not Reported
Project no:	Not Reported		

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Direction Distance	Database	EDR ID Number

NNE
1/8 - 1/4 Mile

OIL_GAS **CA00002072**

Well Number:	S1	Status:	Plugged and abandoned-dry hole
API Number:	07700519	Operator:	BP Exploration U.S.A. Inc.
Latitude:	38.06076	Longitude:	-121.29068
Region:	6	Lease:	North Stockton Unit A
Section:	35	Township:	03N
Range:	06E	Map Number:	611
Base and Meridian:	Mount Diablo	Total Depth:	6212.00000
Spud Date:	6/29/1962	Abandonment Date:	7/20/1962

WSW
1 - 2 Miles

OIL_GAS **CA00002095**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	07700477	Operator:	E.C. Brown, Operator
Latitude:	38.05352	Longitude:	-121.31052
Region:	6	Lease:	North Stockton Unit A
Section:	03	Township:	02N
Range:	06E	Map Number:	606
Base and Meridian:	Mount Diablo	Total Depth:	4600.00000
Spud Date:	8/30/1962	Abandonment Date:	9/3/1962

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for SAN JOAQUIN County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 95212

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	2.700 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002. 7.5-Minute DEMs correspond to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the national Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STATE RECORDS

California Drinking Water Quality Database
Source: Department of Health Services
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

California Oil and Gas Well Locations for District 2, 3, 5 and 6
Source: Department of Conservation
Telephone: 916-323-1779

RADON

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
LINDEN	U001603857	ROSA RANCH	EIGHT MILE RD. - 1 MI. E. OF T	95212	HIST UST
LODI	S104164855	CHARLEY JACOBS	13889 HWY 12 W	95240	Cortese, LUST
LODI	S105084006	P G & E/TERMINOUS SUBSTATION	8735 HWY 12	95242	HAZNET
LODI	S104735713	VICTOR MEATS	18846 HWY 99 N	95240	LUST
STOCKTON	S104572108	CESAR'S TRUCKING	HWY 4 1/2 MI W OF STOCKTON	00000	HAZNET
STOCKTON	S103678858	ANTELOPE MOVING AND STORAGE	HIGHWAY 4 / WILSON WAY	00000	HAZNET
STOCKTON	S105084154	MCKEE FOODS CORP	HWY 4 @ WILSON WAY	00000	HAZNET
STOCKTON	S105725542	SIGNATURE FRUIT (TOMATO) INC PLANT 4	3200 E 8 MILE RD / RURAL RT 2	95212	HAZNET
STOCKTON	S105087601	PACIFIC MOTOR TRANSPORT PACER DIVISION	HWY 99 SOUTH BOUND SOUTH OF HWY 4	95210	HAZNET
STOCKTON	S103066342	SPEEDY FOODS	8200 HWY 99 N	95212	Cortese, LUST
STOCKTON	S103665999	AUTO FACTORY	5942 HWY 99 FRONTAGE	95212	HAZNET
STOCKTON	S103984202	REY BAGLIETTO/FRANK RAUZI	8200 HWY 99	95207	HAZNET
STOCKTON	S105026786	THE FUEL MART	10878 HWY 99 N	95212	Cortese, LUST
STOCKTON	S105026789	THE AUTO FACTORY	5942 HWY 99 E	95212	Cortese, LUST
STOCKTON	U003785864	MORADA CHEVRON	10878 HWY 99	95212	UST
STOCKTON	U003786311	ARCO STATION #595*	6100 HWY 99	95205	UST
STOCKTON	S104572152	FRONTIER PERFORMANCE LUBRICANTS INC.	HWY 99 N BOUND STOCKTON ON CHARTER W	00000	HAZNET
STOCKTON	S104556965	WALMART STORES INC	HWY 99 / CHARTER	00000	HAZNET
STOCKTON	S105628949	RIO CALAVERAS ELEMENTARY SCHOOL	BIANCHI ROAD/MARCH LANE/WEST LANE	95210	SCH
STOCKTON	S105892082	STOCKTON REDEVEL. AGENCY - SOUTHSHORE PARCELS	SW CORNER OF THE INTERSECTION OF WEST WEBER AVE AN		CA SLIC
STOCKTON	S104228653	DURANGO TIRE (CHP SITE)	2749 EL DORADO STREET		SWF/LF
STOCKTON	U001603853	KURTZ'S FUEL MART	10807 N HIGHWAY 99	95212	HIST UST
STOCKTON	S104566099	BAGLEY ENTERPRISES,INC DBA MORADA CHEVRO	10878 N HWY 99	95212	HAZNET
STOCKTON	S105092066	FULL CIRCLE RESTORATION	10327 N HWY 88	95212	HAZNET
STOCKTON	S105266593	MARAUDER CLEANERS	10060 N HWY 99	95212	CLEANERS
STOCKTON	S103680223	SAN JOAQUIN FLOOD CONTROL AGENCY	WEST LANE BET 8 MILE RD	00000	HAZNET
STOCKTON	S105691993	WEST LANE MARKET (WLM)	9484 WEST LANE	95210	LUST
STOCKTON	1006805059	CHEVRON STATION NO 200764	4747 WEST LN	95210	RCRIS-SQG, FINDS
STOCKTON	S105892024	GUARANTY FEDERAL BANK**	201 N. MAIN STREET, MANTECA / 501 WEST WEBER AVE		CA SLIC
STOCKTON	S103993172	UNION PACIFIC RAILROAD	8 MILE RD APPRX 1 1/2 MILE W OF HWY 99	00000	HAZNET
STOCKTON	S103680227	CALIF WATER SVC CO STK TANK 8	WEST SONOMA / PLYMOUTH RD	00000	HAZNET
STOCKTON	S105557310	VOLPI FARMS	14210 W. STATE ROUTE 4		CA SLIC
STOCKTON	S103961458	DR LAURENT VIEN DDS	7743 N WEST LN_STE C5	95210	HAZNET

Site	Database(s)	EDR ID Number EPA ID Number
ROSA RANCH EIGHT MILE RD. - 1 MI. E. OF T LINDEN, CA 95212	HIST UST	U001603857 N/A

UST HIST:

Facility ID:	28418	Container Num:	1
Tank Num:	1	Year Installed:	1970
Tank Capacity:	300		
Tank Used for:	PRODUCT	Tank Construction:	Not reported
Type of Fuel:	REGULAR		
Leak Detection:	Stock Inventor	Telephone:	(209) 931-1815
Contact Name:	JOHN DELUCCHI	Region:	STATE
Total Tanks:	1	Other Type:	FARMING
Facility Type:	2		

CHARLEY JACOBS 13889 HWY 12 W LODI, CA 95240	Cortese LUST	S104164855 N/A

CORTESE:

Reg Id:	390239
Region:	CORTESE
Reg By:	Leaking Underground Storage Tanks

State LUST:

Cross Street:	GLASSCOCK		
Qty Leaked:	Not reported		
Case Number	390239		
Reg Board:	0		
Chemical:	Lead		
Lead Agency:	Local Agency		
Local Agency :	0		
Case Type:	Soil only		
Status:	No Action		
Review Date:	Not reported	Confirm Leak:	Not reported
Workplan:	1/1/65	Prelim Assess:	1/1/65
Pollution Char:	Not reported	Remed Plan:	Not reported
Remed Action:	Not reported		
Monitoring:	Not reported		
Close Date:	Not reported		
Release Date:	06/30/1988		
Cleanup Fund Id :	Not reported		
Discover Date :	04/27/1988		
Enforcement Dt :	1/1/65		
Enf Type:	None Taken		
Enter Date :	07/28/1988		
Funding:	Not reported		
Staff Initials:	MIC		
How Discovered:	Tank Closure		
How Stopped:	Not reported		
Interim :	Not reported		
Leak Cause:	Not reported		
Leak Source:	Not reported		
MTBE Date :	03/31/2000		
Max MTBE GW :	500 Parts per Billion		
MTBE Tested:	MTBE Detected. Site tested for MTBE & MTBE detected		
Priority:	Low priority. Priority ranking can change over time.		
Local Case # :	1905		
Beneficial:	Not reported		
Staff :	JLB		
GW Qualifier :	>		

Site	Database(s)	EDR ID Number EPA ID Number
CHARLEY JACOBS (Continued)		S104164855

Max MTBE Soil : 2 Parts per Million
Soil Qualifier : >
Hydr Basin #: Not reported
Operator : CHARLEY JACOBS
Oversight Prgm: Local Oversight Program UST
Oversight Prgm : LOP
Review Date : 06/30/1988
Stop Date : / /
Work Suspended :No
Responsible PartyJACOBS, CHARLEY
RP Address: 13889 WEST HWY 12, LODI, CA 95240
Global Id: T0607700170
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 3
Mtbe Fuel: 0
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

LUST Region 5:
Substance: Not reported
Case Type: Soil only
Program: Local Oversite Program - SWB Sponsored Program
Staff Initials: JLB Case Number: 390239
Status: Preliminary site assessment underway
MTBE Code: 4
Lead Agency: Local

P G & E/TERMINOUS SUBSTATION
8735 HWY 12
LODI, CA 95242

HAZNET | S105084006 | N/A

HAZNET:
Gepaid: CAC001479944
TSD EPA ID: CAT000646117
Gen County: San Joaquin
Tsd County: Kings
Tons: 5.0085
Waste Category: Polychlorinated biphenyls and material containing PCB's
Disposal Method: Disposal, Land Fill
Contact: PACIFIC GAS & ELECTRIC
Telephone: (000) 000-0000
Mailing Address: 2730 GATEWAY OAKS DR STE 120
SACRAMENTO, CA 95833
County San Joaquin

Gepaid: CAC001479944
TSD EPA ID: UTD981552177
Gen County: San Joaquin
Tsd County: 99
Tons: 2.4739
Waste Category: Liquids with polychlorinated biphenyls > 50 mg/l
Disposal Method: Not reported
Contact: PACIFIC GAS & ELECTRIC
Telephone: (000) 000-0000
Mailing Address: 2730 GATEWAY OAKS DR STE 120

Site	Database(s)	EDR ID Number EPA ID Number
P G & E/TERMINOUS SUBSTATION (Continued)		S105084006
SACRAMENTO, CA 95833 County San Joaquin		
VICTOR MEATS **18846 HWY 99 N** **LODI, CA 95240**	**LUST**	**S104735713** **N/A**

State LUST:

Cross Street:	Not reported		
Qty Leaked:	Not reported		
Case Number	391103		
Reg Board:	0		
Chemical:	Diesel		
Lead Agency:	Local Agency		
Local Agency :	0		
Case Type:	Soil only		
Status:	No Action		
Review Date:	Not reported	Confirm Leak:	Not reported
Workplan:	Not reported	Prelim Assess:	Not reported
Pollution Char:	Not reported	Remed Plan:	Not reported
Remed Action:	Not reported		
Monitoring:	Not reported		
Close Date:	Not reported		
Release Date:	09/24/2002		
Cleanup Fund Id :	Not reported		
Discover Date :	08/17/2000		
Enforcement Dt :	1/1/65		
Enf Type:	None Taken		
Enter Date :	10/06/2000		
Funding:	Not reported		
Staff Initials:	HAR		
How Discovered:	Tank Closure		
How Stopped:	Not reported		
Interim :	Not reported		
Leak Cause:	Not reported		
Leak Source:	Not reported		
MTBE Date :	/ /		
Max MTBE GW :	0 Parts per Billion		
MTBE Tested:	MTBE Detected. Site tested for MTBE & MTBE detected		
Priority:	Low priority. Priority ranking can change over time.		
Local Case # :	883		
Beneficial:	Not reported		
Staff :	JLB		
GW Qualifier :	Not reported		
Max MTBE Soil :	0.005 Parts per Million		
Soil Qualifier :	=		
Hydr Basin #:	Not reported		
Operator :	BOB JONES		
Oversight Prgm:	Local Oversight Program UST		
Oversight Prgm :	LOP		
Review Date :	09/24/2002		
Stop Date :	/ /		
Work Suspended :	No		
Responsible Party	BOB JONES		
RP Address:	639 E LOCKEFORD ST, LODI, CA 95240		
Global Id:	T0607793651		
Org Name:	Not reported		
Contact Person:	Not reported		

Site	Database(s)	EDR ID Number EPA ID Number
VICTOR MEATS (Continued)		S104735713

MTBE Conc: 1
Mtbe Fuel: 0
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

LUST Region 5:
Substance: DIESEL
Case Type: Soil only
Program: Local Oversite Program - SWB Sponsored Program
Staff Initials: JLB Case Number: 391103
Status: Not reported
MTBE Code: N/A
Lead Agency: Local

CESAR'S TRUCKING
HWY 4 1/2 MI W OF STOCKTON
STOCKTON, CA 00000

HAZNET S104572108
N/A

HAZNET:
Gepaid: CAC002215241
TSD EPA ID: CAT000646117
Gen County: San Joaquin
Tsd County: Kings
Tons: 0.19
Waste Category: Unspecified oil-containing waste
Disposal Method: Not reported
Contact: CESAR QUIJANO
Telephone: (818) 767-7777
Mailing Address: 9175 SAN FERNANDO RD
SUN VALLEY, CA 91353
County San Joaquin

Gepaid: CAC002215241
TSD EPA ID: CAT000646117
Gen County: San Joaquin
Tsd County: Kings
Tons: 0.19
Waste Category: Unspecified oil-containing waste
Disposal Method: Disposal, Land Fill
Contact: CESAR QUIJANO
Telephone: (818) 767-7777
Mailing Address: 9175 SAN FERNANDO RD
SUN VALLEY, CA 91353
County San Joaquin

ANTELOPE MOVING AND STORAGE
HIGHWAY 4 / WILSON WAY
STOCKTON, CA 00000

HAZNET S103678858
N/A

Site	Database(s)	EDR ID Number EPA ID Number
ANTELOPE MOVING AND STORAGE (Continued)		S103678858

HAZNET:

Gepaid:	CAC001276520
TSD EPA ID:	CAD044003556
Gen County:	San Joaquin
Tsd County:	Yolo
Tons:	1.0425
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Transfer Station
Contact:	CURTIS TUCKER
Telephone:	(916) 485-7495
Mailing Address:	3298 ORANGE GROVE AVENUE NORTH HIGHLANDS, CA 95660
County	San Joaquin

MCKEE FOODS CORP **HWY 4 @ WILSON WAY** **STOCKTON, CA 00000**	HAZNET	S105084154 N/A

HAZNET:

Gepaid:	CAC002192025
TSD EPA ID:	CAD044003556
Gen County:	San Joaquin
Tsd County:	Yolo
Tons:	.2293
Waste Category:	Waste oil and mixed oil
Disposal Method:	Transfer Station
Contact:	MCKEE FOOD CORP
Telephone:	(423) 238-7111
Mailing Address:	PO BOX 750 COLLEGEDALE, TN 37315
County	San Joaquin

Gepaid:	CAC002192025
TSD EPA ID:	CAT080033681
Gen County:	San Joaquin
Tsd County:	Los Angeles
Tons:	.5500
Waste Category:	Other organic solids
Disposal Method:	Disposal, Land Fill
Contact:	MCKEE FOOD CORP
Telephone:	(423) 238-7111
Mailing Address:	PO BOX 750 COLLEGEDALE, TN 37315
County	San Joaquin

SIGNATURE FRUIT (TOMATO) INC PLANT 4 **3200 E 8 MILE RD / RURAL RT 2** **STOCKTON, CA 95212**	HAZNET	S105725542 N/A

Site	Database(s)	EDR ID Number EPA ID Number
SIGNATURE FRUIT (TOMATO) INC PLANT 4 (Continued)		S105725542

HAZNET:

Gepaid:	CAL000223341
TSD EPA ID:	CAD059494310
Gen County:	San Joaquin
Tsd County:	Santa Clara
Tons:	0.12
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Disposal, Other
Contact:	WILL HENDERSON - ENV MGR
Telephone:	(209) 572-5960
Mailing Address:	2260 TENAYA DR MODESTO, CA 95354 - 1211
County	San Joaquin

Gepaid:	CAL000223341
TSD EPA ID:	CAD059494310
Gen County:	San Joaquin
Tsd County:	Santa Clara
Tons:	0.25
Waste Category:	Other organic solids
Disposal Method:	Transfer Station
Contact:	WILL HENDERSON - ENV MGR
Telephone:	(209) 572-5960
Mailing Address:	2260 TENAYA DR MODESTO, CA 95354 - 1211
County	San Joaquin

Gepaid:	CAL000223341
TSD EPA ID:	CAD009452657
Gen County:	San Joaquin
Tsd County:	San Mateo
Tons:	0.22
Waste Category:	Unspecified alkaline solution
Disposal Method:	Recycler
Contact:	WILL HENDERSON - ENV MGR
Telephone:	(209) 572-5960
Mailing Address:	2260 TENAYA DR MODESTO, CA 95354 - 1211
County	San Joaquin

Gepaid:	CAL000223341
TSD EPA ID:	CAD009452657
Gen County:	San Joaquin
Tsd County:	San Mateo
Tons:	0.22
Waste Category:	Alkaline solution without metals (pH > 12.5)
Disposal Method:	Recycler
Contact:	WILL HENDERSON - ENV MGR
Telephone:	(209) 572-5960
Mailing Address:	2260 TENAYA DR MODESTO, CA 95354 - 1211
County	San Joaquin

Site	Database(s)	EDR ID Number EPA ID Number
PACIFIC MOTOR TRANSPORT PACER DIVISION **HWY 99 SOUTH BOUND SOUTH OF HWY 4** **STOCKTON, CA 95210**	**HAZNET**	**S105087601** **N/A**

HAZNET:

Gepaid:	CAC002297953
TSD EPA ID:	CAT000646117
Gen County:	San Joaquin
Tsd County:	Kings
Tons:	71.6380
Waste Category:	Contaminated soil from site clean-ups
Disposal Method:	Disposal, Land Fill
Contact:	PACIFIC MOTOR TRANSPORT INC
Telephone:	(972) 224-8121
Mailing Address:	PO BOX 1105 DESOTO, TX 75123
County	San Joaquin

SPEEDY FOODS **8200 HWY 99 N** **STOCKTON, CA 95212**	**Cortese** **LUST**	**S103066342** **N/A**

CORTESE:

Reg Id:	390911
Region:	CORTESE
Reg By:	Leaking Underground Storage Tanks

State LUST:

Cross Street:	Not reported		
Qty Leaked:	Not reported		
Case Number	390911		
Reg Board:	0		
Chemical:	Gasoline		
Lead Agency:	Local Agency		
Local Agency :	0		
Case Type:	Aquifer affected		
Status:	No Action		
Review Date:	11/21/1995	Confirm Leak:	11/21/1995
Workplan:	Not reported	Prelim Assess:	Not reported
Pollution Char:	Not reported	Remed Plan:	Not reported
Remed Action:	Not reported		
Monitoring:	Not reported		
Close Date:	Not reported		
Release Date:	01/21/2002		
Cleanup Fund Id :	Not reported		
Discover Date :	11/21/1995		
Enforcement Dt :	5/16/00		
Enf Type:	LTR		
Enter Date :	03/19/1996		
Funding:	Not reported		
Staff Initials:	JEF		
How Discovered:	Other Means		
How Stopped:	Not reported		
Interim :	Not reported		
Leak Cause:	Not reported		
Leak Source:	Not reported		
MTBE Date :	10/12/1999		
Max MTBE GW :	44000 Parts per Billion		
MTBE Tested:	MTBE Detected. Site tested for MTBE & MTBE detected		
Priority:	Low priority. Priority ranking can change over time.		
Local Case # :	1612		

Site	Database(s)	EDR ID Number EPA ID Number
SPEEDY FOODS (Continued)		S103066342

Beneficial: Not reported
Staff : JLB
GW Qualifier : =
Max MTBE Soil : 3.7 Parts per Million
Soil Qualifier : =
Hydr Basin #: Not reported
Operator : Not reported
Oversight Prgm: Local Oversight Program UST
Oversight Prgm : LOP
Review Date : 01/21/2002
Stop Date : / /
Work Suspended :No
Responsible PartySPEEDY FOODS
RP Address: 8200 HWY 99 N, STOCKTON, CA 95902
Global Id: T0607700733
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 9
Mtbe Fuel: 1
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

LUST Region 5:
Substance: GASOLINE
Case Type: Aquifer affected
Program: Local Oversite Program - SWB Sponsored Program
Staff Initials: JLB Case Number: 390911
Status: Preliminary site assessment workplan submitted
MTBE Code: 8
Lead Agency: Local

AUTO FACTORY **5942 HWY 99 FRONTAGE** **STOCKTON, CA 95212**	**HAZNET**	**S103665999** **N/A**

HAZNET:
Gepaid: CAC001063296
TSD EPA ID: CAD083166728
Gen County: San Joaquin
Tsd County: Stanislaus
Tons: .5004
Waste Category: Unspecified oil-containing waste
Disposal Method: Recycler
Contact: AUTO FACTORY
Telephone: (000) 000-0000
Mailing Address: 5942 HWY 99 FRONTAGE
STOCKTON, CA 95212
County San Joaquin

Site	Database(s)	EDR ID Number EPA ID Number
REY BAGLIETTO/FRANK RAUZI **8200 HWY 99** **STOCKTON, CA 95207**	**HAZNET**	**S103984202** **N/A**

HAZNET:

Gepaid:	CAC001253760
TSD EPA ID:	NVD982358483
Gen County:	San Joaquin
Tsd County:	99
Tons:	1.9807
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Recycler
Contact:	REY BAGLIETTO/FRANK RAUZI
Telephone:	(000) 000-0000
Mailing Address:	301 SO AURORA ST STOCKTON, CA 95203
County	San Joaquin

THE FUEL MART **10878 HWY 99 N** **STOCKTON, CA 95212**	**Cortese** **LUST**	**S105026786** **N/A**

CORTESE:

Reg Id:	390623
Region:	CORTESE
Reg By:	Leaking Underground Storage Tanks

State LUST:

Cross Street:	8 MILE RD		
Qty Leaked:	Not reported		
Case Number	390623		
Reg Board:	0		
Chemical:	Unleaded Gasoline		
Lead Agency:	Local Agency		
Local Agency :	0		
Case Type:	Soil only		
Status:	Case Closed		
Review Date:	06/05/1991	Confirm Leak:	06/05/1991
Workplan:	Not reported	Prelim Assess:	Not reported
Pollution Char:	Not reported	Remed Plan:	Not reported
Remed Action:	Not reported		
Monitoring:	Not reported		
Close Date:	10/17/1995		
Release Date:	10/24/1995		
Cleanup Fund Id :	Not reported		
Discover Date :	06/05/1991		
Enforcement Dt :	1/1/65		
Enf Type:	None Taken		
Enter Date :	06/29/1991		
Funding:	Not reported		
Staff Initials:	MAR		
How Discovered:	Other Means		
How Stopped:	Not reported		
Interim :	Not reported		
Leak Cause:	Not reported		
Leak Source:	Not reported		
MTBE Date :	/ /		
Max MTBE GW :	0 Parts per Billion		
MTBE Tested:	Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.		
Priority:	Low priority. Priority ranking can change over time.		
Local Case # :	1598		

Site	Database(s)	EDR ID Number EPA ID Number
THE FUEL MART (Continued)		S105026786

Beneficial: Not reported
Staff : JLB
GW Qualifier : Not reported
Max MTBE Soil : Not reported
Soil Qualifier : Not reported
Hydr Basin #: Not reported
Operator : BAGLEY ENTERPRISES
Oversight Prgm: Local Oversight Program UST
Oversight Prgm : LOP
Review Date : 10/24/1995
Stop Date : / /
Work Suspended :No
Responsible PartyKAUTZ, KARL
RP Address: 5490 BEAR CREED E, LODI, CA 95206
Global Id: T0607700485
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 0
Mtbe Fuel: 1
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

LUST Region 5:
Substance: UNLEAD GASOLINE
Case Type: Soil only
Program: Local Oversite Program - SWB Sponsored Program
Staff Initials: JLB Case Number: 390623
Status: Case Closed
MTBE Code: N/A
Lead Agency: Local

THE AUTO FACTORY **5942 HWY 99 E** **STOCKTON, CA 95212**	Cortese LUST	S105026789 N/A

CORTESE:
Reg Id: 391092
Region: CORTESE
Reg By: Leaking Underground Storage Tanks

State LUST:
Cross Street: HAMMER LN
Qty Leaked: Not reported
Case Number 391092
Reg Board: 0
Chemical: Gasoline
Lead Agency: Local Agency
Local Agency : 0
Case Type: Aquifer affected
Status: Leak being confirmed
Review Date: 10/14/1999 Confirm Leak: 10/14/1999
Workplan: Not reported Prelim Assess: Not reported
Pollution Char: Not reported Remed Plan: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: Not reported

Site	Database(s)	EDR ID Number EPA ID Number
THE AUTO FACTORY (Continued)		S105026789

Release Date: 09/24/2002
Cleanup Fund Id : Not reported
Discover Date : 10/14/1999
Enforcement Dt : 1/1/65
Enf Type: None Taken
Enter Date : 02/11/2000
Funding: Not reported
Staff Initials: LOR
How Discovered: Tank Closure
How Stopped: Not reported
Interim : Not reported
Leak Cause: Not reported
Leak Source: Not reported
MTBE Date : 07/03/2000
Max MTBE GW : 1 Parts per Billion
MTBE Tested: MTBE Detected. Site tested for MTBE & MTBE detected
Priority: High priority
Local Case # : 708
Beneficial: Not reported
Staff : JLB
GW Qualifier : <
Max MTBE Soil : Not reported
Soil Qualifier : =
Hydr Basin #: Not reported
Operator : Not reported
Oversight Prgm: Local Oversight Program UST
Oversight Prgm : LOP
Review Date : 09/24/2002
Stop Date : / /
Work Suspended :No
Responsible PartyTHE AUTO FACTORY
RP Address: 8204 LAN ARC DR, STOCKTON, CA 95210
Global Id: T0607700907
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 2
Mtbe Fuel: 1
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

LUST Region 5:
Substance: GASOLINE
Case Type: Aquifer affected
Program: Local Oversite Program - SWB Sponsored Program
Staff Initials: JLB Case Number: 391092
Status: Leak being confirmed
MTBE Code: 0
Lead Agency: Local

Site	Database(s)	EDR ID Number EPA ID Number
MORADA CHEVRON **10878 HWY 99** **STOCKTON, CA 95212**	**UST**	**U003785864** **N/A**

State UST:
Facility ID: FA0001146
Region: STATE
Local Agency: 39000

ARCO STATION #595* **6100 HWY 99** **STOCKTON, CA 95205**	**UST**	**U003786311** **N/A**

State UST:
Facility ID: FA0003630
Region: STATE
Local Agency: 39000

FRONTIER PERFORMANCE LUBRICANTS INC. **HWY 99 N BOUND STOCKTON ON CHARTER WY** **STOCKTON, CA 00000**	**HAZNET**	**S104572152** **N/A**

HAZNET:
Gepaid: CAC002215729
TSD EPA ID: CAT080033681
Gen County: San Joaquin
Tsd County: Los Angeles
Tons: 3.2
Waste Category: Other organic solids
Disposal Method: Disposal, Land Fill
Contact: FRONTIER PERFORMANCE LUBRCNTS
Telephone: (209) 334-6353
Mailing Address: PO BOX 1777
LODI, CA 95241
County San Joaquin

WALMART STORES INC **HWY 99 / CHARTER** **STOCKTON, CA 00000**	**HAZNET**	**S104566965** **N/A**

HAZNET:
Gepaid: CAC001386072
TSD EPA ID: CAT000646117
Gen County: San Joaquin
Tsd County: Kings
Tons: 1.5
Waste Category: Contaminated soil from site clean-ups
Disposal Method: Disposal, Land Fill
Contact: WALMART STORES INC
Telephone: (501) 277-9862
Mailing Address: 702 SW 8TH ST
BENTONVILLE, AR 72716
County San Joaquin

Site	Database(s)	EDR ID Number EPA ID Number
RIO CALAVERAS ELEMENTARY SCHOOL **BIANCHI ROAD/MARCH LANE/WEST LANE** **STOCKTON, CA 95210**	**SCH**	**S105628949** **N/A**

SCH:

Facility ID	39010031
Dtsc Region Code :	1
Region Code Definition :	SACRAMENTO
County Code :	39
Site Name Under :	RIO CALAVERAS ELEMENTARY SCHOOL
Current Status Date :	12182001
Current Status Code :	NA
Current Status :	NO ACTION - FOR CALMORTGAGE ONLY
Lead Agency Code :	DTSC
Lead Agency :	DEPT OF TOXIC SUBSTANCES CONTROL
Site Type Code :	SCHOL
Site Type :	SCHOOL SITE PROPERTY
National Priorities List :	Not reported
Tier :	Not reported
Source Of Funding Code :	Not reported
Staff Member :	FLOPEZ2
Supervisor :	Not reported
Sic Code :	01
Sic Code Definition :	AGRICULTURAL PRODUCTION - CROPS
Site Mitigatn & Brnflds Reuse Prog (SMBR) Code :	SE
SMBR Branch :	SCHOOL EVALUATION
Regional Water Quality Control Board :	Not reported
RWQCB Definition :	Not reported
Site Access Controlled :	Not reported
Listed In Haz Wst & Substncs Sites List (CORTESE)	Not reported
Date Hazard Ranked :	Not reported
GW Contamination Suspected :	Not reported
# Of Sources Contributing To Contamination :	0.00000
Lat/Long :	0.00000° 0.00000′ 0.00000″ / 0.00000° 0.00000′ 0.00000″
Direction Lat :	Not reported
Direction Long :	Not reported
Lat/long Method :	Not reported
Entity Lat/long Coordinates Refer To :	Not reported
State Assembly Distt Code :	17
State Senate Distt Code :	05
Identifying Code:	CSTAR
ID Value:	104244-11
Other ID Desc:	CALSTARS CODE
Alternate Name(s):	RIO CALAVERAS ELEMENTARY SCHOOL
Alternate Name(s):	STOCKTON USD
Address(es) :	BIANCHI ROAD/MARCH LANE/WEST LANE STOCKTON, CA 95210
Background Info :	This 1.3-acre Site was historically used for agricultural
Background Info :	purposes. However, the Site has been fallow for more than
Background Info :	5 years and has been used for grazing and pasture land from at
Background Info :	least 1937.
Facility Id :	39010031
AWP Activities Code :	1.00000
DTSC Site Activity Code :	PHSE1
Activity Code Def:	PHASE 1 - CALMORTGAGE AND SCHOOL SITE PROPERTIES
AWP Activity Id :	SCHOL
Dt Activity Due For Completion :	Not reported
Revised Due Date :	Not reported
Date Activity Completed :	12182001

Site	Database(s)	EDR ID Number EPA ID Number

RIO CALAVERAS ELEMENTARY SCHOOL (Continued) — S105628949

Est # Of Person-years To Complete : 0.00000
Est. Size Of An Activity Code : Not reported
Site Status When Activity Commitment Made : NA
Status Code Definition : NO ACTION - FOR CALMORTGAGE ONLY
Cubic Yards Of Solids Removed At Completion : 0.00000
Gallons Of Liquid Removed Upon Completion : 0.00000
Cubic Yards Of Solids Treated Upon Completion : 0.00000
Actvty Deltd Via Commitmnt/Completns Screen :
Special Program Code: Not reported
Special Program : Not reported
Comments Date : 12182001
Comments : Phase 1 - Pursuant to an agreement between the Department of Toxic Substances Control (DTSC) and the California Department of Education, DTSC's Site Mitigation Program completed a review of a Phase 1 Environmental Assessment and has made a "No Action" determination for this Site.

STOCKTON REDEVEL. AGENCY - SOUTHSHORE PARCELS — CA SLIC — **S105892082**
SW CORNER OF THE INTERSECTION OF WEST WEBER AVE AN — **N/A**
STOCKTON, CA

SLIC Region 5:
Facility Status: RI
Pollutant: TPH - g, d, benzene
Report Date: A
Lead Agency: DLL
Site Added: Not reported
Identify RP: 7/17/00
Date Resolved: Not reported
NFA: Not reported
Unit: Facility is a Spill or site
Date Filed: A

DURANGO TIRE (CHP SITE) — SWF/LF — **S104228653**
2749 EL DORADO STREET — **N/A**
STOCKTON, CA

LF:
Facility ID: 39-TI-1055
Operator: Durango Tire
Operator Phone: (209) 943-5977
Operator Addr: 2749 S. El Dorado Street
Stockton, CA 95206
Owner: Durango Tire
Owner Address: Not reported
321 First Avenue South
Pacheco, CA 94553
Owner Telephone: Not reported
Activity: Tire Dealer
Operator's Status: Active
Regulation Status: Excluded
Region: STATE
Lat/Long: 38 / -121
Permit Date: Not reported
Accepted Waste: Tires, Passenger,Tires, Truck
Restrictions:
Status : Not reported
Swisnumber : Not reported
Site Type : Not reported
Aka : Not reported

Site	Database(s)	EDR ID Number EPA ID Number
DURANGO TIRE (CHP SITE) (Continued)		S104228653

Type Of Waste :	Not reported
Disposal Area :	Not reported
SWFP Date :	Not reported
WDR Number :	Not reported
Dates Of Operation :	Not reported
Closure Approved :	Not reported
Date Of Field Units :	Not reported
Surface Condition :	Not reported
Landfill Gas :	Not reported
Leachate :	Not reported
Emergency Response :	Not reported
Other Recommendation :	Not reported
Reassess Site :	Not reported
Priority For Site Assessment :	Not reported
Lea Date :	Not reported
Explanation:	Not Reported
No Further Action:	Not Reported
Permitted Throughput with Units:	1500
Permitted Throughput with Units:	1500
Permitted Throughput with Units:	1500
Actual Throughput with Units:	Tires
Actual Capacity with Units:	Not reported
Permitted Capacity with Units:	Not reported
Remaining Capacity with Units:	Tires
Permitted Total Acreage:	1
Inspection Frequency:	30 Months
Landuse Name:	Not reported
GIS Source:	Place
Permit Status:	Not reported
Category:	Waste Tire Site
Unit Number:	01
Last Waste Tire Inspection Count :	1200
Last Waste Tire Inspection Date:	11/4/99
Original Waste Tire Count:	1200
Original Waste Tire Count Date:	11/8/99
Closure Date:	/ /
Closure Type:	Not reported
Disposal Acreage:	Not reported
Remaining Capacity:	Not reported

KURTZ'S FUEL MART
10807 N HIGHWAY 99
STOCKTON, CA 95212

HIST UST U001603853
N/A

UST HIST:

Facility ID:	32859	Container Num:	1
Tank Num:	1	Year Installed:	Not reported
Tank Capacity:	10000		
Tank Used for:	PRODUCT	Tank Construction:	Not reported
Type of Fuel:	REGULAR		
Leak Detection:	None	Telephone:	(209) 931-6154
Contact Name:	EXXON	Region:	STATE
Total Tanks:	3	Other Type:	MINI-MART
Facility Type:	1		
Facility ID:	32859	Container Num:	3
Tank Num:	2	Year Installed:	1984
Tank Capacity:	8000		

Site	Database(s)	EDR ID Number EPA ID Number

KURTZ'S FUEL MART (Continued) — U001603853

Tank Used for:	PRODUCT	Tank Construction:	Not reported
Type of Fuel:	DIESEL		
Leak Detection:	Stock Inventor	Telephone:	(209) 931-6154
Contact Name:	EXXON	Region:	STATE
Total Tanks:	3	Other Type:	MINI-MART
Facility Type:	1		

Facility ID:	32859	Container Num:	2
Tank Num:	3	Year Installed:	Not reported
Tank Capacity:	10000		
Tank Used for:	PRODUCT	Tank Construction:	Not reported
Type of Fuel:	UNLEADED		
Leak Detection:	None	Telephone:	(209) 931-6154
Contact Name:	EXXON	Region:	STATE
Total Tanks:	3	Other Type:	MINI-MART
Facility Type:	1		

BAGLEY ENTERPRISES,INC DBA MORADA CHEVRO — **HAZNET** — **S104568099**, **N/A**
10878 N HWY 99
STOCKTON, CA 95212

HAZNET:

Gepaid:	CAC001469592
TSD EPA ID:	CAD000088252
Gen County:	San Joaquin
Tsd County:	Los Angeles
Tons:	0.33
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Transfer Station
Contact:	BAGLEY ENT INC DBA
Telephone:	(000) 000-0000
Mailing Address:	2370 MAGGIO CIRCLE LODI, CA 95240
County	San Joaquin

FULL CIRCLE RESTORATION — **HAZNET** — **S105092066**, **N/A**
10327 N HWY 88
STOCKTON, CA 95212

HAZNET:

Gepaid:	CAL000204800
TSD EPA ID:	CA0000084517
Gen County:	San Joaquin
Tsd County:	Sacramento
Tons:	.1542
Waste Category:	Aqueous solution with less than 10% total organic residues
Disposal Method:	Treatment, Tank
Contact:	FULL CIRCLE RESTORATION
Telephone:	(209) 367-4318
Mailing Address:	PO BOX 799 LINDEN, CA 95235
County	San Joaquin

Site	Database(s)	EDR ID Number EPA ID Number
FULL CIRCLE RESTORATION (Continued)		S105092066

Gepaid: CAL000204800
TSD EPA ID: CA0000084517
Gen County: San Joaquin
Tsd County: Sacramento
Tons: .0625
Waste Category: Aqueous solution with less than 10% total organic residues
Disposal Method: Transfer Station
Contact: FULL CIRCLE RESTORATION
Telephone: (209) 367-4318
Mailing Address: PO BOX 799
LINDEN, CA 95235
County San Joaquin

Gepaid: CAL000204800
TSD EPA ID: CA0000084517
Gen County: San Joaquin
Tsd County: Sacramento
Tons: 0.19
Waste Category: Aqueous solution with less than 10% total organic residues
Disposal Method: Transfer Station
Contact: TOM VANSTEIN
Telephone: (209) 367-4318
Mailing Address: PO BOX 799
LINDEN, CA 95235
County San Joaquin

MARAUDER CLEANERS
10060 N HWY 99
STOCKTON, CA 95212

CLEANERS S105266593
N/A

CA Cleaners:
Create Date: 10/19/01
Inactive Date: / /
EPA Id: CAL000225223
County : San Joaquin

SAN JOAQUIN FLOOD CONTROL AGENCY
WEST LANE BET 8 MILE RD
STOCKTON, CA 00000

HAZNET S103680223
N/A

HAZNET:
Gepaid: CAC001237040
TSD EPA ID: CAD000088252
Gen County: San Joaquin
Tsd County: Los Angeles
Tons: .1251
Waste Category: Off-specification, aged, or surplus inorganics
Disposal Method: Transfer Station
Contact: COUNTY OF SAN JOAQUIN
Telephone: (000) 000-0000
Mailing Address: STOCKTON CITY HALL
STOCKTON, CA 95202
County San Joaquin

Site	Database(s)	EDR ID Number EPA ID Number
SAN JOAQUIN FLOOD CONTROL AGENCY (Continued)		S103680223

Gepaid: CAC001237040
TSD EPA ID: CAD000088252
Gen County: San Joaquin
Tsd County: Los Angeles
Tons: .2293
Waste Category: Unspecified oil-containing waste
Disposal Method: Transfer Station
Contact: COUNTY OF SAN JOAQUIN
Telephone: (000) 000-0000
Mailing Address: STOCKTON CITY HALL
STOCKTON, CA 95202
County San Joaquin

Gepaid: CAC001237040
TSD EPA ID: CAD000088252
Gen County: San Joaquin
Tsd County: Los Angeles
Tons: .3544
Waste Category: Unspecified organic liquid mixture
Disposal Method: Transfer Station
Contact: COUNTY OF SAN JOAQUIN
Telephone: (000) 000-0000
Mailing Address: STOCKTON CITY HALL
STOCKTON, CA 95202
County San Joaquin

WEST LANE MARKET (WLM)
9484 WEST LANE
STOCKTON, CA 95210

LUST S105691993
N/A

State LUST:
Cross Street: MORADA LANE
Qty Leaked: Not reported
Case Number 391124
Reg Board: 0
Chemical: Solvents
Lead Agency: Local Agency
Local Agency : 0
Case Type: Undefined
Status: Case Closed
Review Date: Not reported
Workplan: Not reported
Pollution Char: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: 09/30/2002
Release Date: 10/02/2002
Cleanup Fund Id : Not reported
Discover Date : 04/18/2002
Enforcement Dt : 1/1/65
Enf Type: Not reported
Enter Date : 04/26/2002
Funding: Not reported
Staff Initials: SAM
How Discovered: Other Means
How Stopped: Not reported
Interim : Not reported
Leak Cause: Not reported

Confirm Leak: Not reported
Prelim Assess: Not reported
Remed Plan: Not reported

Site	Database(s)	EDR ID Number EPA ID Number
WEST LANE MARKET (WLM) (Continued)		S105691993

Leak Source: Not reported
MTBE Date : / /
Max MTBE GW : 0 Parts per Billion
MTBE Tested: MTBE Detected. Site tested for MTBE & MTBE detected
Priority: Low priority. Priority ranking can change over time.
Local Case # : 1333
Beneficial: Not reported
Staff : JLB
GW Qualifier : Not reported
Max MTBE Soil : 0.328 Parts per Million
Soil Qualifier : =
Hydr Basin #: Not reported
Operator : Not reported
Oversight Prgm: Local Oversight Program UST
Oversight Prgm : LOP
Review Date : 10/02/2002
Stop Date : / /
Work Suspended :No
Responsible PartyWLM
RP Address: 9484 WEST LANE STOCTON CA 95210
Global Id: T0607799500
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 1
Mtbe Fuel: 0
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

LUST Region 5:
Substance: SOLVENTS
Case Type: Undefined
Program: Local Oversite Program - SWB Sponsored Program
Staff Initials: JLB Case Number: 391124
Status: Case Closed
MTBE Code: N/A
Lead Agency: Local

CHEVRON STATION NO 200764
4747 WEST LN
STOCKTON, CA 95210

RCRIS-SQG 1006805059
FINDS CAR000120337

RCRIS:
Owner: CHEVRON PRODUCTS CO
(925) 842-5931
EPA ID: CAR000120337
Contact: KATHY NORRIS
(925) 842-5931
Classification: Small Quantity Generator
TSDF Activities: Not reported

Site	Database(s)	EDR ID Number EPA ID Number

CHEVRON STATION NO 200764 (Continued) — 1006805059

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
Facility Registry System (FRS)
Resource Conservation and Recovery Act Information system (RCRAINFO)

GUARANTY FEDERAL BANK**
201 N. MAIN STREET, MANTECA / 501 WEST WEBER AVE
STOCKTON, CA

CA SLIC — **S105892024**, **N/A**

SLIC Region 5:

Facility Status:	Preliminary Assessment		
Pollutant:	MTBE, Toluene	Unit:	Facility is a Spill or site
Report Date:	Not reported	Date Filed:	6/13/97
Lead Agency:	SJ Co.		
Site Added:	Not reported		
Identify RP:	Not reported		
Date Resolved:	Not reported		
NFA:	Not reported		

UNION PACIFIC RAILROAD
8 MILE RD APPRX 1 1/2 MILE W OF HWY 99
STOCKTON, CA 00000

HAZNET — **S103993172**, **N/A**

HAZNET:

Gepaid:	CAC001486760
TSD EPA ID:	CAD044003556
Gen County:	San Joaquin
Tsd County:	Yolo
Tons:	.5838
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Transfer Station
Contact:	UNION PACIFIC RAILROAD
Telephone:	(209) 942-5301
Mailing Address:	833 E 8TH ST STOCKTON, CA 95206
County	San Joaquin

CALIF WATER SVC CO STK TANK 8
WEST SONOMA / PLYMOUTH RD
STOCKTON, CA 00000

HAZNET — **S103680227**, **N/A**

HAZNET:

Gepaid:	CAP601252649
TSD EPA ID:	CAT000646117
Gen County:	0
Tsd County:	Kings
Tons:	1.3500
Waste Category:	Other inorganic solid waste
Disposal Method:	Transfer Station
Contact:	Not reported
Telephone:	(000) 000-0000
Mailing Address:	00000
County	0

Site	Database(s)	EDR ID Number EPA ID Number
CALIF WATER SVC CO STK TANK 8 (Continued)		S103680227

Gepaid: CAP601252649
TSD EPA ID: CAT000646117
Gen County: 0
Tsd County: Kings
Tons: .0000
Waste Category: Other inorganic solid waste
Disposal Method: Not reported
Contact: Not reported
Telephone: (000) 000-0000
Mailing Address: 00000
County 0

Gepaid: CAP601252649
TSD EPA ID: CAT000646117
Gen County: 0
Tsd County: Kings
Tons: .0250
Waste Category: Other inorganic solid waste
Disposal Method: Treatment, Tank
Contact: Not reported
Telephone: (000) 000-0000
Mailing Address: 00000
County 0

VOLPI FARMS
14210 W. STATE ROUTE 4
STOCKTON, CA

CA SLIC **S105557310**
N/A

SLIC Region 5:
Facility Status: RI
Pollutant: TPH - d, g, mo, MTBE
Report Date: A
Lead Agency: LSL
Site Added: Not reported
Identify RP: Not reported
Date Resolved: Not reported
NFA: Not reported

Unit: Facility is a Aboveground Tank (AGT) cleanup site
Date Filed: A

DR LAURENT VIEN DDS
7743 N WEST LN_STE C5
STOCKTON, CA 95210

HAZNET **S103961458**
N/A

HAZNET:
Gepaid: CAL000187592
TSD EPA ID: CAL000048571
Gen County: San Joaquin
Tsd County: Santa Clara
Tons: 2.0850
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Contact: DR LAURNT VIEN DDS
Telephone: (209) 474-1101
Mailing Address: 7743 N WEST LN_STE C5
STOCKTON, CA 95210
County San Joaquin

Site	Database(s)	EDR ID Number EPA ID Number
DR LAURENT VIEN DDS (Continued)		S103961458

Gepaid:	CAL000187592
TSD EPA ID:	CAD980887418
Gen County:	San Joaquin
Tsd County:	1
Tons:	6.2758
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Contact:	DR LAURNT VIEN DDS
Telephone:	(209) 474-1101
Mailing Address:	7743 N WEST LN_STE C5 STOCKTON, CA 95210
County	San Joaquin

Gepaid:	CAL000187592
TSD EPA ID:	CAL000048571
Gen County:	San Joaquin
Tsd County:	Santa Clara
Tons:	6.0465
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Contact:	DR LAURNT VIEN DDS
Telephone:	(209) 474-1101
Mailing Address:	7743 N WEST LN_STE C5 STOCKTON, CA 95210
County	San Joaquin

APPENDIX B

LIKELIHOOD STATEMENTS

Many statements have been made in this report regarding the likelihood of the occurrence of certain adverse events. The term "likelihood," as used here, pertains to chances of a match between the prediction for the event and its actual occurrence. Likelihood statements are based on the professional judgments of ATC Associates Inc. A prediction made for the occurrence of an event will either match the actual occurrence or not. Uncertainty about the natural processes, lack of adequate scientific understanding of the physical and chemical interactions at the site, and insufficient data and information about the specific site conditions usually preclude a perfect or 100 percent likelihood of match between predictions and actual occurrences. Therefore, where a perfect match is not possible, the likelihood statement assigns a measure for a "degree of belief" or a "betting score" for the match between the prediction for the event and the actual event outcome.

The likelihood statements can be made either qualitatively, expressed verbally, or quantitatively, expressed in percent ranges. The qualitative terms expressed verbally, however, can be approximately related to percent ranges. The following approximate percent ranges have been used by ATC Associates Inc. for the qualitative terms used in likelihood statements.

QUALITATIVE TERMS	APPROXIMATE PERCENT RANGE
Very Low	Less than 10%
Low	10% to 20%
Low to Moderate	20% to 40%
Moderate	40% to 60%
Moderate to High	60% to 80%
High	80% to 90%
Very High	More than 90%

The following is a typical likelihood statement and its interpretation.

- **Statement**: Based on site conditions, data collected, and current regulatory guidelines delineating a hazardous waste, it is the judgment of ATC Associates Inc. that there is a low likelihood that hazardous waste from the landfill has migrated to the site.

- **Interpretation of Statement**: The statement reflects an extrapolation of a discrete data set to the entire site. This statement is made within the context of regulatory guidelines delineating hazardous wastes in effect at the time the statement is made. It is important to note that these guidelines periodically change; consequently, the judgment made corresponds to the guidelines cited in the report.

  An extrapolation made from a discrete data set precludes making a statement with certainty that the event has occurred (i.e., one cannot really say with 100 percent certainty that hazardous waste from the landfill has not migrated to the site). Therefore, a professional judgment is made for the event that is expressed in terms of the likelihood (less than 100 percent) that the event either has or has not occurred.

- The statement given above renders a professional judgment that there is a low likelihood that the event has occurred. The above statement could also have been expressed as "there is a high likelihood that hazardous waste from the landfill has not migrated to the site."

NPSA IX E5

KLEINFELDER

PREACQUISITION SITE ASSESSMENT
MOSS AND CRAIG DEVELOPMENTS
APPROXIMATELY 194 ACRES ON
EAST EIGHT MILE ROAD AND WEST LANE
STOCKTON, CALIFORNIA

May 3, 1991

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A Report Prepared for :

Moss and Craig Developments
1919 Grand Corral Boulevard, D-3
Stockton, CA 95207

PREACQUISITION SITE ASSESSMENT MOSS AND CRAIG DEVELOPMENTS APPROXIMATELY 194 ACRES ON EAST EIGHT MILE ROAD AND WEST LANE STOCKTON, CALIFORNIA

Kleinfelder Job No. 24-220098-L00

Prepared by:

John Wogec, R.E.A.
Project Environmental Specialist

John Boll, R.E.A.
Program Manager
Preacquisition Site Assessments

KLEINFELDER, INC.
9795 Business Park Drive
Sacramento, California 95827

May 3, 1991

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1 SUMMARY

Kleinfelder was retained by Moss and Craig Developments to conduct a preacquisition site assessment (PSA) of two parcels totaling approximately 194 acres south of East Eight Mile Road and east of West Lane in Stockton, California. The parcels are planned for development as commercial and/or residential land use. On the date of Kleinfelder's site visit, the parcels were used as agricultural land. The south parcel included a mobile home, grain bins, a warehouse, and two aboveground diesel storage tanks.

Stained soil was noted in three separate areas of the south parcel (inside the warehouse, near the grain bins, and on the north side of the warehouse). A petroleum hydrocarbon odor was noted in the affected soil. Kleinfelder recommends sampling aud analysis of the stained areas to evaluate the vertical and lateral extent of affected soil. Based on this assessment, cost effective remediation measures, if any, can be discussed.

Empty and partially full chemical containers were noted on the southern parcel. These containers and their contents should be properly disposed. A grain bin on the southern parcel was reportedly used to store empty pesticide containers before they were rinsed. Soil in this grain bin should be sampled and analyzed for persistent pesticide residues.

A Pacific Gas & Electric (PG&E) pad-mounted transformer was located on the north parcel. No obvious stains were noted on the transformer or on the pad. Four banks of pole-mounted transformers were noted on the north and south parcels; one of these transformers had a blue label indicating that it did not originally contain polychlorinated biphenyls (PCBs). Mr. Steve Okamoto of PG&E indicated that PG&E transformers should contain less than 500 ppm of PCBs. If the client desires additional information on the contents of unlabeled transformers, then PG&E should be contacted.

Two irrigation wells were noted on both parcels during the site visit. Mr. Leland Fortney, the caretaker for the south parcel, indicated that a domestic well near his mobile home had caved in. A second domestic well was present near the mobile home. Mr. Fortney indicated that a septic tank, located under the mobile home was abandoned and a new one had been installed nearby. If either of these septic tanks or the wells onsite will not be used in the future, they should be abandoned in accordance with SJCEHD requirements. If

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other wells are discovered during development of the site and will not be used in the future, then they should be abandoned in accordance with SJCEHD requirements.

The aerial photo review revealed that most of the site was agricultural land in the 1963, 1973, and 1984 photos. Two trailer-sized structures, a barn-sized structure and what appeared to be a silo were present on the southern parcel in the 1963, 1973, and 1984 photos. What may have been agricultural burn areas were noted on the southern parcel in the 1973 photos. If further information about these areas is desired, soil samples should be collected there and analyzed.

A review of federal, state, and county records indicated that there were no facilities onsite or within 2,600 feet of the site which were under enforcement action or investigation by environmental regulatory agencies.

Information on restricted pesticide use onsite from the San Joaquin County Agricultural Commissioner (SJCAC) was obtained for the years 1985 to 1989. Based on the pesticide use reports and agricultural history, if a further reduction in risk regarding residual pesticide soil concentrations is desired then soil sampling and analysis should be conducted.

Based on the information obtained and reviewed during this preacquisition site assessment Kleinfelder recommends additional assessment activities with regards to the stained soil and possible debris disposal/burn areas on the south parcel and possible surface soil sampling for persistent pesticides.

This report is subject to the limitations described in Section 5.

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2 BACKGROUND

On August 20, 1990, Moss and Craig Developments retained Kleinfelder to conduct a Preacquisition Site Assessment (PSA) of two parcels totaling approximately 194 acres (APN: 092-02-2 and 6) in Stockton, California. The northern parcel is referred to as the Bennett Property and the southern parcel is referred to as the Hammer Property. The two parcels as a whole are referred to as the site. The site is shown on Appendix A, Plate 1, the Site Location Map. The site is proposed for development as commercial and/or residential land uses.

This report includes Kleinfelder's review of available and accessible county, state, and federal agency records, historical aerial photographs, discussions with persons knowledgeable about the site (Ms. Jennifer Reich of Moss and Craig and Mr. Leland Fortney, the caretaker of the sonth parcel), and a site visit.

The federal regulatory agency record review included facilities listed by the Environmental Protection Agency (EPA). State agency records included the California Department of Health Services (DHS), Regional Water Quality Control Board (RWQCB), California Integrated Waste Management Board (CIWMB), Department of Water Resources (DWR), California State Office of Emergency Services (OES), and the Department of Conservation, Division of Oil and Gas (DOG). Local agency records included the San Joaquin County Department of Public Health Services, Environmental Health Division (SJCEHD), the San Joaquin County Air Pollutiou Control District (SJCAPCD), and the San Joaquin County Agriculture Commission (SJCAC).

The historical aerial photo review included a stereoscopic review of photos from 1963, 1973, and 1984. The site visit included a visual assessment of the site for obvious environmental concerns involving toxic chemicals and a drive-by survey of the area, within a 2,600 feet radius of the site. The drive-by survey was conducted to note facilities which may affect the site. This report presents our findings and discusses areas of concern.

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3 ASSESSMENT ACTIVITIES

3.1 INTRODUCTION

Regulatory agencies create files for sites where they have conducted investigations, enforcement actions, or inspections under their jurisdiction. Non-confidential portions of these files were reviewed to locate potential concerns near the site. A summary of the records available for regulatory agency investigations near the site is included in Section 3.2.

Historic aerial photographs were reviewed for additional information about past site and surrounding area activities that might not be available in agency files. A summary of the aerial photograph review is included in Section 3.3.

A site visit was conducted to assess current conditions and activities at the site and surrounding area. The results of the site visit are included in Section 3.4. The locations of offsite facilities discussed in section 3.0 are presented in Appendix A, Plate 2, the Site Vicinity Map. Features noted onsite during the site visit are presented in Appendix A, Plate 3, the Site Visit Map.

Available agency records are reviewed by Kleinfelder personnel. At times however, agency information is obtained verbally. Telephone Conversation Records and documentation of verbal information are contained in Appendix B.

3.2 RECORD REVIEW

A brief description of the agencies contacted, lists reviewed, and information obtained concerning the site and surrounding area is as follows:

The United States Environmental Protection Agency (EPA) *Comprehensive Environmental Response, Compensation, and Liability Information System* (CERCLIS) lists sites with known or threatened releases of hazardous chemicals. The *National Priority List* (NPL) is a list of sites scheduled for long-term remediation using federal superfund monies and/or

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private funds. No facilities within one mile of the site were listed on the CERCLIS database (February 1990) or the NPL (January 1990).

The California Department of Health Services (DHS) records investigations and clean-up actions at sites under their jurisdiction in the *Abandoned Site Program Information System* (ASPIS), *Hazardous Waste and Substances Sites List* (also known as the Cortese List,), and the *Bond Expenditure Plan* (BEP). The Regional Water Quality Control Board (RWQCB) and California Integrated Waste Management Board (CIWMB) also include their investigations in the Cortese list. There were no DHS investigations within 2,600 feet of the site listed on the ASPIS database (January 1990), the Cortese list (January 1990), or the BEP (January 1990).

The Regional Water Quality Control Board (RWQCB) lists locations of their investigations in the Cortese, Solid Waste Assessment Test (SWAT), and the *Central Valley RWQCB Tank Tracking System* (TTS) lists. There were no RWQCB investigations within 2,600 feet of the site listed on the Cortese list (January 1990), the SWAT database (September 1989), or the TTS list (January 1990).

The California Integrated Waste Management Board (CIWMB) maintains the Solid Waste Information System (SWIS) list containing information on active and inactive landfills and solid waste transfer stations. The CIWMB did not report landfills or transfer stations within 2,600 feet of the site on the SWIS list (January 1990).

The California Department of Water Resources (DWR) had records of the following wells onsite:

- A domestic well owned by Frances Hammer was drilled in February 1978 to a depth of 160 feet. This well appeared to be located on the south parcel (onsite) on the day of Kleinfelder's site visit (see section 3.4).

The California Department of Conservation, Division of Oil and Gas (DOG) maintains field maps of the locations of active and inactive oil and gas wells. According to a DOG field map, there were no such wells onsite.

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The San Joaquin County Branch of the State Office of Emergency Services (OES) (Mr. Dennis Fields) was contacted regarding emergency responses to hazardous materials incidents. Mr. Fields stated that the OES did not have records of such incidents within 2,600 feet of the site.

The San Joaquin County Flood Control and Water Conservation District Semi-Annual Groundwater Report for Fall 1989 indicated the regional depth to groundwater in the area around the site was approximately 60-70 feet below the surface. The general groundwater flow direction was from the northeast to the southwest. Groundwater depth and flow direction may vary due to seasonal weather patterns, local pumping, and other influences.

The San Joaquin County Department of Public Health Services, Environmental Health Division (SJCEHD) retains records of permitted underground storage tanks in San Joaquin County. The following facilities, within 2600 feet of the site, were listed in the SJCEHD September 1989 list of facilities with permitted underground tanks:

- **Pacific Bell**, 2300 East Eight Mile Road, approximately 250 feet east of the north parcel. The SJCEHD file indicated that the facility had permits for a 4000-gallon underground diesel fuel storage tank and a 10,000-gallon underground unleaded gasoline storage tank. Precision tests for both tanks were performed on October 6, 1989, according to the file. Results of both tests were within state guidelines according to the file. No other relevant information on the facility was in the SJCEHD file reviewed by Kleinfelder.

- **Kampgrounds of America**, 2851 East Eight Mile Road, approximately 2,000 feet east of the north parcel. The SJCEHD file indicated that the facility had permits for two 5000-gallon underground tanks that contained leaded and unleaded gasoline. Precision tests for both tanks were performed on June 30, 1989. Results of both tests were within state guidelines, according to the file. No other relevant information on the facility was in the SJCEHD file reviewed by Kleinfelder.

- **Western Meter Services**, 1551 East Eight Mile Road, approximately 250 feet north of the north parcel. The SJCEHD file indicated that this facility had permits for a 4,000-gallon underground storage tank and a 300-gallon underground storage tank. The file indicated that the tanks were removed in

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1985. Soil samples collected during the removal indicated that soil was not affected by product in the tanks, according to the SJCEHD file.

The San Joaquin County Air Pollution Control District (SJCAPCD) listed the following facilities, within 2600 feet of the site, with air emissions permits:

- **Pacific Bell**, 2300 East Eight Mile Road, 100 feet north of the site. The facility had a air emissions permit for underground storage tanks. Mr. Jim Czarnecki of the SJCAPCD stated that the facility was in compliance with their air emissions permit. No other relevant information was available from the SJCAPCD.

- **Kampgrounds of America**, 2851 East Eight Mile Road, 150 feet north of the site. The facility had an air emissions permit for underground storage tanks. Mr. Jim Czarnecki of the SJCAPCD stated that the facility was in compliance with their air emissions permit. No other relevant information was available from the SJCAPCD.

The San Joaquin County Agricultural Commissioner's Office (SJCAC) (Ms. Mary Jensen) reviewed pesticide use permits in the names of Jim Watanabe and Jim Nuss, the growers onsite, for the period from 1985 to the present. The following restricted pesticides were used onsite and in Section 2 of Township 2 North, Range 6 East:

Date of Permit	Grower	Pesticide/Herbicide	Crop
1986	Watanabe Bros.	Sulphur	Beets
1985	Watanabe Bros.	2,4-D Roundup	Corn
1985	Watanabe Bros.	Ridomil Brano	Tomatoes
1987	Watanabe Bros.	2,4-DB	Alfalfa
1986	Watanabe Bros.	Thiodan Javelin	Tomatoes
1986	Watanabe Bros.	2,4-D	Wheat
1986	Watanabe Bros.	Carbyne MCPA	Wheat

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Date of Permit	Grower	Pesticide/Herbicide	Crop
1985	Watanabe Bros.	Pydrin Parathion Ridomil Lannate	Tomatoes
1985	Watanabe Bros.	Thiodan Javelin Nufilm	Tomatoes
1989	Watanabe Bros.	2,4-DB	Alfalfa

These pesticides/herbicides were applied by Valley Helicopter east of West Lane, north of Morada Lane, and south of east Eight Mile Road. The pesticide reports include the fields onsite and possible those between the north and south parcels.

Pacific Gas and Electric, (PG&E) (Mr. Steve Okamoto) was contacted regarding a pad-mounted transformer and four banks of pole-mounted transformers onsite. Mr. Okamoto stated that those PG&E transformers with greater than 500 ppm polychlorinated biphenyls (PCBs) were replaced with transformers containing less than 500 ppm of PCBs. He stated that transformers in areas of "food and feed" should contain less than 50 ppm PCBs. Mr. Okamoto did not know whether or not the transformers onsite contained PCBs.

3.3 AERIAL PHOTOGRAPH REVIEW

Kleinfelder reviewed aerial photographs using a stereoscope for the years 1963, 1973, and 1984. The results of this review are summarized as follows:

1963 The site was two parcels separated by approximately a quarter mile. The northern parcel, referred to as the Bennett property was a rectangular shaped property of approximately 80 acres. The southern property was an irregular shaped parcel that occupied approximately 110 acres and is referred to as the Hammer property.

The Bennett property was bordered on the north by Eight Mile Road, on the west by West Lane Road, and on the south and east by farmland. The site appeared to be recently plowed on the north half of the parcel and the southern half appeared to be cultivated with row crops. No obvious structures or buildings were noted onsite.

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The Hammer property was bordered on the north by Bear Creek, on the west by West Lane Road, and on the south and east by an irrigation canal. The site appeared to be planted in rice. Two trailer-sized structures, one barn-sized structure, and a structure which appeared to be a silo were noted south of Bear Creek and east of West Lane.

1973 Bennett property - The site appeared unchanged from the 1963 photos except that rice appeared to have been grown on 75 percent of the site. The northeast corner of the site appeared to be row crop.

Hammer property - Two areas were noted that resembled debris. One area was located in the northeast corner south of Bear Creek and another area was noted south of Bear Creek northeast of the shop building. These may be areas where trash and debris were burned, which was a common agricultural practice.

1984 Bennett property - The site appeared to have been planted in row crops and pasture. No other obvious changes were noted onsite from the 1973 photos.

Hammer property - The site appeared to have been planted in row corps. No other obvious changes were noted onsite.

The surrounding area was mostly farmland and rural residences; however, residential development was noted approximately one half mile south of the site. A warehouse-sized structure surrounded by a paved parking lot (Pacific Bell facility on the day of Kleinfelder's site visit) was located adjacent to the northeast corner of the site.

The aerial photography review revealed that most of the site was agricultural land in the 1963, 1973, and 1984 photos. Two trailer-sized structures, a barn-sized structure and what appeared to be a silo were present on the southern parcel in the 1963, 1973, and 1984 photos. The area around the site was mostly rural in the 1963 and 1973 photos with increasing residential development south of the site in the 1984 photos.

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3.4 SITE VISIT

A site visit was conducted on August 22, 1990. The north parcel, approximately 83 acres, had been plowed. The south parcel, approximately 111 acres, was grown as alfalfa. The north border of the southern parcel was Bear Creek.

North Parcel:

An irrigation well was located on the central eastern border of the north parcel. Two pole-mounted transformers that appeared in good condition were located near the well. One of these transformers had a blue label that read, "non-PCB." Another bank of three unlabeled pole-mounted transformers that appeared in good condition were located in the southeast corner of the north parcel. An unlabeled pad-mounted transformer was located in the southwest corner of the north parcel. No obvious stains were noted on the transformer or the pad.

No obvious soil stains, odors, or pooled liquids were noted on the north parcel.

South Parcel:

A mobile home, three grain bins, and a warehouse were noted on the south parcel. Three separate areas onsite had stained soil. One soil stain was located on a dirt floor of the warehouse. The stain had petroleum hydrocarbon odors and measured approximately two square feet in surface area. A second soil stain was located outside the northwestern corner of the warehouse and was approximately 3 by 6 feet in surface area. A hand auger was used to assess the vertical extent of the soil. Petroleum hydrocarbon odors exceeded the 2.5 feet depth in the center of the stain. The third stained area was located approximately 10-15 feet south of the grain bins and was approximately 4 square feet in surface area.

The following chemical containers were noted on the south parcel:

- Two unlabeled approximately 300-gallon aboveground diesel storage tanks were near the grain bins. One of the tanks appeared in good condition with no obvious leaks. The other tank had staining on the underside. However, no obvious soil stains were noted on the soil under the tanks.

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- Four 25-gallon drums (one containing grease, one containing transmission fluid, and two empty Supracide and Roundup drums), five empty 5-gallon diesel fuel containers, two unlabeled 10-gallon drums containing an unidentified chemical, one unlabeled and empty 10-gallon container, and eight unlabeled 5-gallon containers of unknown chemicals were located in the warehouse.

- A 30-gallon drum labelled Supracide and an unlabeled 10-gallon container were located in the western grain bin. The drums were empty. According to Mr. Leland Fortney, the caretaker, the grain bin was used to store used pesticide containers before the grower rinsed them.

- A 30-gallon drum was located next to the 3 feet by 6 feet soil stain. The drum was unlabeled, old, and appeared in poor condition due to rust and staining.

Mr. Fortney indicated that an abandoned domestic well was located approximately 20 feet west of the mobile home. A 100-gallon pressure tank was located next to the well head. He stated that the well caved in, and thus a second well was drilled on the north side of the mobile home. The second well was connected to the 100-gallon pressure tank and another 200-gallon pressure tank. He did not know if the caved-in well was properly abandoned. A third well (irrigation well) was located in the northeast corner of the south parcel.

Mr. Fortney stated that a septic tank was pumped dry and then abandoned underneath the mobile home (he did not know if the septic system was abandoned in accordance with County regulations). A newer septic system was installed on the eastern side of the mobile home with leach lines running to the southeast.

A pole-mounted transformer was located 40 feet northeast of the mobile home. The transformer was unlabeled. Another bank of three unlabeled transformers were located in the northeast corner of the south parcel.

A drive-by survey of the area surrounding the site was conducted to observe facilities using chemicals or materials which, by their nature, may present a potential environmental concern. Materials of concern include the contents of underground or aboveground

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storage tanks, materials storage areas, chemical containers or 55-gallon drums. The following facilities within 2,600 feet of the site were noted during the driveby:

- **Kampgrouuds of America,** 2851 East Eight Mile Road, 150 feet north of the site. Two fuel dispensers were noted at the facility. See discussion of the facility's underground storage tanks under SJCEHD, on page 6.

- **Pacific Bell,** 2300 East Eight Mile Road, 100 feet north of the western portion of the site. Two fuel dispensers were noted onsite. See discussion of the facility's underground storage tanks under SJCEHD, on page 6.

- **Western Meter Services,** 1551 E. Eight Mile Road, 250 feet north of the north parcel. SJCEHD records indicated that the facility had a permitted underground storage tank that was removed in 1985. See discussion of this facility under the SJCEHD, on page 6.

- **Ranch on Ham Lane,** 1500 feet north of the north parcel. The facility had one 300-gallon, one 200-gallon, and one 55-gallon aboveground storage tank. The tanks were unlabeled. The condition of the tanks or the soil underneath them could not be assessed from the road.

- **Midway Cabinets,** northeast corner of E. Eight Mile Road and West Lane, 300 feet north of the north parcel. The facility had three 300-gallon aboveground storage tanks. No labels or stains were visible on the tanks.

- **Residence,** northeast corner of West Lane and Morada Lane, 2,600 feet south of the south parcel. The facility had three unlabeled 250-gallon aboveground storage tanks (two were on trailers) and a 250-gallon propane tank. No obvious leaks or stains were noted on the tanks.

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4 DISCUSSION OF ENVIRONMENTAL CONCERNS

On the date of the site visit, stained soil with petroleum hydrocarbon odors was noted in three separate areas (inside the warehouse, near the grain bins, and on the north side of the warehouse) on the southern parcel of the site. The stained areas consisted of approximately 25 square feet of surface area. The stains should be assessed for the vertical and lateral extent of affected soil. Samples of the affected soil should be collected and analyzed. Based on the analytical results, disposal or treatment options for affected soil can be discussed.

Partially full and empty chemical containers are located on the south parcel. These containers and their contents should be removed and properly disposed of. Two of these containers are approximately 300-gallon aboveground diesel storage tanks. Mr. Fortney stated that a previous grower of the south parcel periodically rinsed pesticide containers on soil near the southwest corner of the warehouse. Surface soil samples should be collected in areas of chemical container storage, in the pesticide container rinse area and inside a grain bin onsite where empty pesticide containers were reportedly stored. These samples should be analyzed for persistent pesticide residues.

A Pacific Gas & Electric (PG&E) pad-mounted transformer was located on the north parcel. No obvious stains were noted on the transformer or on the pad. Four banks of pole-mounted transformers were noted on the north and south parcels; one of these transformers on the north parcel had a blue label indicating that it did not originally contain polychlorinated biphenyls (PCBs). PG&E was contacted regarding the presence of PCBs in the transformers. Mr. Steve Okamoto of PG&E was not aware of whether or not the transformers contained PCBs. If the client desires additional information on the contents of unlabeled transformers, then PG&E should be coutacted.

Four wells were noted onsite. One of these wells (domestic) had caved in, according to Mr. Fortney. This well was probably not abandoned in accordance with SJCEHD requirements. If these wells or additional wells that are discovered onsite during development, will be used in the future, water samples should be collected in them and analyzed in accordance with their intended use. If wells located onsite will not be used in the future, they should be abandoned in accordance with SCEMD requirements.

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Mr. Fortney indicated that a septic tank was pumped dry and abandoned underneath the mobile home. He did not know if the septic tank was properly abandoned. Another septic tank (in use on the date of Kleinfelder's site visit) is located on the eastern side of the mobile home. If these septic systems will not be used in the future, they should be abandoned in accordance with SJCEHD requirements.

Based on the aerial photo review and the known application of pesticides and rinsing of pesticide containers onsite between 1985 and 1989, residual pesticides are a concern. If the client desires further information on the possibility of persistent pesticide residues in soil, surface soil samples should be collected and analyzed. This recommendation is commonly made for previously agricultural land proposed for residential development. This recommendatiou does not imply that pesticide residues are present in site soils.

The 1973 aerial photos revealed two areas on the southern parcel where debris may have been dumped or burned. If further information about these areas is desired, soil samples should be collected and analyzed.

Records at the SJCEHD indicate that three facilities upgradient of the site had permitted underground storage tanks. Two of these facilities (Kampgrounds of America and Pacific Bell) appeared to be in compliance with their tank permit based on information in SJCEHD files. The underground storage tanks that were located at Western Meter Services were removed in 1985. No reports of leaks or spills were noted in the SJCEHD files. Based on the proximity of two facilities with underground storage tanks, if site groundwater will be used iu the future, it should be sampled and analyzed in accordance with its intended use.

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5 LIMITATIONS

The scope of work for this report was intended to provide a limited review of available information related to the possible presence of hazardous chemicals at the referenced site. This assessment is not intended to be comprehensive, identify all potential concerns, or eliminate the possibility of acquiring land with some degree of risk.

The scope of work for this project was limited to a qualitative evaluation of site information associated with the potential presence of hazardous chemicals in conjunction with the transfer of, or financing of the referenced property. This limited environmental evaluation did not include other services not described that would reduce the risk of not locating toxic substances on the property. Other environmental or geotechnical investigative services not provided within this specific scope of work can be provided for additional fees.

Our report of findings is based on historical aerial photograph review, field observations, regulatory agency communications and file reviews. The earliest photographs reviewed were taken in 1963. Earlier photographs may be obtained and reviewed at additional time and expense.

Kleinfelder performed this preliminary assessment in accordance with generally accepted standards of care that existed in Northern California at the time of this study, and in accordance with our proposal, dated August 9, 1990 (Reference 24-YP2381), from which the scope of work was selected by the client. It should be recognized that a definition and evaluation of environmental conditions is a difficult and inexact art. Judgements leading to conclusions and recommendations are generally made with an incomplete knowledge of the conditions present. More extensive studies may reduce the inherent uncertainties associated with environmental conditions. If the client wishes to further reduce the uncertainty associated with this study, Kleinfelder should be notified for additional consultation. No warranty, expressed or implied, is made.

This report may be used only by the client and only for the purposes stated, within a reasonable time from its issuance. Land use, site conditions (both onsite and offsite) or other factors may change over time, and additional work may be required with the passage of time. Any party other than the client who wishes to use this report shall notify

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Kleinfelder of such intended use by executing the "Application for Authorization to Use" which follows this document as an Appendix. Based on the intended use of the report, Kleinfelder may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements by the client or anyone else will release Kleinfelder from any liability resulting from the use of this report by any unauthorized party.

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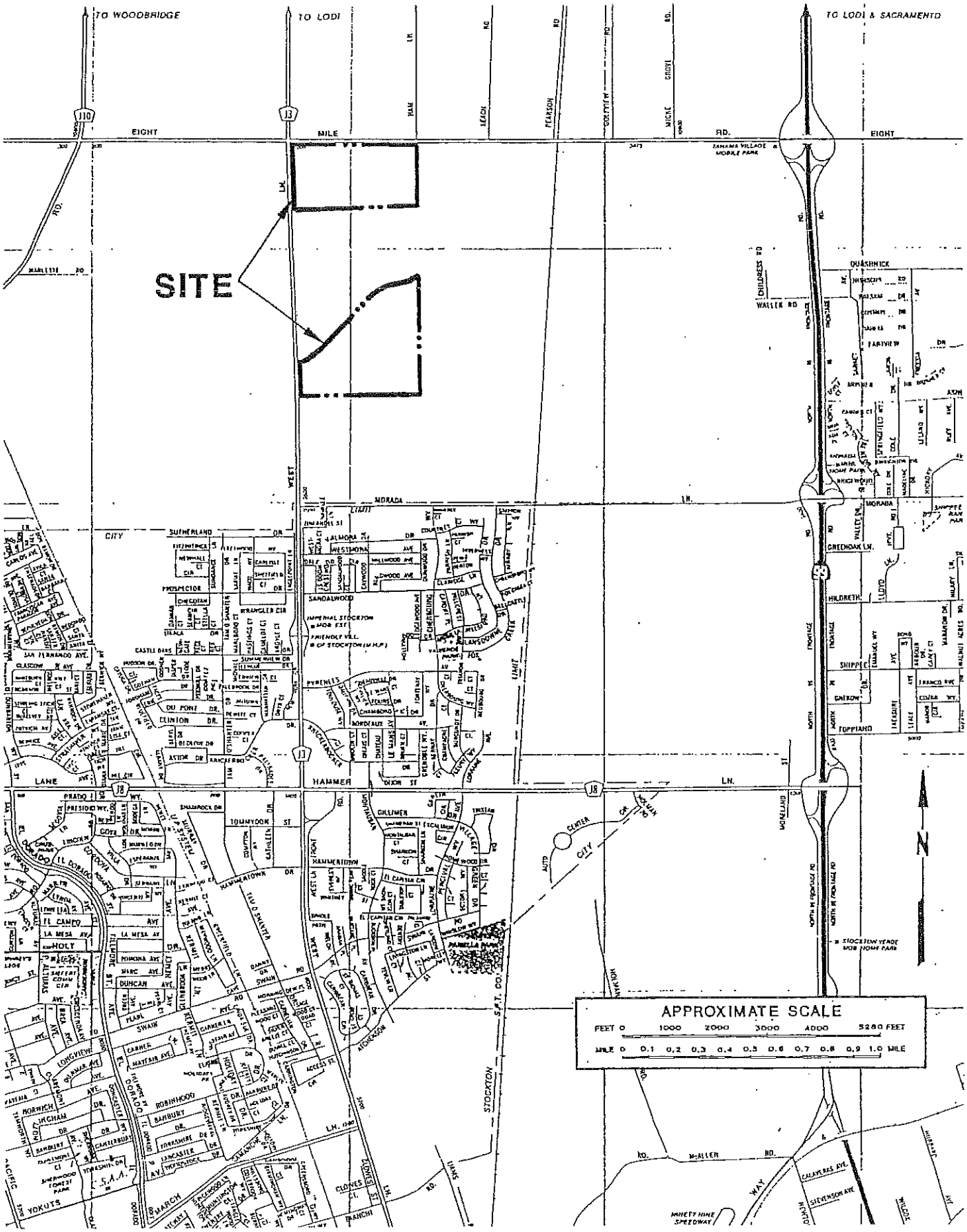


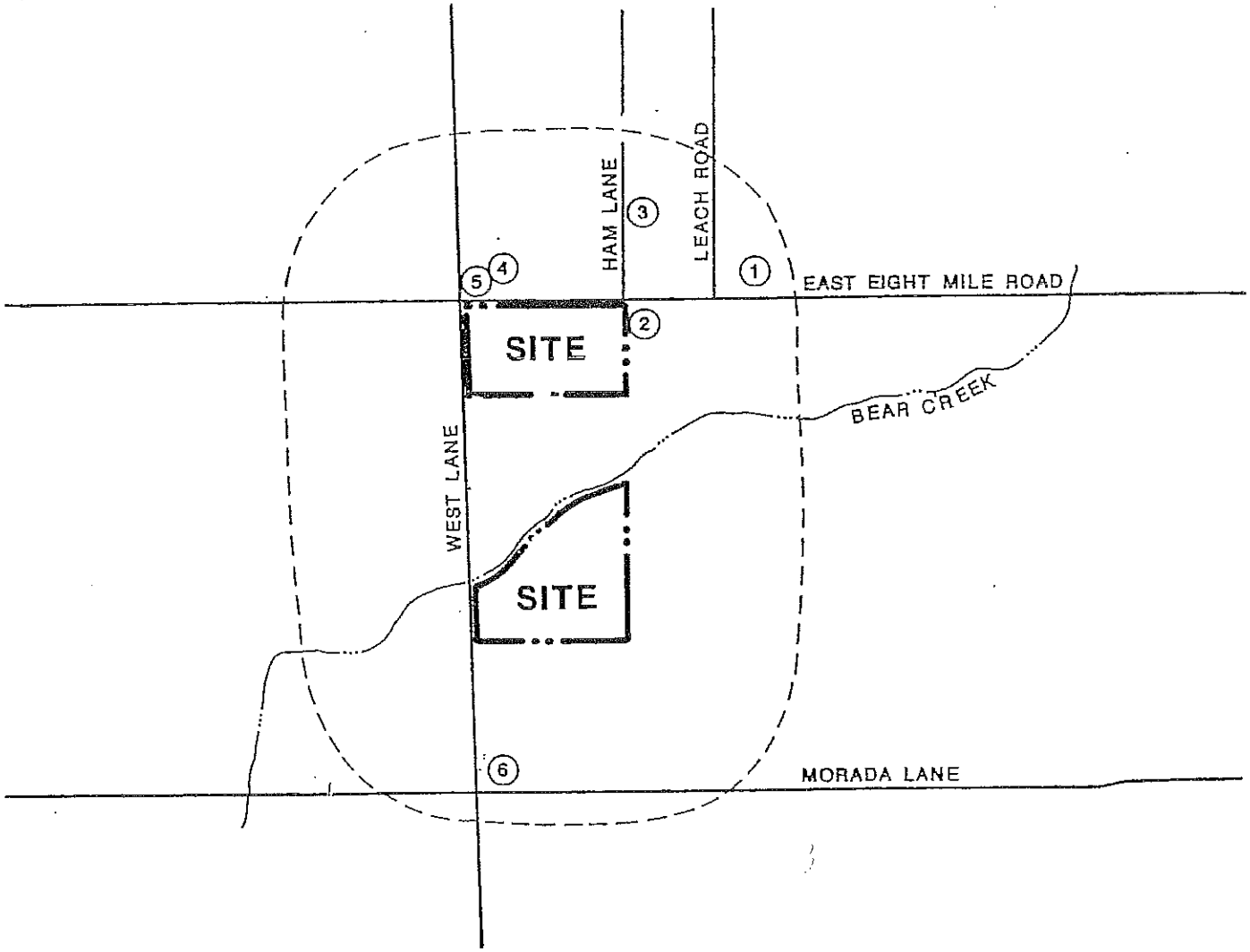
KLEINFELDER

PROJECT NO. 24-220098-L00

SITE LOCATION MAP
MOSS & CRAIG DEVELOPMENTS
APPROXIMATELY 194 ACRE SITE
STOCKTON, CALIFORNIA

PLATE 1

AUGUST 29, 1999



LEGEND

Site boundary

1/2 Mile Perimeter

1. Kampgrounds of America U,E
2. Pacific Bell U,E
3. Ranch A
4. Western Meter Services R
5. Midway Cabinets A
6. Residence A

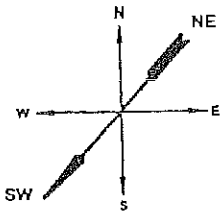
KEY

A = Facility with aboveground storage tank(s)

U = Facility with permitted underground storage tank(s)

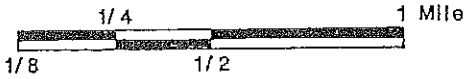
E = Facility with air emissions permit

R = Facility with underground storage tanks removed



GENERAL GROUNDWATER FLOW DIRECTION

APPROXIMATE SCALE: 1" = 1/2 MILE



KLEINFELDER

PROJECT NO. 24-220098-L00

SITE VICINITY MAP
MOSS & CRAIG DEVELOPMENTS
APPROXIMATELY 194 ACRE SITE
STOCKTON, CALIFORNIA

PLATE 2

KLEINFELDER

August 28, 1990
File: 24-220098-L00

Mr. Jim Czarnecki
San Joaquin Air Pollution Control District
P.O. Box 2009
Stockton, CA 95201

SUBJECT: Verification of Verbal Information

Dear Mr. Czarnecki:

On August 27, 1990, you were contacted by Kleinfelder regarding air emissions permits, per the attached telephone conversation summary.

We sincerely appreciate the information you provided during the conversation. The information is summarized in the attached telephone conversation record and may be used in a report. Please take a moment to review the telephone conversation record. If you have any comments, please contact Randy Reid within two weeks. Our project has a short timeframe so your immediate attention to this matter is appreciated.

Sincerely,

KLEINFELDER, INC.

Randall A. Reid

Randall A. Reid
Assistant Environmental Specialist

Paul Kile FOR:

John Wogec, R.E.A.
Project Environmental Specialist

RR:JW:lr

Enclosure

DF4-90-127

KLEINFELDER
TELEPHONE CONVERSATION RECORD

Date:	August 27, 1990	Time: 1:30 p.m.	
To:	Mr. Jim Czarnecki		
Company:	San Joaquin Air Pollution Control District		
Address:	P.O. Box 2009, Stockton, CA 95201		
Phone No.:	(209) 468-3476	Project No.: 24-220098-L00	

SUBJECT: Air Emissions Permits

Mr. Czarnecki stated that the Kampgrounds of America and Pacific Bell are in compliance with their air emissions permits for their underground storage tanks.

Recorded by:Randy Reid

RR

KLEINFELDER

August 24, 1990
File: 24-220098-L00

Mr. Dennis Fields
Office of Emergency Services
222 E. Weber Avenue, Suite 610
Stockton, CA 95202

SUBJECT: Verification of Verbal Information

Dear Mr. Fields:

On August 21, 1990, you were contacted by Kleinfelder regarding emergency responses, per the attached telephone conversation summary.

We sincerely appreciate the information you provided during the conversation. The information is summarized in the attached telephone conversation record and may be used iu a report. Please take a moment to review the telephone conversation record. If you have any comments, please contact Randy Reid within two weeks. Our project has a short timeframe so your immediate attention to this matter is appreciated.

Sincerely,

KLEINFELDER, INC.

Randall A. Reid

Randall A. Reid
Assistant Environmental Specialist

John Uloque, for

Paul Kile
Project Environmental Specialist

RR:PK:lr

Enclosure

DF4-90-124

KLEINFELDER
TELEPHONE CONVERSATION RECORD

Date:	August 21, 1990	Time: 10:00 p.m.	
To:	Mr. Dennis Fields		
Company:	Office of Emergency Services		
Address:	222 E. Weber Avenue, Suite 610, Stockton, CA 95202		
Phone No.:	(209) 468-3969	Project No.: 24-220098-L00	

SUBJECT: Emergency Responses

Mr. Fields stated that there were no records of emergency responses to hazardous materials incidents within one-half mile of the site. Mr. Fields was sent a map with a one-half mile radius shown around the site.

Recorded by: Randy Reid

STATE OF CALIFORNIA
DEPARTMENT OF FOOD AND AGRICULTURE
PESTICIDE ENFORCEMENT
53-126X (REV. 2/82)

PESTICIDE USE REPORT

1602007

COUNTY NO.	SECTION	TOWNSHIP	RANGE	BASE & MERIDIAN
39	2	2	6	

APPLICATION METHOD: AIR ☑ GROUND ☐ SPRINKLER ☐

COMMODITY OR SITE TREATED: Beets

APPLICATOR NAME, ADDRESS & LICENSE NO.
Valley Helicopters
18417 E. Highway 4
Stockton, California 95205
Phone 465-5818

MAP ID/DESCRIBE LOCATION: E/ West Lane N/ Morada

CAT(S) APPLIED: PROPOSED / ACTUAL 9/18/86

ACRES OR UNITS TREATED: PROPOSED / ACTUAL 100A

EQUIPMENT IDENTIFICATION: Eccle

USE PERMIT NO.

PERMITTEE/CUSTOMER: Watanabe Bros

NAME OF PRODUCT APPLIED	REGISTRATION NUMBER FROM LABEL	RATE	DILUTION VOLUME	TOTAL PRODUCT USED (SPECIFIC UNIT OF MEASURE)	TARGET PESTS
Sulphur	476 - 197 - -	40#	40#	4000 LB OZ PT QT GA	Mildew
	- - -			LB OZ PT QT GA	
	- - -			LB OZ PT QT GA	
	- - -			LB OZ PT QT GA	

ENVIRONMENTAL CHANGES/COMMENTS

NW N NE W E SW S

RECEIVED
OCT 14 1986
AREA
AGR. COMM. — STOCKTON

SUBMITTED BY | DATE | TIME | PCA NAME

RECEIVED BY | BOX NO | DATE | TIME | ☐ APPROVED ☐ DENIED

(2) CAC YELLOW

Submit to AGRICULTURAL COMMISSIONER within 7 DAYS after application.

ADJACENT CROPS, SCHOOLS, DWELLINGS, ETC

Sulfur? YES

STATE OF CALIFORNIA
DEPARTMENT OF FOOD AND AGRICULTURE
PESTICIDE ENFORCEMENT
126X (REV. 2/82)

PESTICIDE USE REPORT

1323288

COUNTY NO.	SECTION	TOWNSHIP	RANGE	BASE & MERIDIAN	APPLICATION METHOD	COMMODITY OR SITE TREATED	APPLICATION NAME, ADDRESS & LICENSE NO.
39	2	2 S	6 W	S H	AIR / GROUND / OTHER	Fallow corn	Valley Helicopters, 7367 E. Mariposa Road, Stockton, California 95205, Phone (209) 465-5818

LOCATION	DATE(S) APPLIED PROPOSED	DATE(S) APPLIED ACTUAL	ACRES OR UNITS TREATED PROPOSED	ACRES OR UNITS TREATED ACTUAL
Route N/ Morada E/ West Lane	10	4/1/85	11	100A

EQUIPMENT IDENTIFICATION	USE PERMIT NO.	PERMITTEE/CUSTOMER
12 265	13	14 Watanabe Bros

NAME OF PRODUCT APPLIED	REGISTRATION NUMBER FROM LABEL	RATE	DILUTION VOLUME	TOTAL PRODUCT USED (CIRCLE UNIT OF MEASURE)	TARGET PEST(S)
Roundup	524-388--	1 pt	5g	13 LB OZ PT QT GA	grass
	---			LB OZ PT QT GA	
	---			LB OZ PT QT GA	
	---			LB OZ PT QT GA	

ENVIRONMENTAL CHANGES/COMMENTS

NW / NE / W / TREATMENT AREA / SW / S / SE

Bd

PERMITTED BY	DATE	TIME	PCA NAME
	23	24	25

APPROVED BY	BOX NO.	DATE	TIME	APPROVED / DENIED
	28	29	30	31

26 ADJACENT CROPS, SCHOOLS, DWELLINGS, ETC.

(2) CAC YELLOW Submit to AGRICULTURAL COMMISSIONER within 7 DAYS after application.

STATE OF CALIFORNIA
DEPARTMENT OF FOOD AND AGRICULTURE
PESTICIDE ENFORCEMENT
126X (REV. 2/82)

PESTICIDE USE REPORT

1320910

COUNTY NO.	SECTION	TOWNSHIP	RANGE	BASE & MERIDIAN	APPLICATION METHOD	COMMODITY OR SITE TREATED	APPLICATION NAME, ADDRESS & LICENSE NO.
39	2	2 S	6 W	S H	AIR / GROUND / OTHER	Tomatoes	Valley Helicopters, 7367 E. Mariposa Road, Stockton, California 95205, Phone (209) 465-5818

LOCATION	DATE(S) APPLIED PROPOSED	DATE(S) APPLIED ACTUAL	ACRES OR UNITS TREATED PROPOSED	ACRES OR UNITS TREATED ACTUAL
N/ Morada Ln E/ West Lane	10	9/11/85	11	60A

EQUIPMENT IDENTIFICATION	USE PERMIT NO.	PERMITTEE/CUSTOMER
12 265	13	14 Watanabe Bros

NAME OF PRODUCT APPLIED	REGISTRATION NUMBER FROM LABEL	RATE	DILUTION VOLUME	TOTAL PRODUCT USED (CIRCLE UNIT OF MEASURE)	TARGET PEST(S)
Solomil	100-607--	1½#	10g	90 OZ PT QT GA	Blight
Bravo	677-313-ZA	3½pt	10g	30 LB OZ PT QT GA	Mold
	---			LB OZ PT QT GA	
	---			LB OZ PT QT GA	

ENVIRONMENTAL CHANGES/COMMENTS

NW / NE / W / TREATMENT AREA / SW / S / SE

Bd

PERMITTED BY	DATE	TIME	PCA NAME
	23	24	25

APPROVED BY	BOX NO.	DATE	TIME	APPROVED / DENIED
	28	29	30	31

26 ADJACENT CROPS, SCHOOLS, DWELLINGS, ETC.

(2) CAC YELLOW Submit to AGRICULTURAL COMMISSIONER within 7 DAYS after application.

24-D

County No.	Section	Township	Range	Base & Meridian	Application Method	Commodity	Treated	Applicator Firm Name & Address
1 30	2 2	3 N S	4 E W	5 S M H	6 Air ☐ Ground ☑ Other ☐	7 Alfalfa		8 [illegible]

MAP ID/DESCRIBE LOCATION	DATE APPLIED	ACRES OR UNITS TREATED	APPLIED/SUPERVISED BY (Person's Name)
9	10 8-17-87	11 100	14
	PERMITTEE/CUSTOMER	USE PERMIT NO.	
	12 [illegible]	13 87-490	

15 Manufacturer and Name of Product Applied	16 Registration Number from Label; Include Alpha Code	19 Total Product Used (circle unit of measure)	20 Target Pest(s)
24 B	264 — 105 — 2A	150 LB. OZ. PT. QT. GA.	A [illegible] B
	— — —	LB. OZ. PT. QT. GA.	A B
	— — —	LB. OZ. PT. QT. GA.	A B
	— — —	LB. OZ. PT. QT. GA.	A B [signature]

2074824 SUBMIT TO AGRICULTURAL COMMISSIONER WITHIN 7 DAYS OF THE APPLICATION Form 39-025 (Rev. 3-84)

STATE OF CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE — INFORMATION SERVICES UNIT — PESTICIDE USE REPORT

County No.	Section	Township	Range	Base & Meridian	Application Method	Commodity or Site Treated	Applicator Firm Name & Address
1 3	2 2	3 N S	4 E W	5 S M H	6 Air ☐ Ground ☑ Other ☐	7 Alfalfa	8 [illegible]

MAP ID/DESCRIBE LOCATION	DATE APPLIED	ACRES OR UNITS TREATED	APPLIED/SUPERVISED BY (Person's Name)
9 [illegible]	10 10-[illegible]-87	11 10	14
	PERMITTEE/CUSTOMER	USE PERMIT NO.	
	12 [illegible]	13 87-490	

15 Manufacturer and Name of Product Applied	16 Registration Number from Label; Include Alpha Code	19 Total Product Used (circle unit of measure)	20 Target Pest(s)
24 B	264 — 105 — 2A	30 LB. OZ. PT. QT. GA.	A [illegible] B
	— — —	LB. OZ. PT. QT. GA.	A B
	— — —	LB. OZ. PT. QT. GA.	A B
	— — —	LB. OZ. PT. QT. GA.	A B [signature]

2074822 SUBMIT TO AGRICULTURAL COMMISSIONER WITHIN 7 DAYS OF THE APPLICATION Form 39-025 (Rev. 3-84)

11

DEPARTMENT OF FOOD AND AGRICULTURE
PESTICIDE ENFORCEMENT
33-126X (REV. 2/82)

PESTICIDE USE REPORT

1602997

UNIT NO.	SECTION	TOWNSHIP	RANGE	BASE & MERIDIAN	APPLICATION METHOD	COMMODITY OR SITE TREATED	APPLICATOR NAME, ADDRESS & LICENSE NO.
39	2	2	6		AIR / GROUND / OTHER	7 Toms	Valley Helicopters, 7367 E. Mariposa Road, Stockton, California 95205, Phone (209) 465-5818

MAP ID/DESCRIBE LOCATION: 1/West Lane at Morada Ln

DATE(S) APPLIED: PROPOSED 7/5/86 ACTUAL 7/7/86

ACRES OR UNITS TREATED: PROPOSED 95A ACTUAL 95A

EQUIPMENT IDENTIFICATION: G-4

USE PERMIT NO: 86-S-69

PERMITTEE/CUSTOMER: Watanabe Bros

NAME OF PRODUCT APPLIED	REGISTRATION NUMBER FROM LABEL	RATE	DILUTION VOLUME	TOTAL PRODUCT USED (DECIMALS UNIT OF MEASURE)	TARGET PESTICIDE
Thiodan	2935-50135-AA-	1.3 qt	10 g	32 LB OZ PT QT GA	worms
Sevelin	11273-50- -	2 qt	10 g	47 LB OZ PT QT GA	worms
Gray Side	- N/A - -	1.6 oz	10 g	1 LB OZ PT QT GA	
	- - -			LB OZ PT QT GA	

ENVIRONMENTAL CHANGES/COMMENTS:

NW N NE W TREATMENT SW SE

RECEIVED JUL 10 1988 AGR. COMM. STOCKTON

SUBMITTED BY: [signature] DATE 7/8 TIME PCA NAME

RECEIVED BY: BOX NO. DATE TIME APPROVED / DENIED

26 ADJACENT CROPS, SCHOOLS, DWELLINGS, ETC.

2) CAC YELLOW Submit to AGRICULTURAL COMMISSIONER within 7 DAYS after application.

DEPARTMENT OF FOOD AND AGRICULTURE
PESTICIDE ENFORCEMENT
33-126X (REV. 2/82)

PESTICIDE USE REPORT

1505860

County No.	Section	Township	Range	Base & Meridian
39	2	2 S	6 E	MDB&M

Application Method: Air ☑ Ground ☐ Other ☐
Commodity or Site Treated: Wheat

Applicator Name, Address & License No.:
Valley Helicopters
7387 E. Mariposa Road
Stockton, California 95205
Phone (209) 465-5818

Map ID/Describe Location: W/ West Lane at Morada Ln

Date(s) Applied Proposed	Date(s) Applied Actual	Acres/Units Treated Proposed	Acres/Units Treated Actual
1/30/86	2/8/86	302	308

Equipment Identification: G-4
Use Permit No.: 86-S-69
Permittee/Customer: Watanabe Bros

Name of Product Applied	Registration Number from Label	Date	Dilution/Volume	Total Product Used (Specify Unit of Measure)	Target Pest(s)
2,4-D	464 - 1 - -	1pt	10g	4 GA	weed
	- - -			LB OZ PT QT GA	
	- - -			LB OZ PT QT GA	
	- - -			LB OZ PT QT GA	

Environmental Changes/Comments:

RECEIVED
FEB 12 1986
AGRI. COMM.-STOCKTON

Approved by: Bob
Date: 2/29
Time: 10:00
Pesticide Aide:
Clerk: OKAYCB
Date:
Time:
☐ Approved ☐ Denied

Adjacent Crops, Schools, Dwellings, Etc.

(2) CAC YELLOW Submit to AGRICULTURAL COMMISSIONER within 7 DAYS after application.

STATE OF CALIFORNIA
DEPARTMENT OF FOOD AND AGRICULTURE
PESTICIDE ENFORCEMENT
33-126X (REV. 2/82)

PESTICIDE USE REPORT

1322706

County No.	Section	Township	Range	Base & Meridian
39	2	2 S	6 E	MDB&M

Application Method: Air ☑ Ground ☐ Other ☐
Commodity or Site Treated: WHEAT

Applicator Name, Address & License No.:
Valley Helicopters
18417 E. Highway 4
Stockton, California 95205
Phone 465-5818

Map ID/Describe Location: E. WEST LN, 3/4 mi. / MORADA LN.

Date(s) Applied Proposed	Date(s) Applied Actual	Acres/Units Treated Proposed	Acres/Units Treated Actual
1/2/86	1/7/86	100.	100.

Equipment Identification: 6727 D
Use Permit No.: 86-S-69.
Permittee/Customer: WATANABE Bros

Name of Product Applied	Registration Number from Label	Date	Dilution/Volume	Total Product Used (Specify Unit of Measure)	Target Pest(s)
CARBYNE	876 - 440 - AA	2pt.	5gal	25 GA	wild OATS
MCPA.	464 - 394 - 359	1pt.	5gal	12 QT	weeds
	- - -			LB OZ PT QT GA	
	- - -			LB OZ PT QT GA	

Environmental Changes/Comments

RECEIVED
JAN 22 1986
AGRI. COMM.-STOCKTON

Approved by: Bob
Date: 1/22/86
Time: 16:15
Pesticide Aide:
Clerk: Alice
Date:
Time:
☐ Approved ☐ Denied

Adjacent Crops, Schools, Dwellings, Etc.

(2) CAC YELLOW Submit to AGRICULTURAL COMMISSIONER within 7 DAYS after application.

STATE OF CALIFORNIA
DEPARTMENT OF FOOD AND AGRICULTURE
PESTICIDE ENFORCEMENT
126X (REV. 2/02)

PESTICIDE USE REPORT

1320933

SECTION	TOWNSHIP	RANGE	BASE & MERIDIAN
2	2 N	6 W	S

APPLICATION METHOD: AIR ☒ GROUND ☐ OTHER ☐

COMMODITY OR SITE TREATED: Tomatoes

APPLICATOR NAME, ADDRESS & LICENSE NO.
Valley Helicopters
7367 E. Mariposa Road
Stockton, California 95205
Phone (209) 465-5818

PESTICIDE LOCATION: Morada Ln R/R Tracks / West Lane

DATE(S) APPLIED: PROPOSED 9/5/85 ACTUAL 9/5/85

ACRES OR UNITS TREATED: PROPOSED 30A ACTUAL 30A

EQUIPMENT IDENTIFICATION: 265

USE PERMIT NO: 85-S-17

PERMITTEE/CUSTOMER: Watanabe Bros

NAME OF PRODUCT APPLIED	REGISTRATION NUMBER FROM LABEL	RATE	MIXTURE VOLUME	TOTAL PRODUCT USED (SPECIFY UNIT OF MEASURE)	TARGET PESTS
Sevin	201 - 401 - -	10g	10g	2 LB OZ PT QT GA	worms
Orthrin	34704 - 10 - -	1pt	10g	4 LB OZ PT QT GA	worms
Vitavax	352 - 342 - -	3/4#	10g	24 LB OZ PT QT GA	worms
Lorsil	100 - 607 - -	2#	10g	60 LB OZ PT QT GA	mold

ENVIRONMENTAL CHANGES/COMMENTS

RECEIVED
SEP 10 1985
DEPT. OF AGR. - STOCKTON

BY	DATE	TIME	PCA NAME
Mike	9/4	0530	

BY	MRK NO	DATE	TIME	☐ APPROVED ☐ DENIED
OFFICE				

ADJACENT CROPS, SCHOOLS, DWELLINGS, ETC

CAC YELLOW Submit to AGRICULTURAL COMMISSIONER within 7 DAYS after application.

STATE OF CALIFORNIA
DEPARTMENT OF FOOD AND AGRICULTURE
PESTICIDE ENFORCEMENT
126X (REV. 2/02)

PESTICIDE USE REPORT

1320823

SECTION	TOWNSHIP	RANGE	BASE & MERIDIAN
2	2 N	6 W	S

APPLICATION METHOD: AIR ☒ GROUND ☐ OTHER ☐

COMMODITY OR SITE TREATED: Tomatoes

APPLICATOR NAME, ADDRESS & LICENSE NO.
Valley Helicopters
7367 E. Mariposa Road
Stockton, California 95205
Phone (209) 465-5818

PESTICIDE LOCATION: So W/ Morada Ln E/ West Lane

DATE(S) APPLIED: PROPOSED 8/20/85 ACTUAL 8/23/85

ACRES OR UNITS TREATED: PROPOSED 60A ACTUAL 60A

EQUIPMENT IDENTIFICATION: 265

USE PERMIT NO: 85-S-17

PERMITTEE/CUSTOMER: Watanabe Bros

NAME OF PRODUCT APPLIED	REGISTRATION NUMBER FROM LABEL	RATE	MIXTURE VOLUME	TOTAL PRODUCT USED (SPECIFY UNIT OF MEASURE)	TARGET PESTS
Sevin	201 - 401 - -	10g	10g	5 LB OZ PT QT GA	worms
Vitavax	352 - 342 - -	3/4#	10g	45 LB OZ PT QT GA	worms
Buffer	- N/A -	1pt	10g	8 LB OZ PT QT GA	
	- - -			LB OZ PT QT GA	

ENVIRONMENTAL CHANGES/COMMENTS

RECEIVED
SEP 4 1985
DEPT. OF AGR. - STOCKTON

BY	DATE	TIME	PCA NAME
Mike	8/21	0530	

BY	MRK NO	DATE	TIME	☐ APPROVED ☐ DENIED
OFFICE				

ADJACENT CROPS, SCHOOLS, DWELLINGS, ETC

CALIFORNIA
DEPARTMENT OF FOOD AND AGRICULTURE
PESTICIDE ENFORCEMENT
33-128X (REV. 2/82)

PESTICIDE USE REPORT

1322812

COUNTY NO.	SECTION	TOWNSHIP	RANGE	BASE & MERIDIAN	APPLICATION METHOD	COMMODITY OR SITE TREATED
39	2	2 S	7 W	S	AIR / GROUND / OTHER	Tomatoes

APPLICATOR NAME, ADDRESS & LICENSE NO.
Valley Helicopters
7367 E. Mariposa Road
Stockton, California 95205
Phone (209) 465-5818

MAP ID/DESCRIBE LOCATION: E/West Lane, mile N/ Morada Rd

DATE(S) APPLIED: PROPOSED 8/2/85 ACTUAL 8/3/85
ACRES OR UNITS TREATED: PROPOSED 30A ACTUAL 30A
EQUIPMENT IDENTIFICATION: 265
USE PERMIT NO.: 85-5-17
PERMITTEE/CUSTOMER: Watanabe Bros

NAME OF PRODUCT APPLIED	REGISTRATION NUMBER FROM LABEL	RATE	DILUTION VOLUME	TOTAL PRODUCT USED (CIRCLE UNIT OF MEASURE)	TARGET PEST(S)
Pydeon	201 - 401 - -	9 oz	10 g	2 LB OZ PT QT GA	worms
Lannate	352 - 342 - -	3/4 #	10 g	24 LB OZ PT QT GA	worms
Nu Film	72 - 50003 - AA	6 oz	10 g	1 LB OZ PT QT GA	
	- - -			LB OZ PT QT GA	

ENVIRONMENTAL CHANGES/COMMENTS:

RECEIVED
AUG 22 1985
DEPT. OF AGR. - STOCKTON

SUBMITTED BY: Mike DATE: 8/1 TIME: 1455 PCA NAME:
RECEIVED BY: OFFICE BOX NO. DATE TIME ☐ APPROVED ☐ DEN FO

ADJACENT CROPS, SCHOOLS, DWELLINGS, ETC.: Bd.

(2) CAC YELLOW Submit to AGRICULTURAL COMMISSIONER within 7 DAYS after application.

STATE OF CALIFORNIA
DEPARTMENT OF FOOD AND AGRICULTURE
PESTICIDE ENFORCEMENT
33-128X (REV. 2/82)

PESTICIDE USE REPORT

1323289

COUNTY NO.	SECTION	TOWNSHIP	RANGE	BASE & MERIDIAN	APPLICATION METHOD	COMMODITY OR SITE TREATED
39	2	2 N	6 W	S	AIR / GROUND / OTHER	Fallow Corn

APPLICATOR NAME, ADDRESS & LICENSE NO.
Valley Helicopters
7367 E. Mariposa Road
Stockton, California 95205
Phone (209) 465-5818

MAP ID/DESCRIBE LOCATION: E/West Lane, W/ Morada Ln

DATE(S) APPLIED: PROPOSED 3/31/85 ACTUAL 4/1/85
ACRES OR UNITS TREATED: PROPOSED 100A ACTUAL 100A
EQUIPMENT IDENTIFICATION: 265
USE PERMIT NO.: 85-5-17
PERMITTEE/CUSTOMER: Watanabe Bros

NAME OF PRODUCT APPLIED	REGISTRATION NUMBER FROM LABEL	RATE	DILUTION VOLUME	TOTAL PRODUCT USED (CIRCLE UNIT OF MEASURE)	TARGET PEST(S)
2,4-D	464 - 1 - -	1 qt	.5 g	25 LB OZ PT QT GA	mustard
	- - -			LB OZ PT QT GA	
	- - -			LB OZ PT QT GA	
	- - -			LB OZ PT QT GA	

ENVIRONMENTAL CHANGES/COMMENTS:

TREATMENT AREA

SUBMITTED BY: Mike DATE: 3/30 TIME: 0650 PCA NAME:
RECEIVED BY: OFFICE BOX NO. DATE TIME ☐ APPROVED ☐ DEN FO

ADJACENT CROPS, SCHOOLS, DWELLINGS, ETC.: Bd.

(2) CAC YELLOW Submit to AGRICULTURAL COMMISSIONER within 7 DAYS after application.

STATE OF CALIFORNIA
DEPARTMENT OF FOOD AND AGRICULTURE
PESTICIDE ENFORCEMENT
3-120X (REV. 3/88)

PESTICIDE USE REPORT

2212155

1 LT NO	2 SECTION	3 TOWNSHIP	4 RANGE	5 BASE & MERIDIAN	6 APPLICATION METHOD	7 COMMODITY OR SITE TREATED	8 APPLICATOR FIRM (NAME AND ADDRESS)
39	2	2 (N) S	6 (E) W	S H (M)	AIR ☐ GROUND ☐ OTHER ☐	Tomatoes	AG-AIR, INC. 18417 E. Hwy 4 Stockton, CA 95205

9 MAP ID/DESCRIBE LOCATION	10 DATES APPLIED PROPOSED	ACTUAL	11 ACRES OR UNITS TREATED PROPOSED	ACTUAL	12 APPLIED/SUPERVISED BY (PERSON'S NAME)
1/4 mi. N/O Kamorah LN. 1/4 mi E/O West Lane	8/15/89	8/15/89	76	76	G-5 Greg

13 PERMITTEE/CUSTOMER	14 USE PERMIT NO.
Watanabe Bros	490

15 MFG. AND NAME OF PRODUCT APPLIED	16 REGISTRATION NO. FROM LABEL: INCLUDE ALPHA CODE	17 RATE	18 DILUTION/VOLUME	19 TOTAL PRODUCT USED (CIRCLE UNIT OF MEASURE)	20 TARGET PEST(S)
Thiodan 3EC	279 - 2924 - -	2 2/3 pt	10 g	25.36 LB OZ PT QT (GA)	Stink Bug
Javelen WG	55947 136 - -	1 1/4 #	↓	95 (LB) OZ PT QT GA	Aphid
Lutilon P.	72 - 50003 - AA -	4 g	↓	3 LB OZ PT QT (GA)	Beet Armyw
Spray Aide	72 - 50006 - AA -	1 pt.	100 g	LB OZ PT QT (GA)	Buffer

ENVIRONMENTAL CHANGES/COMMENTS:

NW	N	NE
W	TREATMENT AREA	E
SW	S	SE

Bob

SUBMITTED BY	DATE	TIME	PCA NAME
Bob	8/14/89	11:45	

RECEIVED BY	BOX NO.	DATE	TIME	
				☐ APPROVED ☐ DENIED

26 ADJACENT CROPS, SCHOOLS, DWELLINGS, ETC.

(2) CAC YELLOW Submit to AGRICULTURAL COMMISSIONER within 7 DAYS after application. 86 97019

CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE — INFORMATION SERVICES UNIT — PESTICIDE USE REPORT

Section	Township	Range	Base & Meridian	Application Method	Commodity or Site Treated	APPLICATOR FIRM NAME & ADDRESS
	2 (N) S	6 (E) W	S H (M)	Air ☐ Ground ☑ Other ☐	Alfalfa	Watanabe

9 USE LOCATION	10 DATE APPLIED	11 ACRES OR UNITS TREATED	8
	2-23-89	40	

12 PERMITTEE/CUSTOMER	13 USE PERMIT NO.	14 APPLIED/SUPERVISED BY (Person's Name)
Watanabe Bros	490	

15 Name of Applied	16 Registration Number from Label; Include Alpha Code	19 Total Product Used (circle unit of measure)	20 Target Pest(s)
2,4-DB	264 - 105 - -	80 LB. OZ. PT. (QT). GA.	A weeds B
	- - -	LB. OZ. PT. QT. GA.	A B
	- - -	LB. OZ. PT. QT. GA.	A B Bob
	- - -	LB. OZ. PT. QT. GA.	A B

35 SUBMIT TO AGRICULTURAL COMMISSIONER WITHIN 7 DAYS OF THE APPLICATION Form 39-025 (Rev. 3-84)

Appendix I

Water Supply Assessment

Water Supply Assessment
for the
Tra Vigne (formerly Bear Creek East) Development Project

in the

City of Stockton

September 2017

Prepared By:

City of Stockton
Municipal Utilities Department
Water Resources Division

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Appendix A – 2015 UWMP without Appendices

ABBREVIATIONS AND ACRONYMS

Cal-Water	California Water Service Company
CEQA	California Environmental Quality Act
COSMA	City of Stockton Metropolitan Area
COSMUD	City of Stockton Municipal Utilities Department
CVP	Central Valley Project
DPH	California Department of Public Health
DMM	Demand Management Measure
DWSP	Delta Water Supply Project
PFS	Public Facilities and Services Policy
Project	Bear Creek East Specific Plan and Annexation Project
SB	Senate Bill
SEWD	Stockton East Water District
SWP	State Water Project
UWMP	Urban Water Management Plan
WMPU	Water Master Plan Update
WSA	Water Supply Assessment
WSE	Water Supply Evaluation
WTP	Water Treatment Plant

Foreword

The Bear Creek East Specific Plan originally submitted an application for development in June 2005, that initiated a request for a Water Supply Assessment (WSA). The City of Stockton Municipal Utilities Department (COSMUD), being the retail water provider, completed the WSA making the determination of water supply sufficiency on the basis of existing surface and groundwater supplies and the progress made toward securing the water right entitlements from the California Delta, and the completion of a Delta diversion and surface water treatment plant Delta Water Supply Project (DWSP) to provide potable drinking water supplies to the City of Stockton for existing and planned future growth. In addition, a purchase agreement with the Woodbridge Irrigation District for water supply from the Mokelumne River was executed on 2008.

At the time of the original 2005 WSA, many planning elements were in development, especially, the 2035 General Plan Update (2035 General Plan) and the DWSP. Since 2005, Stockton has experienced an unforeseen economic slowdown. Due to the lapse in time since the initial WSA was requested and the changes in the pace development, the City of Stockton made the determination that a new WSA should be required from COSMUD. This leaves the question of where the Project is placed in the list of all WSA's completed after the 2005 WSA. As of April 2011, 12 WSA's were completed after the Project's 2005 WSA totaling 10,900 acres of land not including the Project's 320 acres. In July 2011, an updated WSA was completed, and concluded that COSMUD could support the Bear Creek East Specific Plan based on the 2010 UWMP.

In December 2015, the Tra Vigne Development Project submitted an application to the City of Stockton Community Development Project. The updated Project site slightly decreases in total acreage, but increases substantially in the areas of residential housing.

Based on the *Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001* (California Department of Water Resources, October 2003), projects with an existing WSA are given special consideration on having to complete or update a WSA. If all five factors listed below are met, the COSMUD would have the legal basis for not having to update a WSA:

1. The preparer of the assessment determines that it complies with the requirements of Senate Bill (SB) 610.
2. The assessment determined that sufficient water was available for the Project.
3. There has been no change to the Project that would result in a substantial increase in demand.

4. There has been no change in the circumstances or conditions that substantially affect the ability of the water supplier to provide a sufficient supply of water for the Project.
5. No new information that might affect the assessment has becomes available.

Given a conservative interpretation to each of the items, the economic slowdown is a significant changed condition under Item 4, but not one that substantially affects the sufficiency of water supplies to the Project as originally laid out in the 2005 and 2011 WSA. Because Item 5 includes the 2007 General Plan and the Water Master Plan Update (WMPU) (West Yost and Associates, July 2008) as new information, there are policy changes and updated planning assumptions that affects the Project's WSA. One example is the use of updated unit water demand factors developed and used in the WMPU and Senate Bill SBX-7 (2009) that requires demand management strategies from all California water providers. Another example, is the State of California's historic five-year drought, in which the City of Stockton was mandated to conserve 28% water throughout its service area.

Based on the above, COSMUD is taking the approach that the Project's WSA will maintain its place in the order of WSA completions and will assume the same level of foreseeable development used in 2005 and 2011 plus any new development that has actually been completed or underway with issuance of new housing permits (not necessarily occupied). This WSA is intended to replace, and not update, the 2005 and 2011 WSAs and includes the water supply and water infrastructure outlook based on 2017 conditions. More importantly, this WSA makes full use of the 2015 Urban Water Management Plan (UWMP) adopted by the Stockton City Council in July 2016. In so doing, the Project's water demand is taken in to consideration and included within the UWMP 20+ year requirement of water sufficiency.

The Project WSA that follows adds Project specificity where needed to comply with SB610 in the determination of water supply sufficiency as included in the 2015 UWMP.

1. 0 BACKGROUND

The California Water Code requires coordination between land-use lead agencies and public water purveyors. The purpose of this coordination is to ensure that prudent water supply planning has been conducted, and that planned water supplies are adequate to meet existing demands, anticipated demands from approved projects and tentative maps, and the demands of a proposed development Tra Vigne Development Project (Project).

California Water Code Sections 10910 through 10915 (inclusive) requires land-use lead agencies: (1) to identify the responsible public water purveyor for a proposed development project, and (2) to request a Water Supply Assessment (WSA) from the responsible purveyor. The purpose of the WSA is to demonstrate the sufficiency of the purveyors' water supplies to satisfy the water demands of the proposed development project, while still meeting the current and projected water demands of existing customers. California Water Code Sections 10910 through 10915 delineates the specific information that must be included in the WSA.

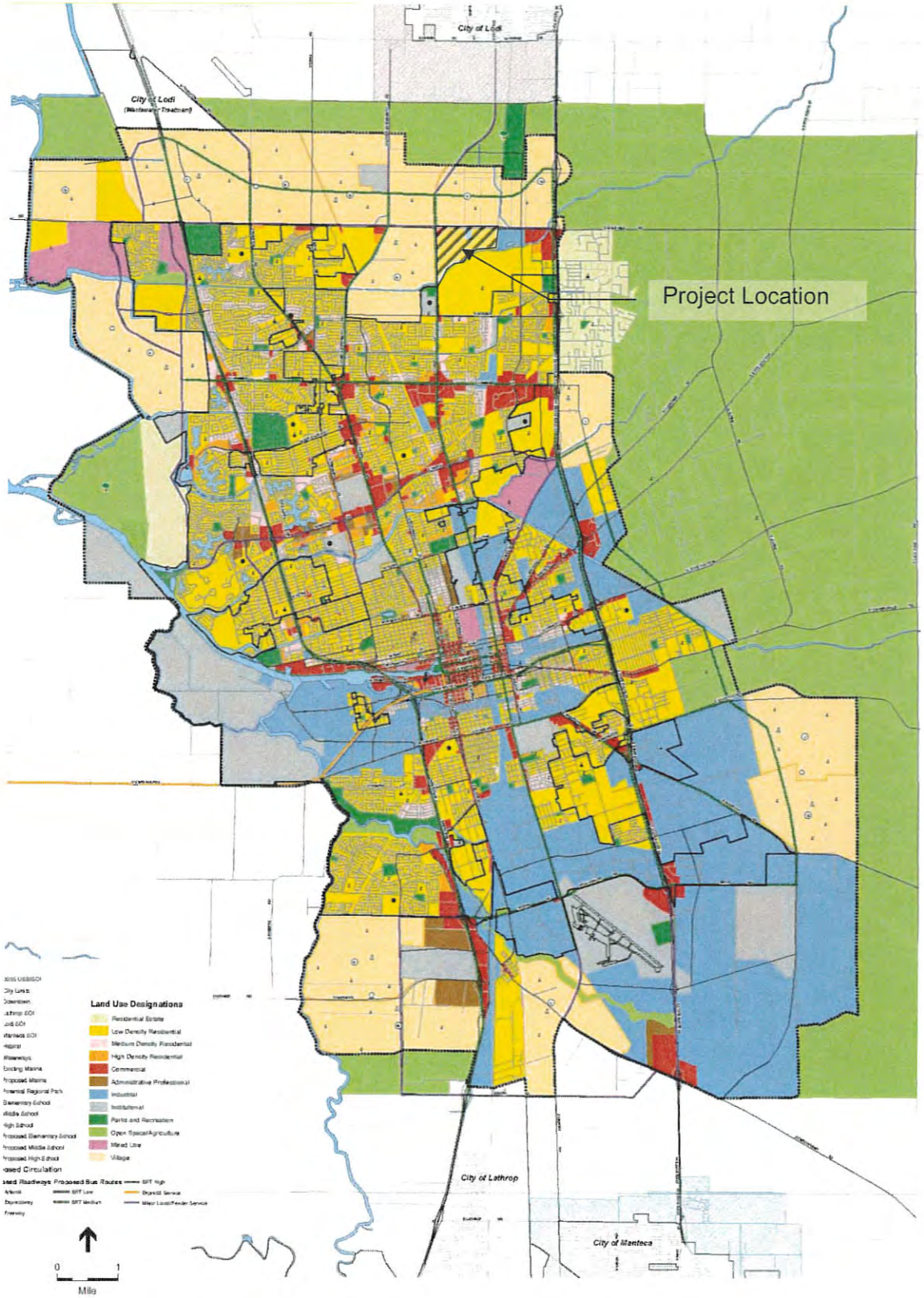
1.1 PROJECT DESCRIPTION

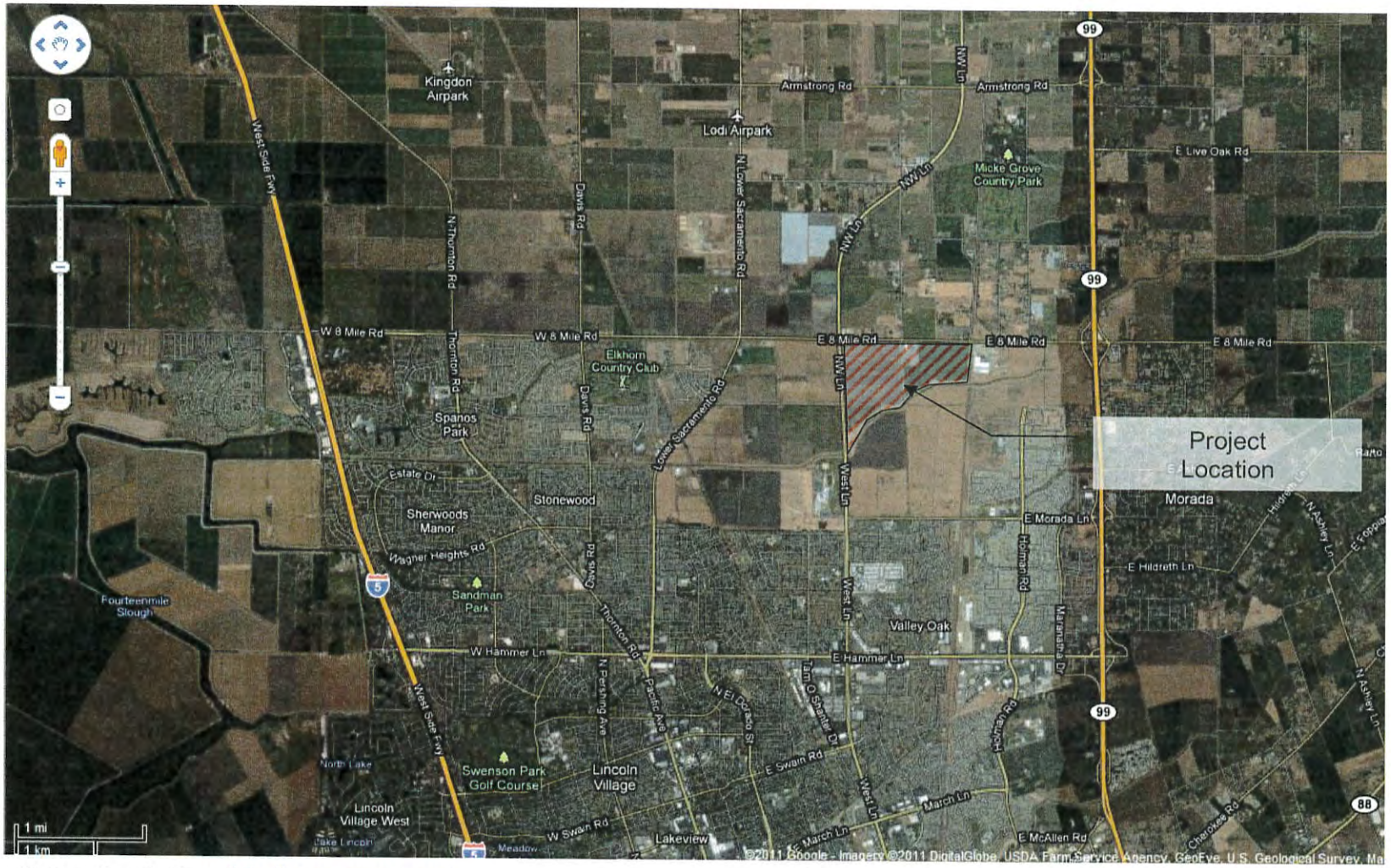
The Project is located south of Eight Mile Road, east of West Lane, west of the Union Pacific Railroad, and north of the Bear Creek drainage corridor (see **Figure 1-1**). The Project is composed of approximately 341.17 acres, 318.82 acres of which would be developed by the Project.

The Project is presently located in the unincorporated area of San Joaquin County, within the City of Stockton Sphere of Influence and Urban Services Boundary, as delineated and defined in the 2035 General Plan. The Project's proposed land uses are generally consistent with the 2035 General Plan including mixed land uses of residential, multi-family, commercial, and industrial. **Figure 1-2** shows the Project and its proximity to existing urban development. **Table 1-1** includes the Project's land use acreages that have been apportioned to closely match the 2035 General Plan land use designations shown in **Figure 1-1**.

1.2 NEED FOR WRITTEN ASSESSMENT AND VERIFICATION

Due to the Project size and location, a WSA per Senate Bill (SB) 610 is needed to identify the available water supplies for existing urbanized areas and foreseeable growth, including the Project, for 20 years into the future. SB 610 seeks to promote more collaborative planning among local water suppliers, and Cities and Counties. This statute requires detailed information regarding water availability to be provided to the City and County decision makers before approval of specified large development projects. This statute also requires detailed information be included in the administrative record that serves as the evidentiary basis for an approval action by the City or County on such projects. Both measures recognize local control and decision making regarding the availability of water for projects and the approval of projects.


City of Lodi
City of Lodi
Project Location
City of Lathrop
City of Manteca
Land Use Designations
Residential Estate
Low Density Residential
Medium Density Residential
High Density Residential
Commercial
Administrative Professional
Industrial
Institutional
Parks and Recreation
Open Space/Agriculture
Mixed Use
Village
Proposed Bus Routes
0
1
Mile



Source: Google Maps (http://maps.google.com/)

FIGURE 1-2. PROJECT LOCATION

TABLE 1-1. PROJECT LAND USE ACREAGES

Land Use Categories for WSA	Land Use (Acres)
Single Family Residential	232.18
Multi-family Residential	11.70
Commercial	10.50
Industrial	15.57
Parks and Recreation	15.07
Major Roads	21.09
Schools and Institutional Facilities	14.70
Open Space/Agriculture	20.36
Total	**341.17**

1.3 CITY OF STOCKTON MUNICIPAL UTILITIES DEPARTMENT (COSMUD)

The City of Stockton Metropolitan Area (COSMA) comprises of the three City of Stockton water retailers COSMUD, California Water Service Company (Cal-Water), and San Joaquin County and their respective service areas. The term COSMA is used only for convenience when grouping the water retailers and should not be construed as a legal entity.

As one of three retail water providers serving potable water supplies to the COSMA, COSMUD is responsible for preparing the WSA for the Project. In so doing, COSMUD has relied on and incorporates by reference its prior analysis including the following reference documents:

- City of Stockton 2015 UWMP (Brown and Caldwell, July 2016)
- City of Stockton Water Master Plan Update (WMPU) (West Yost and Associates, July 2008)
- Goals and Policies Report 2035 General Plan (City of Stockton, December 2007)

1.4 PURPOSE OF WSA

Under SB 610, water assessments must be furnished to local governments for inclusion in any environmental documentation for certain projects (as defined in California Water

Code 10912 [a]) subject to the California Environmental Quality Act (CEQA). Under SB 221, approval by a City or County of certain residential subdivisions requires an affirmative written verification of sufficient water supply. If coordinated and comprehensive water supply planning is underway at the time that the SB 610 water assessment is prepared, compliance with SB 221 will be greatly facilitated. SB 221 is intended as a 'fail safe' mechanism to ensure that collaboration on finding the needed water supplies to serve a new large subdivision occurs when it should – before construction begins.

1.5 SENATE BILL 610

Under SB 610 (codified as California Water Code, Section 10910 through 10915), each public water system responsible for serving proposed projects meeting specified criteria (e.g., residential projects of more than 500 residential dwelling units or industrial park projects greater than 50 acres) must prepare a WSA evaluating whether the water system's "total projected water supplies...will meet the projected water demand associated with the proposed project," together with existing and other foreseeable planned future uses over a 20-year horizon. If, as a result of its assessment, the public water system concludes that its water supplies are not sufficient, the assessment must detail its plans in acquiring the necessary water supplies.

1.6 USE OF 2015 URBAN WATER MANAGEMENT PLAN

The importance of the Urban Water Management Plan (UWMP) and the General Plan are best described from the *Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001*, (October 2003, DWR) as follows:

> *A foundational document for compliance with both SB 610 and SB 221 is the Urban Water Management Plan (UWMP). Both of these statutes repeatedly identify the UWMP as a planning document that, if properly prepared, can be used by a water supplier to meet the standards set forth in both statutes. Thorough and complete UWMPs will allow water suppliers to use UWMPs as a foundation to fulfill the specific requirements of these two statutes. Cities, counties, water districts, property owners, and developers will all be able to utilize this document when planning for and proposing new projects.*
>
> *UWMPs serve as important source documents for cities and counties as they update their General Plan. Conversely General Plans are source documents as water suppliers update their UWMPs. These planning documents are linked and their accuracy and usefulness are interdependent. It is*

> *crucial that cities/counties and water suppliers work closely when developing and updating these planning documents.*

The purpose of the 2015 UWMP is premised on meeting the following:

> *The City's UWMP has been prepared in accordance with the Act, as amended, California Water Code, Division 6, Part 2.6, Sections 10610 through 10656. The Act became part of the California Water Code with the passage of Assembly Bill 797 during the 1983–1984 regular session of the California legislature. The Act was amended in November 2009 with the adoption of the Water Conservation Act or SBX 7-7 and was most recently amended in 2014. The Water Conservation Act is described in Division 6, Part 2.55, Section 10608. (Page 1-1 of 2015 UWMP)*

Due to the diligence of both COSMUD and the City of Stockton, the policy linkages provided in the 2015 UWMP between water supply and water demand is in step with the 2035 General Plan. The only major difference is in the rate of growth assumed in both documents with the 2015 UWMP showing a reduced growth curve as compared to the 2035 General Plan. The 2015 UWMP and this WSA recognize the reason for the slow growth given the national and local economic condition.

In most cases the information and findings used in this WSA will relate back to the 2015 UWMP. Given the full description of supply and demand for the COSMUD service area in the 2015 UWMP, this WSA will fully rely on the 2015 UWMP to respond to some requirements of SB 610. When cited, the section and page number of the 2015 UWMP are included as reference.

1.7 SENATE BILL NO. 7 (SBX7-7), THE WATER CONSERVATION ACT OF 2009.

Reference to SBX7-7 in the beginning of the 2015 UWMP serves to highlight its importance in the overall UWMP implementation, and in planning estimates of water demand and demand management goals implemented over the next 10 years. SBX7-7 was enacted in November 2009 and was most recently amended in 2014. The Water Conservation Act is described in Division 6, Part 2.55, Section 10608.

The Act requires every urban water supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually to adopt and submit an UWMP every five years to the California Department of Water Resources (DWR). The Act describes the required contents of the UWMP as well as how urban water suppliers should adopt the UWMP.

2. 0 PROJECTED SERVICE AREA DEMANDS

Under the California Water Code, demand and supply must be evaluated over a 20-year horizon. Therefore, COSMUD has evaluated the revised growth calculations in the 2015 UWMP (Table 3-3, Page 3-3 of 2015 UWMP), which includes the Project's water demand as well as water demand from planned future growth. Growth in the 2015 UWMP is based on population growth figures over the entire 2035 General Plan proposed Urban Policy Area. Planned future growth is described in the guidebook published by the California Department of Water Resources as follows:

> *Neither SB 610 nor SB 221 defines planned future uses. However, it would be a reasonable interpretation that planned future uses are those that would be undertaken within the same time frame as the project under consideration. Each preparer of an assessment will determine what planned future uses it will include in the demand calculation to ensure that it is not identifying the same increment of water for more than one future use. (Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001, California Department of Water Resources, October 2008)*

This WSA is based on a project that is defined as a planned future use that has submitted a development application and the City of Stockton has made a request for a WSA to one or more of the retail water providers serving the City of Stockton. This WSA will consider the water demands for the above definition of growth and will compare this to water supplies from existing and future sources of supply. When looking at water supply sustainability, COSMUD has taken a conservative approach in their 2015 UWMP by looking out to 2040 for both demands and supplies.

2.1 SBX7-7 DEMAND REDUCTION GOALS

The actions of SBX7-7 are shown by including the 2015 UWMP Water Demand projection with and without the SBX7-7 requirement. Projected water demands for the City's retail water service area through the year 2040 meet the City's SBx7-7 GPCD target. As shown in Table 2-1 and on **Figure 2-1**, the projected expected passive water savings and conservation program water savings will enable the City to meet its GPCD target of 165 GPCD. Water use declined in 2014 and 2015 as a result of the Governor's drought declaration. It is assumed that the current decline in water use due to the drought is temporary and will increase to near 2012 levels.

TABLE 2-1. WATER DEMANDS PAST, PRESENT, AND FUTURE

Year	2010 UWMP and 2015 UWMP Actual Historical Demands (AF/year)	Tables 3-3 and 3-4 2015 UWMP Demands (AF/year)	Table 3-4 2015 UWMP Values Before SBX7-7 (AF/year)	Table 3-4 2015 UWMP Values After SBX7-7 (AF/year)
	(1)	(2)	(3)	(4)
2005	34,149	34,149		
2006	34,806			
2007	40,076			
2008	38,143			
2009	36,646			
2010	33,333			
2011				
2012		34,961	34,961	34,961
2013		34,394	34,394	34,394
2014		29,627	29,627	29,627
2015	24,843	24,843	24,843	24,843
2016		26,510		
2017		28,177		
2018		29,844		
2019		31,511		
2020		33,178	34,948	33,178
2021		33,618		
2022		34,059		
2023		34,499		
2024		34,940		
2025		35,380	37,925	35,380
2026		36,147		
2027		36,915		
2028		37,682		
2029		38,450		
2030		39,217	39,800	37,743
2031		39,723		
2032		40,230		
2033		40,736		
2034		41,243		
2035		41,749	42,473	40,274
2036		42,292		
2037		42,835		
2038		43,379		
2039		43,922		
2040		44,465	45,325	42,989

Notes:

1. Actual Demands in Col(1) are based on a combination of Table 6 and Table 9 in the 2010 UWMP. In cases where the two do not agree, the values in Table 6 were used. The Actual Demand in Col(1) for the Year 2015 is from Table 3-4 of the 2015 UWMP. Data for Years 2011 through 2014 are not available in the 2015 UWMP.
2. The 2015 UWMP demand for Year 2005 is not available in the 2015 UWMP, so the Year 2005 demand in Col(3) is based on Table 6 of the 2010 UWMP. The Table 3-3 and 3-4 2015 UWMP demands were used as a starting point from which the remaining values were calculated based on the average yearly increase in demand.
3. The Col(3) and (4) demand values are taken directly out of Table 3-4 of the 2015 UWMP.

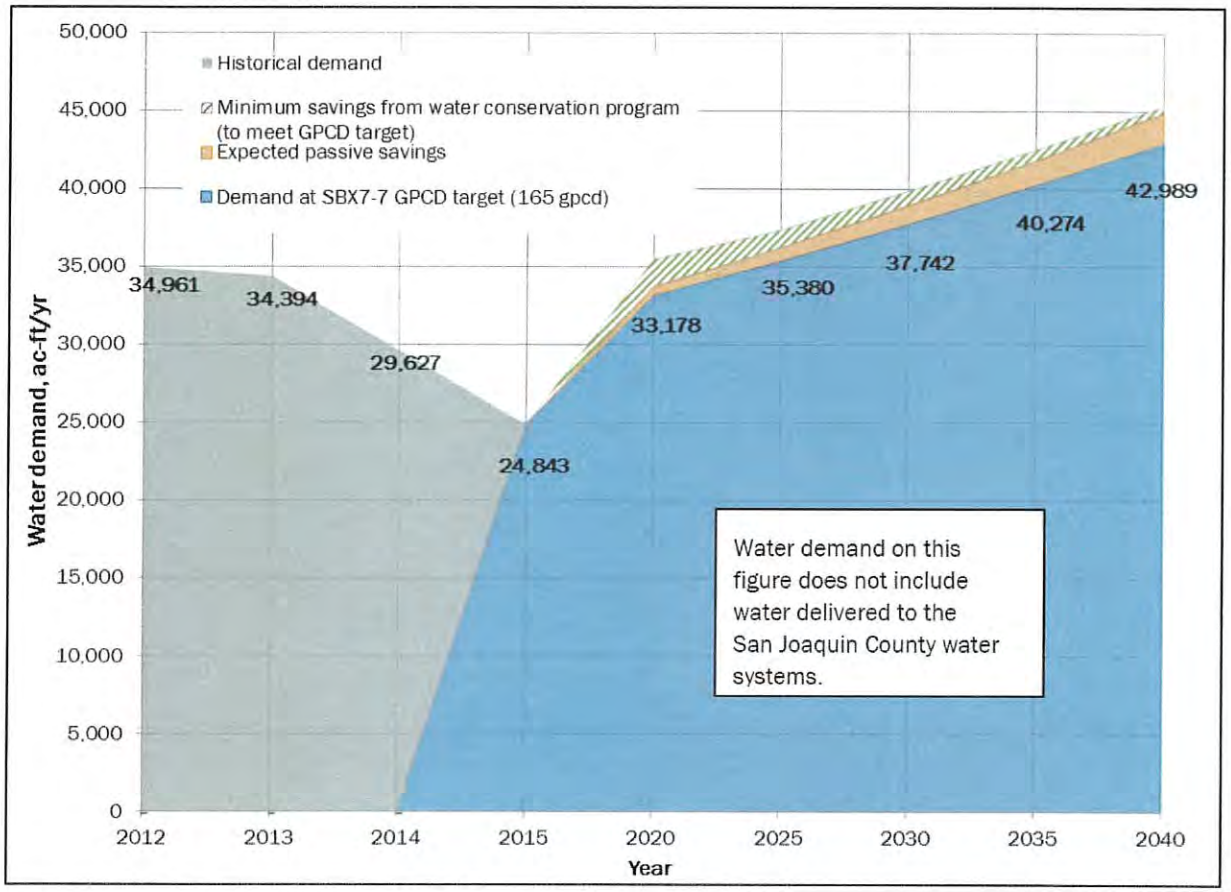


FIGURE 2-1. 2015 UWMP CITY OF STOCKTON RETAIL WATER SYSTEM HISTORICAL AND PROJECTED WATER DEMAND

2.2 CALCULATION OF BASELINE WATER DEMANDS

In **Figure 2-2**, the Project water demands lie below the 2015 UWMP Projected Demands curve but on top of what is now considered to existing population and all approved growth (a.k.a. Baseline of Existing Water Demands). The best illustration of the baseline demands is by considering existing population as existing water use that slowly increases with each year due to one or more of the following:

- Purchase of vacant homes that are currently on the market for sale
- Construction and purchase of new homes in already approved developments
- Construction of new homes in separate infill projects that do not meet the requirements of needing a WSA but require adherence to the 2035 General Plan and approval by City Council

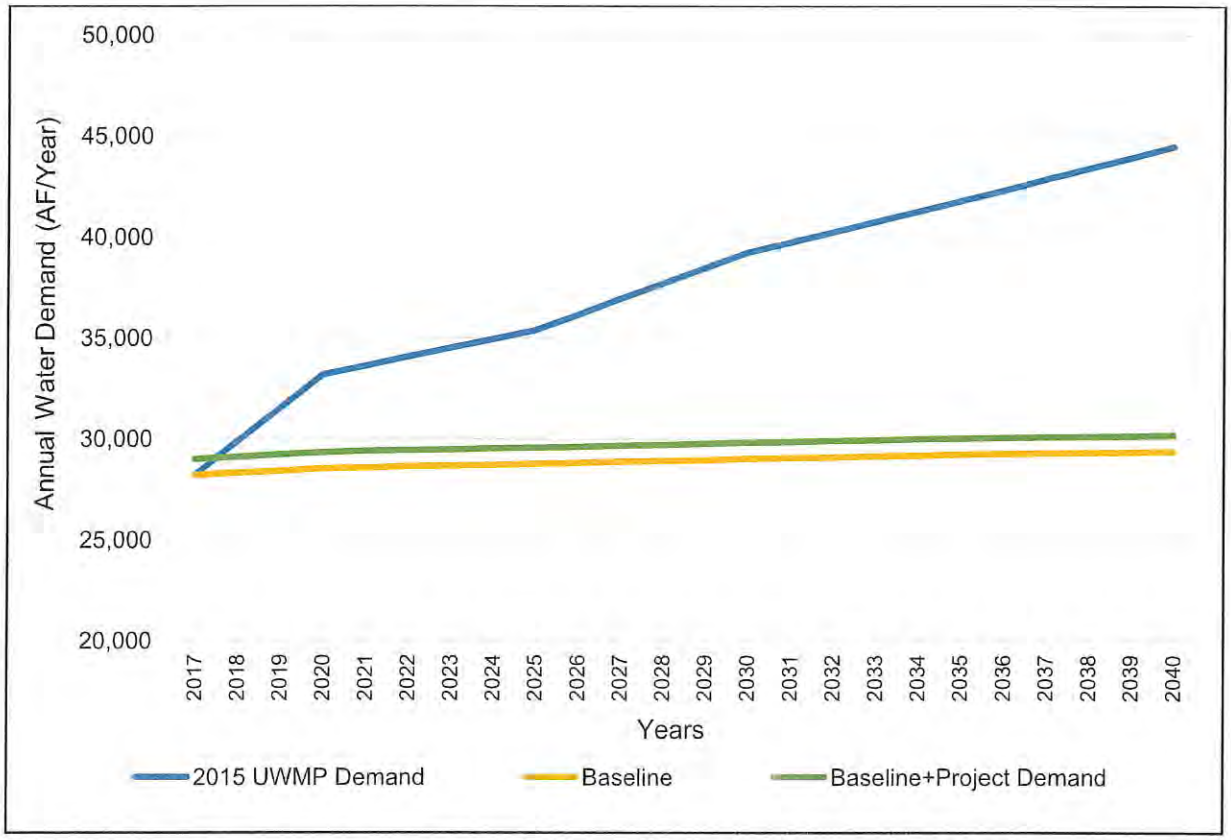


FIGURE 2-2. PROJECTED WATER DEMANDS WITH PROJECT

These are all intended to accommodate the adsorption of planned growth in the COSMA assuming no new developments are approved. These growth measures result in an increase to the COS population and an increase to COSMUD's water demands. The subtle increase in the baseline demand to account for the population increase is assumed to be 0.4% per year in 2020, 0.16% per year in 2035, and 0.12% per year in 2040. The 70 year distribution (i.e., assumed build-out in 2080) of growth is based on the amount of land with entitlements to build new homes that are assumed to be within the COSMUD service area. The amount of undeveloped land was estimated by the City of Stockton Planning Department as 3,500 acres. The 2015 UWMP projected water demand curve and the calculated "Baseline of Existing Water Demands" are shown on **Figure 2-2**.

2.3 UNIT WATER DEMANDS

The calculation of total water demand for the Project is based on the 2015 UWMP and its use of AF/year per connection. **Table 2-2** below contains the unit water demands calculated using data from the 2015 UWMP (Table 2-2, Page 2-5 of the 2015 UWMP, and Table 3-2, Page 3-2 of the 2015 UWMP). Given that the unit water demands are presented on a "per-connection" basis, a unit water demand on a "per-acre" basis can be developed using known averages on how many homes are built on a gross acre of residential developed land including arterial streets. Based on the Project's land use tabulation, total residential units range from 1,413 to 1,503. Of the 1,503 units, up to 340 units would be multi-family

residential, and up to 1,163 would be single family residential. Using the maximum number of multi-family residential units, the overall average over the 11.7 acres of multi-family residential uses is approximately 29.0 multi-family residential connections per multi-family residential acre. Using the maximum number of single family residential units, the overall average over the 232.18 acres of single family residential uses is approximately 5.0 single family residential connections per single family residential acre.

For commercial, industrial, and open space land uses, it is difficult to statistically show how many connections might occur on an acre of land within the Project. Given that demands for these uses are on average low, the unit demand factors applied in previous WSAs will continue to be used. Based on these known parameters, **Table 2-2** also includes the per-acreage demand factors for use in this WSA.

TABLE 2-2. UNIT WATER DEMANDS

Water Use Sectors	Unit Demands in AF/year/connection as per 2015 UWMP[1]	Unit Demand in AF/acre/year
Single Family Residential	0.33	1.65
Multi-family Residential	0.77	22.33
Commercial	4.08	1.50
Industrial[2]	124.86	1.50
Open Space	4.21	2.00

Key: AF = acre-feet Notes:
1.) Unit Demands for Commercial, Industrial, and Open Space sectors taken from Table 8 of 2010 UWMP. Unit Demands (AF/year/connection) for Single Family Residential and Multi-family Residential sectors were calculated by dividing the actual demand (AF/year) for the Single Family Residential sector and Multi-family Residential sector (Table 3-2, Page 3-2 of the 2015 UWMP) by the number of Single Family Residential and Multi-family Residential connections in the Year 2015 (Table 2-2, Page 2-5 of the 2015 UWMP). The Unit Demands (AF/acre/year) for Single Family Residential and Multi-family Residential sectors were calculated by taking the Unit Demand (AF/year/connection) and multiplying by the proposed connections per acre (5.0 for Single Family Residential and 29.0 for Multi-family Residential).
2.) The 124.86 AF per connection unit demand in Table 2-2 for industrial uses is high due to the small number of connections per acre of industrial zoned lands (e.g., one industrial connection can take up more than 1 acre).

Change in the unit water demands (i.e., AF/year/connection or AF/year/acre) will occur over time as demand management measures to meet SBX7-7 are implemented. This permanent change in per capita water use will be captured in the 5-year updates to the UWMP and in the progress reporting on meeting SBX7-7.

2.4 CALCULATION OF PROJECT'S AVERAGE ANNUAL WATER DEMANDS

Application of the unit demand factors in **Table 2-2** on the Project land-use diagram acreages identified in **Table 1-1** yields the total estimated annual water demand of the Project at build-out as calculated in **Table 2-3**.

TABLE 2-3. PROJECT TOTAL AVERAGE ANNUAL WATER DEMAND

Land Use	Acreage (acres)	Unit Water Demand Factor (AF/acre/year)	Estimated Water Demand (AF/year)
Single Family Residential	232.18	1.65	383.10
Multi-family Residential	11.70	22.33	261.26
Commercial	10.50	1.50	15.75
Industrial	15.57	1.50	23.36
Parks and Recreation	15.07	2.00	30.14
Major Roads	21.09	1.50	31.64
Schools and Institutional Facilities	14.70	1.50	22.05
Open Space/Agriculture	20.36	2.00	40.72
Totals	**341.17**		**808.01**

3. 0 ELEMENTS OF A WSA [WATER CODE SECTION 10910]

The format of this WSA is intended to follow California Water Code Sections 10910 through 10915 to delineate clearly the specific requirements of a WSA. This WSA is structured according to those requirements. Section 10910 of the California Water Code is intended to evaluate if existing water supply sources are adequate to meet existing water demands, the Project demands and the demands of all planned foreseeable future uses within the public water system. What follows is a breakdown of the elements of the California Water Code that respond to the adequacy of existing supplies. If under Section 10910 existing water supplies are adequate to serve existing water demands, the Project and all planned future uses within the public water system over the 20-year horizon, the WSA can move forward with a positive finding of sufficiency in water supplies. If Section 10910 is not satisfied, further evaluation into planned water supply sources and projects need to be included as per Section 10911 of the California Water Code.

In addition to meeting the California Water Code, this WSA will also assist City Planners in their evaluation of the Project's compliance in meeting 2035 General Plan policies (Goal PFS-2).

3.1 DETERMINE IF PROJECT IS SUBJECT TO CEQA [SECTION 10910(A)]

The City of Stockton Planning Department has determined that the Project is subject to CEQA and satisfies the criteria set forth in Section 10912 of the California Water Code requiring the completion of a WSA. The information contained within this WSA will partially, or in whole, address 2035 General Plan policies PFS-2.1 through PFS 2.13.

3.2 IDENTIFY RESPONSIBLE PUBLIC WATER SYSTEM [SECTION 10910(B)]

The City of Stockton Planning Department has identified COSMUD as the responsible public water system purveyor for the Project. The Planning Department and the COSMA water retailers possess information regarding existing and approved development and pending development applications (i.e., reasonably foreseeable development) within the City of Stockton that may be provided water by one or more of the water retailers, which should be considered in the preparation of this WSA.

3.3 DETERMINE IF 2015 UWMP INCLUDES WATER DEMANDS [SECTION 10910(C)]

The 2015 UWMP adopted for the COSMUD includes all (i.e., assumed build-out for the Project is 2023) of the projected water demand associated with the proposed Project and applied forecasted water supply conditions to 2040. The UWMP also includes COSMUD's preferred methodology in meeting the requirements of SBX7-7 that requires all California state water agencies to develop interim and ultimate urban water use

targets to achieve a statewide 20-percent reduction in water demands per capita by 2020.

COSMUD's water conservation best management practices and dry hydrologic year rationing measures are incorporated into the per capita water demands of the 2015 UWMP (Section 7, Water Shortage Contingency Plan, Page 7-1 of 2015 UWMP). COSMUD's eight Water Demand Management Measures (DMMs) are fully described in the 2015 UWMP (Section 8, Page 8-1.of 2015 UWMP), and are incorporated into COSMUD's overall water demand growth projections illustrated in **Figure 2-2** and **Figure 2-3** in this WSA.

3.3.1 Identify Existing Water Supplies for the Project [Section 10910(d)(1)]

Section 10910(d)(1) requires identification of existing water supply entitlements, water rights, or water service contracts relevant to the Project and quantification of water obtained by the City of Stockton pursuant to those water supply entitlements, water rights, or water service contracts in previous years.

All of COSMUD's existing water supplies are included in the 2015 UWMP (Section 5, Page 5-1 of 2015 UWMP).

3.3.2 Capital Outlay Program for Financing Delivery of Water [Section 10910(d)(2)(B)]

This subsection requires a copy of the capital outlay program for financing the delivery of water to the Project. Groundwater is provided by groundwater wells and surface water is purchased from SEWD. User rates and connection fees pay for COSMUD's water facilities and for a portion of the cost of SEWD facilities, water supply, and services.

COSMUD's water rate is approximately $48 per month based on one-half of an acre-foot per year for a single-family home. This analysis assumes that a uniform rate and connection fee are applied over the entire service area to provide for the needed capital improvements.

The current rate structure for COSMUD assumes that maintenance and operations costs are recovered from revenues generated from quantity and fixed service charges. Since replacement water from the DWSP supplies (i.e., water and infrastructure purchased by existing rate payers that require replacement as a result of regulatory reductions in the amount of available water from SEWD such as the New Melones Project) benefit existing customers, an additional fixed water supply replacement rate component is added to pay for facilities needed to replace lost supplies. Since new-growth customers will also be paying this component, they will share in the replacement water supply costs.

Costs of capacity constructed for new development is borne entirely by new growth through a development fee. Given the balance in water supplies and the dependency

of one supply on the other (i.e., surface water and groundwater) there is no distinction in geographic area on which areas benefit from which supply sources.

3.3.3 Federal, State, and Local Permits Required [Section 10910(d)(2)(C)]

This subsection requires identification of any federal, state, and local permits required for construction of any infrastructure associated with delivering water to the Project.

Any new wells for constructed for growth based on the 2035 General Plan will be added to each of the water purveyor's State Water Resources Control Board Division of Drinking Water (DDW) system permit to serve potable water supplies. The design of those facilities will require coordination with DDW. No other regulatory approvals are anticipated for meeting existing demands plus the Project demands.

3.3.4 Regulatory Approvals Required [Section 10910(d)(2)(D)]

This subsection requires identification of any regulatory approvals required for delivery of the water supply to the Project.

The local groundwater and surface water facilities to serve the Project will be added to the DPH permit to serve potable water supplies within the COSMUD service area. The design of those facilities will require coordination with DPH. No other regulatory approvals are anticipated.

3.4 IDENTIFY POTENTIAL CONFLICTS IN EXERCISING WATER RIGHTS [SECTION 10910(E)]

This section states:

> *If no water has been received in prior years by the public water system,...under the existing water supply entitlements, water rights, or water service contracts [identified to serve the proposed project], the public water system,...shall also include in its water supply assessment pursuant to subdivision (c), an identification of the other public water systems or water service contract holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system,...has identified as a source of water supply within its water supply assessments.*

The intent of this section is to identify any potential conflicts that may arise from the exercise of an existing water supply entitlement, water right, or water service contract to serve a proposed project if such water supply entitlement, water right, or water service contract has not been previously exercised.

- **Use of Groundwater** – The water demands of the COSMA will be met in part with groundwater. The COSMA urban water retail purveyors have previously exercised their rights as overlying groundwater appropriators to serve the water demands of their customers through above normal, drought, and multiple drought years over the past 20+ years and will continue to exercise those rights to sustainable levels to provide potable water supplies.

- **Use of Surface Water** – The surface water supplies associated with the conjunctive use program fall into three categories: (1) water supplies derived from the Central Valley Project (CVP), (2) interim water supply contracts, and (3) surplus supplies available on an intermittent basis and (4) supplies based on a Water Right Permit(s). Intermittent supplies may be used, if available, but are not considered "firm" and not used in the WSA.

  The parties that could most directly be affected by exercise of these water rights are CVP contractors, State Water Project (SWP) contractors, water rights holders subject to Term 91 conditions, and riparian diverters downstream from the points of diversion for each contract.

3.5 GROUNDWATER ASSESSMENT [SECTION 10910(F)]

The water demands of the Project will be met partially with groundwater. Consequently, Section 10910(f) requires specific additional information.

3.6 SECTION 10910(F)(1)

Section 10910(f)(1) requires a review of groundwater data contained in the UWMP.

The 2015 UWMP identifies past volumes of groundwater extracted by COSMUD (Section 5.2 on Page 5-7 of the 2015 UWMP) and fully describes the COSMUD's past and future use of groundwater as a supply source.

3.6.1 Section 10910(f)(4)

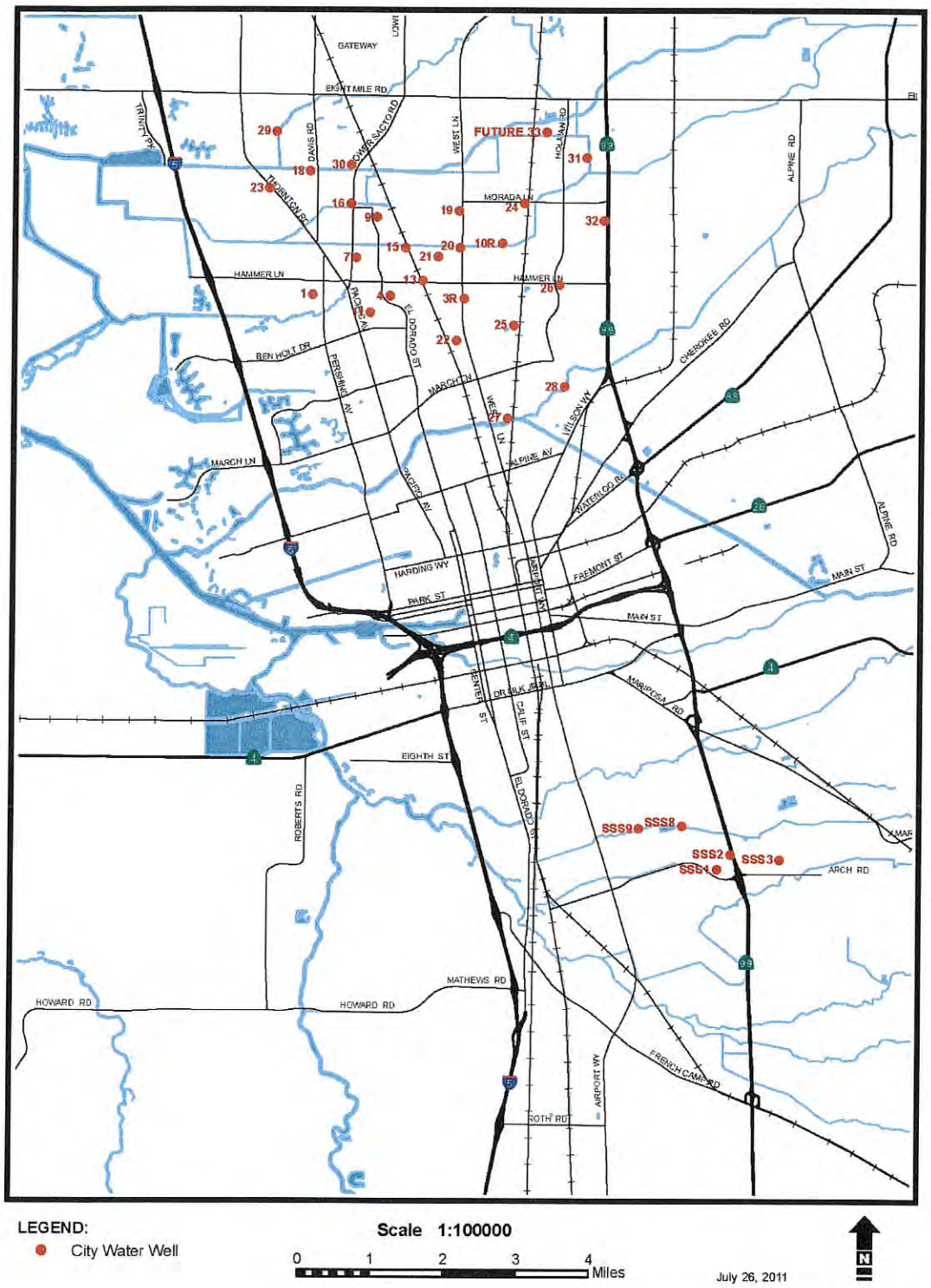
Section 10910(f)(4) requires a description of the projected volume and geographic distribution of groundwater extractions from the basin. For the existing supplies, this is presented in Section 10910(d)(1) above and the location of groundwater wells are represented on **Figure 3-1**.

3.6.2 Section 10910(f)(5)

Section 10910(f)(5) requires an analysis of the sufficiency of the groundwater basin to meet the demands associated with the Project.

This is presented in the 2010 UWMP (Section 5.2, Pages 5-2 through 5-7 of 2015 UWMP).

WATER WELLS-CITY OF STOCKTON



LEGEND:
City Water Well

Scale 1:100000
0 1 2 3 4 Miles

July 26, 2011

FIGURE 3-1. 2015 LOCATION OF COSMUD MUNICIPAL GROUNDWATER WELLS

4. 0 DETERMINATION OF WATER SUPPLY SUFFICIENCY

This WSA determines that the COSMUD can support the Project based on the 2015 UWMP. COSMUD has shown, without a doubt, that sufficient water supplies exist to meet the Project's build-out water demand as well as all existing and reasonably foreseeable water demands.

COSMUD makes this determination based on the information provided in this WSA and on the following specific facts:

- The existing near-term and long-term reliable supplies of surface water supplies and indigenous groundwater supplies can deliver a sustainable reliable water supply to meet existing and foreseeable water demands without impacting environmental values and/or impacting the current stabilization of the groundwater basin underlying the COSMA.
- The Project water demands will be positively affected by the implementation of COSMUD's eight Demand Management Measure and adherence to SB7-7 (i.e., required statewide 20 percent reduction on a per capita basis by 2020).
- The existing and future use of groundwater supplies has been extensively described in the 2015 UWMP which includes the Groundwater Management Plan for Eastern San Joaquin Groundwater Basin as Appendix "H". All studies show that sufficient groundwater supplies exist.

It should be noted that the determination of sufficiency for this project does not constitute a reservation of supply to serve this project. SB 610 only requires that the Assessment be conducted at the time that the EIR is prepared, and does not require that the Assessment be updated at any point in the future.

Appendix A

Appendix J

Noise Report

Tra Vigne Draft EIR Environmental Noise Assessment

City of Stockton, California

June 18, 2017

jcb Project # 2017-158

Prepared for:

De Novo Planning Group

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President
Member, Institute of Noise Control Engineering (INCE)

This section provides a general description of the existing noise sources in the Project vicinity, a discussion of the regulatory setting, and identifies potential noise impacts associated with the proposed Project. Project impacts are evaluated relative to applicable noise level criteria and to the existing ambient noise environment. Mitigation measures have been identified for significant noise-related impacts.

3.11.1 ENVIRONMENTAL SETTING

KEY TERMS

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given area consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of noise.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, defined as ten times the logarithm of the ratio of the sound pressure squared over the reference pressure squared.
CNEL	Community noise equivalent level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 to 10 pm) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic acoustic signal, expressed in cycles per second or Hertz.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
$L_{(n)}$	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L_{50} is the sound level exceeded 50 percent of the time during the one hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.
SEL	Sound exposure levels. A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event.

FUNDAMENTALS OF ACOUSTICS

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 pm to 7:00 am) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it

tends to disguise short-term variations in the noise environment. CNEL is similar to L_{dn}, but includes a +5 dB penalty for evening noise. Table 3.11-1 lists several examples of the noise levels associated with common situations.

TABLE 3.11-1: TYPICAL NOISE LEVELS

COMMON OUTDOOR ACTIVITIES	*NOISE LEVEL (DBA)*	*COMMON INDOOR ACTIVITIES*
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

SOURCE: CALTRANS, TECHNICAL NOISE SUPPLEMENT, TRAFFIC NOISE ANALYSIS PROTOCOL. NOVEMBER 2009.

EFFECTS OF NOISE ON PEOPLE

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction;
- Interference with activities such as speech, sleep, and learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a 1 dBA change cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and

- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

EXISTING NOISE LEVELS

Existing Land Uses

The Project site consists largely of active agricultural fields (roughly 253 acres in production). Surrounding land uses include some single family residential uses to the north across Eight Mile Road, and some commercial and light industrial at the northeast corner of Eight Mile Road. The Union Pacific Railroad (UPRR) is located to the east, and agricultural land is located to the west and to the south. Pacific Bell and Bragg Investment Company are located within the boundaries of the site at the north-central portion of the site.

Existing Ambient Noise Levels

To quantify the existing ambient noise environment in the Project vicinity, short-term and continuous (24-hour) noise level measurements were conducted on the Project site for the former Bear Creek East Project in 2005, and additional noise measurements were conducted on March 15, 2016. The noise measurement locations are shown on Figure 3.11-1. The noise level measurement survey results are provided in Table 3.11-2. Appendix B of the Noise Report (Appendix F of this EIR) shows the complete results of the continuous noise monitoring at Site A.

TABLE 3.11-2: SUMMARY OF EXISTING BACKGROUND NOISE MEASUREMENT DATA

SITE	LOCATION	L_{DN}	AVERAGE MEASURED HOURLY NOISE LEVELS, DB					
			DAYTIME (7AM-10PM)			NIGHTTIME (10PM-7AM)		
			L_{EQ}	L_{50}	L_{MAX}	L_{EQ}	L_{50}	L_{MAX}
CONTINUOUS (24-HOUR) NOISE LEVEL MEASUREMENTS								
A	90 feet from the UPRR Track	80.1 dB	72.1	51	89	73.9	44	97
SHORT-TERM NOISE LEVEL MEASUREMENTS								
1	East of West Lane 2005 2016	NA	 65.4 63.2	 57 56	 74.3 75.1	 @1:40 pm @11.20 am		
2	Northeast Corner of Project Site 2005 2016	NA	 62.4 60.4	 57 55	 74.7 73.9	 @2:00 pm @12:30 pm		

SOURCE: J.C. BRENNAN & ASSOCIATES, INC., 2005 & 2016.

Tra Vigne EIR

Figure 1: Location & Measurement Sites

The sound level meters were programmed to collect hourly noise level intervals at each site during the survey. The maximum value (L_{max}) represents the highest noise level measured during an interval. The average value (L_{eq}) represents the energy average of all of the noise measured during an interval. The median value (L_{50}) represents the sound level exceeded 50 percent of the time during an interval.

Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meters were used for the ambient noise level measurement survey. The meters were calibrated before and after use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

EXISTING ROADWAY NOISE LEVELS

To predict existing noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The model is based upon the Calveno reference noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions.

Traffic volumes for existing conditions were obtained from the traffic study prepared for the Project. Truck percentages and vehicle speeds on the local area roadways were estimated from field observations.

Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each Project-area roadway segment. Where traffic noise barriers are predominately along a roadway segment, a -5 dB offset was added to the noise prediction model. A -5 dB offset was also applied where outdoor activity areas are shielded by intervening buildings. In some locations, sensitive receptors may be located at distances which vary from the assumed calculation distance and may experience shielding from intervening barriers or sound walls. However, the traffic noise analysis is believed to be representative of the majority of sensitive receptors located closest to the Project-area roadway segments analyzed in this report.

Table 3.11-3 shows the existing traffic noise levels in terms of L_{dn} at the closest sensitive receptors along each roadway segment. A complete listing of the FHWA Model input data is contained in Appendix C of the Noise Report (Appendix F of this EIR).

TABLE 3.11-3: EXISTING TRAFFIC NOISE LEVELS AT A DISTANCE OF 100 FEET

ROADWAY	*SEGMENT*	*EXTERIOR TRAFFIC NOISE LEVEL, DB L_{DN}* [1]
Eight Mile Road	Lower Sacramento Rd. to Davis Rd.	65
	Lower Sacramento Rd. to West Ln.	66
	West Ln. To Micke Grove/Holman Rd.	64
West Lane	Eight Mile Rd. to Ham Ln.	65
	Morada Ln. to Eight Mile Rd.	66
	Morada Ln. to Knickerbocker Dr.	67
Morada Lane	West of West Ln.	57
	East of West Ln.	64
State Route 99	Eight Mile Rd. to Armstrong Rd.	79
	Eight Mile Rd. to Morada Ln.	79
	Morada Ln. to Hammer Ln.	80

[1] *TRAFFIC NOISE LEVELS INCLUDE NOISE FROM SR 120 WHICH CONTRIBUTES TO OVERALL TRAFFIC NOISE LEVELS AT MOST LOCATIONS IN THE PROJECT VICINITY.*

SOURCE: FHWA-RD-77-108 WITH INPUTS FROM KD ANDERSON, AND J.C. BRENNAN & ASSOCIATES, INC. 2016.

EXISTING RAILROAD NOISE LEVELS

Railroad activity within the Project vicinity generally occurs along the UPRR line located near the eastern boundary of the Project site. j.c. brennan & associates, Inc. used previously conducted continuous hourly noise measurements for the Cannery Park Project directly east from the Project site. The noise measurements were conducted adjacent to the railroad tracks for a 24-hour period. The sound level meter was programmed to collect single event noise level data due to train passbys on the Project site, as well as overall hourly noise level data. The noise level measurements were conducted at a distance 90 feet east of the centerline of the railroad track and south of a grade crossing.

Instrumentation consisted of LDL Model 820 precision integrating sound level meters. The systems were calibrated before use with a matching acoustical calibrator to ensure accuracy of the measurements.

The purpose of the noise level measurements was to determine typical sound exposure levels (SEL) for railroad line operations within the Project vicinity, accounting for the effects of travel speed and other factors which may affect noise generation. In addition, the noise measurement equipment was programmed to identify individual train operations, so that the typical number of train operations could be determined.

The results indicated that measured train operations resulted in sound exposure levels (SEL) ranging from 102 dB to 112 dB at a distance of 90 feet. The results also indicated that the typical train operation resulted in a mean SEL of 107.4 dB at a distance of 90 feet from the railroad track centerline. Based upon the noise measurement data, approximately 28 trains per day operate along the track, with approximately 50% of the trains operating during the nighttime hours (10 pm to 7 am) and 50 percent of the trains operating during the daytime hours (7 am to 10 pm). Table 3.11-4 shows the results of the measured noise level, and distances to the railroad noise contours.

TABLE 3.11-4: EXISTING UPRR RAILROAD NOISE LEVELS

L_{DN} AT 90 FEET	DISTANCES TO CONTOURS		
	60 dB L_{dn}	65 dB L_{dn}	70 dB L_{dn}
80 dB L_{dn}	1,969 feet	914 feet	424 feet

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2005 AND 2016.

EXISTING INDUSTRIAL NOISE LEVELS

Pacific Bell and Bragg Investment Company are located within the boundaries of the site at the north-central portion of the site. To quantify existing industrial noise levels in the vicinity of the Project site, j.c. brennan & associates, Inc. staff conducted short-term noise level measurements at three locations on the adjacent industrial land uses. Noise levels were generally in the range of 60 dB L_{eq} at a distance of 100 feet. Noise levels associated with the operations included heavy equipment moving about the site and idling equipment.

3.11.2 REGULATORY SETTING

FEDERAL

There are no federal regulations related to noise that apply to the proposed Project.

STATE

California Environmental Quality Act

The California Environmental Quality Act (CEQA) Guidelines, Appendix G, indicate that a significant noise impact may occur if a project exposes persons to noise or vibration levels in excess of local general plans or noise ordinance standards, or cause a substantial permanent or temporary increase in ambient noise levels. CEQA standards are discussed more below under the Thresholds of Significance criteria section.

California State Building Codes

The State Building Code, Title 24, Part 2 of the State of California Code of Regulations establishes uniform minimum noise insulation performance standards to protect persons within new buildings which house people, including hotels, motels, dormitories, apartment houses and dwellings other than single-family dwellings. Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB L_{dn} or CNEL in any habitable room.

Title 24 also mandates that for structures containing noise-sensitive uses to be located where the L_{dn} or CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels. If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment

CITY OF STOCKTON

City of Stockton General Plan

The following policies of the Stockton General Plan related to noise are applicable to the proposed Project.

Health & Safety Element

NOISE POLICIES

HS-2.1. Sensitive Receptors. The City shall prohibit the development of new commercial, industrial, or other noise-generating land uses adjacent to existing residential uses, and other sensitive noise receptors such as schools, health care facilities, libraries, and churches if noise levels are expected to exceed 70 dBA Community Noise Equivalent (CNEL) (decibels on A-weighted scale CNEL) measured at the property line of the noise sensitive land use.

HS-2.2. Noise Compatibility Guidelines. The City shall allow the development of noise sensitive land uses (which include, but are not limited to, residential neighborhoods, schools, and hospitals) only in areas where existing or projected noise levels are "acceptable" according to Table HS-11.1 [Table 3.11-5 of this report] "Land Use Compatibility for Community Noise Environments." Noise mitigation measures may be required to reduce noise in outdoor activity areas and interior spaces to achieve these levels.

HS-2.11. Limiting Construction Activities. The City shall limit construction activities to the hours of 7:00 am to 7:00 pm, Monday through Saturday. No construction shall occur on Sundays or national holidays without a written permit from the city.

HS-2.12. Sound Attenuation Features. The City shall require sound attenuation features such as walls, berming, heavy landscaping between commercial, industrial, and residential uses to reduce noise and vibration impacts.

HS-2.13. Noise Buffering. The City shall require noise buffering or construction treatments (additional insulation, double paned glass, etc.) in new development that includes noise sensitive uses located near major streets, highways, the airport, railroad tracks, or other significant noise sources.

HS-2.14. State Noise Insulation Standards. The City shall enforce the State Noise Insulation Standards (California Administrative Code, Title 24) and Chapter 35 of the Uniform Building Code.

HS-2.17. Commercial Uses. The City shall require that noise produced by commercial uses not exceed 75 dB L_{dn}/CNEL at the nearest property line.

TABLE 3.11-5: MAXIMUM ALLOWABLE AMBIENT NOISE EXPOSURE BY LAND USE

TABLE HS-11.1 OF THE STOCKTON GENERAL PLAN							
LAND USE TYPE	NOISE LEVELS (L_{DN})						
	0-55	56-60	61-65	66-70	71-75	75-80	>81
Residential							
Hotels, Motels							
Schools, Libraries, Churches, Hospitals, Extended Care Facilities							
Auditoriums, Concert Halls, Amphitheaters							
Sports Arenas, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business Commercial and Professional							
Mining, Industrial, Manufacturing, Utilities, Agriculture							

	Normally Acceptable. Specified land use is satisfactory, based on the assumption that any buildings involved are of normal, conventional construction, without any special noise insulation requirements.
	Conditionally Acceptable. New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed insulation features have been included in the design.
	Unacceptable. New construction or development should not be undertaken.

If existing noise standards are currently exceeded, a proposed project shall not incrementally increase noise levels by more than 3 dBA.

Based upon the City of Stockton General Plan Noise Element Policy HS-2.1 outlined above, it would appear that new commercial uses could generate noise levels of up to 70 dB CNEL at existing residential uses. However, new residential uses adjacent to commercial developments would need to comply with the noise level guidelines shown in Table 3.11-5 above, as outlined in Policy HS-2.2. This policy would establish an acceptable exterior noise environment of 60 to 70 dB L_{dn}.

City of Stockton Municipal Code

The City of Stockton Municipal Code Chapter 16, Development Code, contains performance standards for new developments, as shown in Table 3.11-6. Noise generated from the proposed Project is considered stationary noise; therefore, the following standards would apply to the Project.

TABLE 3.11-6: EXTERIOR HOURLY NOISE LEVEL STANDARDS FOR STATIONARY NOISE SOURCES

CHAPTER 16 CITY OF STOCKTON DEVELOPMENT CODE		
Noise Level Descriptor	Maximum Acceptable Noise Level	
	Daytime (7 am - 10 pm)	Nighttime (10 pm - 7 am)
Hourly Leq, dBA	55	45
Maximum Level (Lmax), dBA	75	65

** EACH OF THE NOISE LEVEL STANDARDS SPECIFIED ABOVE SHALL BE REDUCED BY FIVE DBA FOR SIMPLE TONE, NOISE CONSISTING PRIMARILY OF SPEECH OR MUSIC, OR RECURRING IMPULSIVE NOISES.*

SOURCE: CITY OF STOCKTON GENERAL PLAN NOISE ELEMENT, TABLE 1

There are also exemptions to the standards and activities which are considered to be violations that are outlined in the Municipal Code. The following provides a list of the pertinent Municipal Code exemptions and violations:

16-340.020 - ACTIVITIES EXEMPT FROM NOISE REGULATIONS

16-340.020(C) – Outdoor play/school ground activities. Activities conducted on parks and playgrounds and school grounds, between 7:00 am and 10:00 pm, except for additional hours that may be granted by the City Manager. Otherwise, outdoor activities shall meet standards in Table 3-7 (of the Code).

16-340.030 – ACTIVITIES DEEMED VIOLATIONS OF THIS DIVISION

16-340.030(A) – Construction Noise. Operations or causing the operation of tools or equipment on private property used in alteration, construction, demolition, drilling, or repair work between the hours of 10:00 pm and 7:00 am, so that the sound creates a noise disturbance across a residential property line, except for emergency work of public service utilities.

16-340.030(B) – Loading and unloading operations. Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects on private property between the hours of 10:00 pm and 7:00 am in a manner to cause a noise disturbance.

16-340.030(F) – Sweepers and associated equipment. Operating or allowing the operation of sweepers or associated sweeping equipment (e.g., blowers) on private property between the hours of 10:00 pm and 7:00 am the following day in, or adjacent to, a residential zoning district.

16-340.040 – STANDARDS

16-340.040(B)(2)(c) – Adjacent to other uses. If commercial, industrial, or public facilities land uses are adjacent to any noise-sensitive land uses or vacant residential (RE,RL,RM, or RH) or open space (OS) zoning districts, these uses shall comply with the performance standards contained in Table 3-7, Part II.

VIBRATION STANDARDS

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

The City of Stockton does not have specific policies pertaining to vibration levels. However, vibration levels associated with construction are addressed as potential vibration impacts associated with Project implementation.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 3.11-7 indicates that the threshold for damage to structures ranges from 2 to 6 peak particle velocity in inches per second (in/sec p.p.v). One-half this minimum threshold or 1 in/sec p.p.v. is considered a safe criterion that would protect against architectural or structural damage. The general threshold at which human annoyance could occur is noted as 0.1 in/sec p.p.v.

TABLE 3.11-7: EFFECTS OF VIBRATION ON PEOPLE AND BUILDINGS

PEAK PARTICLE VELOCITY		*HUMAN REACTION*	*EFFECT ON BUILDINGS*
MM/SEC.	*IN./SEC.*		
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage.

SOURCE: CALTRANS. TRANSPORTATION RELATED EARTHBORN VIBRATIONS. TAV-02-01-R9601 FEBRUARY 20, 2002.

3.11.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the Project will have a significant impact related to noise if it will result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project;
- A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without Project;
- For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the Project area to excessive noise levels within two miles of a public airport or public use airport; or
- For a Project within the vicinity of a private airstrip, expose people residing or working in the Project area to excessive noise levels.

The Project site is not located within two miles of a public or private airport or airstrip. The nearest public airport or public use airport, the Lodi Airpark, is located approximately 2.0 miles north of the Project site. Additionally, the Kingdon Executive Airport is located approximately 3.84 miles northwest of the Project site. Therefore, airport and airport noise is not discussed further in this analysis.

Determination of a Significant Increase in Noise Levels

California Environmental Quality Act (CEQA) guidelines define a significant impact of a project if it "increases substantially the ambient noise levels for adjoining areas". The City of Stockton General Plan Health and Safety Element (Section 11.2, Noise) provides specific guidance for assessing increases in ambient noise. As described previously, Table 3.11-5 identifies the maximum allowable ambient noise exposure by land use within the City of Stockton.

Additionally, in making a determination of impact If existing noise standards are currently exceeded, a substantial increase will occur if ambient noise levels are incrementally increased by 3 dB or more.

IMPACTS AND MITIGATION MEASURES

Impact 3.11-1: The proposed Project will not result in a significant increase in traffic noise levels at existing receptors. (Less than Significant)

Proposed Project:

Table 3.11-8 shows the predicted traffic noise level increases on the local roadway network for Existing and Cumulative Project and No Project conditions. Appendix C of the Noise Report (Appendix F of this EIR) provides the complete inputs and results of the FHWA traffic noise modeling.

Some noise sensitive receptors located along the Project-area roadways are currently exposed to exterior traffic noise levels exceeding the City of Stockton 60 dB L_{dn} exterior noise level standard for residential uses, as shown in Table 3.11-8. As shown in Table 3.11-8, these receptors will continue to experience elevated exterior noise levels with implementation of the proposed Project. The proposed Project's contribution to traffic noise increases is predicted to range between -1 dBA L_{dn} and +2 dBA L_{dn}. This will not exceed the City's substantial increase criteria of 3 dB. Therefore, impacts associated with traffic noise levels at existing receptors as a result of the proposed Project would be **less than significant**.

TABLE 3.11-8: EXISTING APPROVED PROJECT AND CUMULATIVE TRAFFIC NOISE LEVELS (PROPOSED PROJECT)

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, dB) AT NEAREST SENSITIVE RECEPTORS					
		EXISTING + APPROVED	EXISTING + APPROVED + TRA VIGNE	CHANGE	CUMULATIVE NO PROJECT	CUMULATIVE + TRA VIGNE	CHANGE
Eight Mile Road	Lower Sacramento Rd. to Davis Rd.	67	67	0	70	70	0
	Lower Sacramento Rd. to West Ln.	68	68	0	71	72	+1
	West Ln. To Micke Grove/Holman Rd.	65	67	+2	71	71	0
West Lane	Eight Mile Rd. to Hammer Ln.	65	65	0	69	69	0
	Morada Ln. to Eight Mile Rd.	67	68	+1	71	71	0
	Morada Ln. to Knickerbocker Dr.	68	69	+1	72	72	0
Morada Lane	West of West Ln.	58	58	0	66	66	0
	East of West Ln.	65	65	0	65	66	+1
State Route 99	Eight Mile Rd. to Armstrong Rd.	80	80	0	83	82	-1
	Eight Mile Rd. to Morada Ln.	81	81	0	83	83	0
	Morada Ln. to Hammer Ln.	80	80	0	84	84	0

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016 & 2017.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition.

Table 3.11-9 shows the predicted traffic noise level increases on the local roadway network for Existing and Cumulative Project and No Project conditions, for the No Build Alternative. Appendix C of the Noise Report (Appendix F of this EIR) provides the complete inputs and results of the FHWA traffic noise modeling.

As noted previously, some noise sensitive receptors located along the Project-area roadways are currently exposed to exterior traffic noise levels exceeding the City of Stockton 60 dB L_{dn} exterior noise level standard for residential uses, as shown in Table 3.11-9. As shown in Table 3.11-9, these receptors will continue to experience elevated exterior noise levels with implementation of the No Build Alternative. The No Build Alternative would not contribute to traffic noise increases. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

TABLE 3.11-9: EXISTING APPROVED PROJECT AND CUMULATIVE TRAFFIC NOISE LEVELS (NO BUILD ALTERNATIVE)

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, dB) AT NEAREST SENSITIVE RECEPTORS					
		EXISTING + APPROVED	EXISTING + APPROVED + NO BUILD	CHANGE	CUMULATIVE NO PROJECT	CUMULATIVE + NO BUILD	CHANGE
Eight Mile Road	Lower Sacramento Rd. to Davis Rd.	67	67	0	70	70	0
	Lower Sacramento Rd. to West Ln.	68	68	0	71	72	+1
	West Ln. To Micke Grove/Holman Rd.	65	65	0	71	71	0
West Lane	Eight Mile Rd. to Hammer Ln.	65	65	0	69	69	0
	Morada Ln. to Eight Mile Rd.	67	67	0	71	70	-1
	Morada Ln. to Knickerbocker Dr.	68	68	0	72	71	-1
Morada Lane	West of West Ln.	58	58	0	66	66	0
	East of West Ln.	65	65	0	65	65	0
State Route 99	Eight Mile Rd. to Armstrong Rd.	80	80	0	83	82	-1
	Eight Mile Rd. to Morada Ln.	81	81	0	83	83	0
	Morada Ln. to Hammer Ln.	80	80	0	84	84	0

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016 & 2017.

With Bridge Alternative:

Under the With Bridge Alternative, the Project site would be developed with similar land use designations and circulation facilities as the proposed Project. However, unlike the proposed Project, this alternative would include construction of the bridge crossing over Bear Creek associated with what is shown on the Future Roadways Map as an extension of Marlette Road from the west through the Project site and ultimately traveling eastward through the Bear Creek South project to Holman Road.

This alternative would result in the same number of HDR units as the proposed Project (340 units), and would reduce the number of LDR units from 1,073 under the proposed Project to 1,066 units, for a total of 1,406 units. This would result in a reduction of seven units when compared to the proposed Project. Additionally, this alternative would dedicate an equal amount of commercial and non-traditional park areas as the proposed Project, and would increase the amount of traditional park area from 15.07 acres under the proposed Project to 15.37 acres. The anticipated commercial uses and utility improvements under the With Bridge Alternative would be similar to the proposed Project.

This alternative also establishes a site for a 14.7-acre K-8 school to be developed by the LUSD at their discretion. If the LUSD decides to not pursue building a school at this site then the site would be developed for residential in accordance with the General Plan land use designation which would result in the construction an additional 90 units in place of the school. Under this variation, the total residential units would increase from 1,406 to 1,496 units. The balance of the Project site would be developed as proposed under the Proposed Project.

Table 3.11-10 shows the predicted traffic noise level increases on the local roadway network for Existing and Cumulative Bridge Alternative and No Project conditions, for the Bridge Alternative. Appendix C of the Noise Report (Appendix F of this EIR) provides the complete inputs and results of the FHWA traffic noise modeling.

As noted previously, some noise sensitive receptors located along the Project-area roadways are currently exposed to exterior traffic noise levels exceeding the City of Stockton 60 dB L_{dn} exterior noise level standard for residential uses, as shown in Table 3.11-10. As shown in Table 3.11-10, these receptors will continue to experience elevated exterior noise levels with implementation of the With Bridge Alternative. The Bridge Alternative contribution to traffic noise increases is predicted to range between 0 dBA L_{dn} and +2 dBA L_{dn}. This will not exceed the City's substantial increase criteria of 3 dB. Therefore, impacts associated with traffic noise levels at existing receptors as a result of the proposed Project would be **less than significant**. Compared to the proposed Project, this alternative is considered to be similar in traffic noise impacts.

TABLE 3.11-10: EXISTING APPROVED PROJECT AND CUMULATIVE TRAFFIC NOISE LEVELS (BRIDGE ALTERNATIVE)

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, dB) AT NEAREST SENSITIVE RECEPTORS					
		EXISTING + APPROVED	EXISTING + APPROVED + BRIDGE	CHANGE	CUMULATIVE NO PROJECT	CUMULATIVE + BRIDGE	CHANGE
Eight Mile Road	Lower Sacramento Rd. to Davis Rd.	67	67	0	70	70	0
	Lower Sacramento Rd. to West Ln.	68	68	0	71	72	+1
	West Ln. To Micke Grove/Holman Rd.	65	67	+2	71	71	0
West Lane	Eight Mile Rd. to Hammer Ln.	65	65	0	69	69	0
	Morada Ln. to Eight Mile Rd.	67	68	+1	71	71	0
	Morada Ln. to Knickerbocker Dr.	68	68	0	72	72	0
Morada Lane	West of West Ln.	58	58	0	66	66	0
	East of West Ln.	65	65	0	65	66	+1
State Route 99	Eight Mile Rd. to Armstrong Rd.	80	80	0	83	82	0
	Eight Mile Rd. to Morada Ln.	81	81	0	83	83	0
	Morada Ln. to Hammer Ln.	80	80	0	84	84	0

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016 & 2017.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the Project site would be developed with the same land use designations and circulation facilities as described in the City's General Plan 2035. This alternative would not require a General Plan amendment. The balance of the Project site would be developed as proposed under the proposed Project. Under this alternative, the high density residential area would be decreased from 11.7 acres under the proposed Project to 10.67 acres. Additionally, the commercial area would be decreased from 10.5 acres under the proposed Project to 9.0 acres. This alternative would not include dedication of an K-8 school site. This alternative would include construction of the bridge crossing over Bear Creek, which is currently reflected in the Circulation Element of the General Plan 2035. The bridge crossing would change the trip distribution when compared to the proposed Project by providing an alternative access way to the south.

Table 3.11-11 shows the predicted traffic noise level increases on the local roadway network for Existing and Cumulative Project and No Project conditions for the General Plan 2035 Alternative. Appendix C of the Noise Report (Appendix F of this EIR) provides the complete inputs and results of the FHWA traffic noise modeling.

As noted previously, some noise sensitive receptors located along the Project-area roadways are currently exposed to exterior traffic noise levels exceeding the City of Stockton 60 dB L_{dn} exterior noise level standard for residential uses, as shown in Table 3.11-11. As shown in Table 3.11-11, these receptors will continue to experience elevated exterior noise levels with implementation of the General Plan 2035 Alternative. The General Plan 2035 Alternative contribution to traffic noise increases is predicted to range between +1 dBA L_{dn} and +2 dBA L_{dn}. This will not exceed the City's substantial increase criteria of 3 dB. Therefore, impacts associated with traffic noise levels at existing receptors as a result of the General Plan 2035 Alternative would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

TABLE 3.11-11: EXISTING APPROVED PROJECT AND CUMULATIVE TRAFFIC NOISE LEVELS (GENERAL PLAN 2035 ALTERNATIVE)

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, dB) AT NEAREST SENSITIVE RECEPTORS					
		EXISTING + APPROVED	EXISTING + APPROVED + GP 2035	CHANGE	CUMULATIVE NO PROJECT	CUMULATIVE + GP 2035	CHANGE
Eight Mile Road	Lower Sacramento Rd. to Davis Rd.	67	67	0	70	70	0
	Lower Sacramento Rd. to West Ln.	68	68	0	71	71	0
	West Ln. To Micke Grove/Holman Rd.	65	67	+2	71	71	0
West Lane	Eight Mile Rd. to Hammer Ln.	65	65	0	69	69	0
	Morada Ln. to Eight Mile Rd.	67	69	+2	71	71	0
	Morada Ln. to Knickerbocker Dr.	68	69	+1	72	72	0
Morada Lane	West of West Ln.	58	58	0	66	66	0
	East of West Ln.	65	65	0	65	65	0
State Route 99	Eight Mile Rd. to Armstrong Rd.	80	80	0	83	83	0
	Eight Mile Rd. to Morada Ln.	81	81	0	83	83	0
	Morada Ln. to Hammer Ln.	80	80	0	84	84	0

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016 & 2017.

Reduced Project Alternative:

Under the Reduced Project Alternative, the Project site would be developed with the same components as the proposed Project, but the area utilized for the development would be reduced by approximately 33 percent. The total Project site would be reduced by approximately 106.2 acres, and the existing 15.57-acre industrial area would be eliminated from the Project site. This approximately 197.05-acre alternative would result in up to 715 LDR units (with school) to 805 LDR units (without school) and up to 226 HDR units (with or without school), for a total of 941 units (with school) to 1,031 units (without school). This would result in a reduction of 472 (with or without school) units when compared to the proposed Project. The 10.5-acre commercial area in the northwest portion of the Project site would be eliminated. This would eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for a 14.7-acre K-8 school to be developed by the LUSD. However, if the LUSD decides against the K-8 school siting, the area will instead include the development of single family residential units.

Table 3.11-12 shows the predicted traffic noise level increases on the local roadway network for Existing and Cumulative Project and No Project conditions for the Reduced Project Alternative. Appendix C of the Noise Report (Appendix F of this EIR) provides the complete inputs and results of the FHWA traffic noise modeling.

As noted previously, some noise sensitive receptors located along the Project-area roadways are currently exposed to exterior traffic noise levels exceeding the City of Stockton 60 dB L_{dn} exterior noise level standard for residential uses, as shown in Table 3.11-12. As shown in Table 3.11-12, these receptors will continue to experience elevated exterior noise levels with implementation of the Reduced Project Alternative. The Reduced Project Alternative contribution to traffic noise increases is predicted to range between -1 dBA L_{dn} and +1 dBA L_{dn}. This will not exceed the City's substantial increase criteria of 3 dB. Therefore, impacts associated with traffic noise levels at existing receptors as a result of the Reduced Project Alternative would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

TABLE 3.11-12: EXISTING APPROVED PROJECT AND CUMULATIVE TRAFFIC NOISE LEVELS (REDUCED PROJECT ALTERNATIVE)

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, dB) AT NEAREST SENSITIVE RECEPTORS					
		EXISTING + APPROVED	EXISTING + APPROVED + REDUCED PROJECT	CHANGE	CUMULATIVE NO PROJECT	CUMULATIVE + REDUCED PROJECT	CHANGE
Eight Mile Road	Lower Sacramento Rd. to Davis Rd.	67	67	0	70	70	0
	Lower Sacramento Rd. to West Ln.	68	68	0	71	72	+1
	West Ln. To Micke Grove/Holman Rd.	65	66	+1	71	71	0
West Lane	Eight Mile Rd. to Ham Ln.	65	65	0	69	69	0
	Morada Ln. to Eight Mile Rd.	67	68	+1	71	70	-1
	Morada Ln. to Knickerbocker Dr.	68	68	0	72	71	-1
Morada Lane	West of West Ln.	58	58	0	66	67	+1
	East of West Ln.	65	65	0	65	66	+1
State Route 99	Eight Mile Rd. to Armstrong Rd.	80	80	0	83	82	-1
	Eight Mile Rd. to Morada Ln.	81	81	0	83	83	0
	Morada Ln. to Hammer Ln.	80	80	0	84	84	0

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016 & 2017.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with a reduction in the overall project intensity/density while maintaining the approximate overall project footprint. For the purposes of discussion, this option considers a 20 percent reduction in the intensity/density of the project while maintaining the approximately 318.82-acre project footprint. Typical residential lots would increase from 5,000 to 6,000 sf to 6,000 to 7,400 sf. This alternative would result in up to 858 LDR units (with school) to 930 LDR units (without school) and up to 272 HDR units (with or without school), for a total of 1,130 units (with school) to 1,202 units (without school). The 10.5-acre commercial area in the northwest portion of the project site would be eliminated. This would eliminate a 70,000 square foot grocery store, 22,000 square feet of retail shops, a 3,500 square foot quick service restaurant, a 3,500 square foot convenience store with attached fueling facility, and a 2,500 square foot wine tasting room. This alternative would still establish a site for a 14.7-acre K-8school to be developed by the LUSD. However, if the LUSD decides against the elementary school siting, the area will instead include the development of single family residential units.

Table 3.11-13 shows the predicted traffic noise level increases on the local roadway network for existing and cumulative Project and no Project conditions for the Reduced Intensity/Density Alternative. Appendix C of the Noise Report (Appendix F of this EIR) provides the complete inputs and results of the FHWA traffic noise modeling.

As noted previously, some noise sensitive receptors located along the Project-area roadways are currently exposed to exterior traffic noise levels exceeding the City of Stockton 60 dB L_{dn} exterior noise level standard for residential uses, as shown in Table 3.11-13. As shown in Table 3.11-13, these receptors will continue to experience elevated exterior noise levels with implementation of the Reduced Intensity/Density Alternative. The Reduced Intensity/Density Alternative contribution to traffic noise increases is predicted to range between -1 dBA L_{dn} and +1 dBA L_{dn}. This will not exceed the City's substantial increase criteria of 3 dB. Therefore, impacts associated with traffic noise levels at existing receptors as a result of the Reduced Intensity/Density Alternative would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

TABLE 3.11-13: EXISTING APPROVED PROJECT AND CUMULATIVE TRAFFIC NOISE LEVELS (REDUCED INTENSITY/DENSITY ALTERNATIVE)

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, dB) AT NEAREST SENSITIVE RECEPTORS					
		EXISTING + APPROVED	EXISTING + APPROVED + REDUCED INTENSITY	CHANGE	CUMULATIVE NO PROJECT	CUMULATIVE + REDUCED INTENSITY	CHANGE
Eight Mile Road	Lower Sacramento Rd. to Davis Rd.	67	67	0	70	70	0
	Lower Sacramento Rd. to West Ln.	68	68	0	71	72	+1
	West Ln. To Micke Grove/Holman Rd.	65	66	+1	71	71	0
West Lane	Eight Mile Rd. to Ham Ln.	65	65	0	69	69	0
	Morada Ln. to Eight Mile Rd.	67	68	+1	71	70	0
	Morada Ln. to Knickerbocker Dr.	68	68	0	72	71	-1
Morada Lane	West of West Ln.	58	58	0	66	67	+1
	East of West Ln.	65	65	0	65	66	+1
State Route 99	Eight Mile Rd. to Armstrong Rd.	80	80	0	83	82	-1
	Eight Mile Rd. to Morada Ln.	81	81	0	83	83	0
	Morada Ln. to Hammer Ln.	80	80	0	84	84	0

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016.

Impact 3.11-2: The proposed Project has the potential to increase noise levels associated with construction activities. (Less than Significant with Mitigation)

Proposed Project:

During the construction of the Project, including roads, water and sewer lines and related infrastructure, noise from construction activities would add to the noise environment in the Project vicinity. Activities involved in construction would generate maximum noise levels, as indicated in Table 3.11-14, ranging from 76 to 90 dB at a distance of 50 feet. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

TABLE 3.11-14: CONSTRUCTION EQUIPMENT NOISE

TYPE OF EQUIPMENT	*MAXIMUM LEVEL, DB AT 50 FEET*
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Pneumatic Tools	85

SOURCE: ROADWAY CONSTRUCTION NOISE MODEL USER'S GUIDE. FEDERAL HIGHWAY ADMINISTRATION. FHWA-HEP-05-054. JANUARY 2006.

Noise would also be generated during the construction phase by increased truck traffic on area roadways associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

Construction activities would be temporary in nature and are exempt from noise regulation during the hours of 7:00 am to 7:00 pm as outlined in the City's General Plan Noise Element and Municipal Code. Implementation of the following mitigation measures will ensure that these potential impacts are reduced to a **less than significant** level.

MITIGATION MEASURES

Mitigation Measure 3.11-1: *Construction activities shall adhere to the requirements of the City of Stockton General Plan and Municipal Code with respect to hours of operation.*

Mitigation Measure 3.11-2: *All equipment shall be fitted with factory equipped mufflers, and in good working order.*

With Bridge Alternative

As noted above, under the With Bridge Alternative, the Project site would be developed with similar land use designations and circulation facilities as the proposed Project. However, unlike the proposed Project, this alternative would include construction of the bridge crossing over Bear Creek associated with what is shown on the Future Roadways Map as an extension of Marlette Road from the west through the Project site and ultimately traveling eastward through the Bear Creek South project to Holman Road.

During the construction of the alternative including roads, water and sewer lines, construction of the bridge and related infrastructure, noise from construction activities would add to the noise environment in the Project vicinity. Activities involved in construction would generate maximum noise levels, as indicated in Table 3.11-14, ranging from 76 to 90 dB at a distance of 50 feet. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

Noise would also be generated during the construction phase by increased truck traffic on area roadways associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

Construction activities would be temporary in nature and are exempt from noise regulation during the hours of 7:00 am to 7:00 pm as outlined in the City's General Plan Noise Element and Municipal Code. Implementation of the same mitigation measures as the proposed Project will ensure that these potential impacts are reduced to a **less than significant** level. Compared to the proposed Project, this alternative is equal relative to this topic.

No Build Alternative:

Development of the Project site would not occur under the No Build Alternative, and the Project site would remain in its current condition. The No Build Alternative would not result in additional construction activities. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the Project site would be developed with the same land use designations and circulation facilities as described in the City's General Plan 2035. This alternative would not require a General Plan amendment. The balance of the Project site would be developed as proposed under the proposed Project. Under this alternative, the high density residential area would be decreased from 11.7 acres under the proposed Project to 10.67 acres. Additionally, the commercial area would be decreased from 10.5 acres under the proposed Project to 9.0 acres. This alternative would not include dedication of an K-8 school site. This alternative would include construction of the bridge crossing over Bear Creek, which is currently reflected in

the Circulation Element of the General Plan 2035. The bridge crossing would change the trip distribution when compared to the proposed Project by providing an alternative access way to the south.

During the construction of the alternative including roads, water and sewer lines and related infrastructure, noise from construction activities would add to the noise environment in the Project vicinity. Activities involved in construction would generate maximum noise levels, as indicated in Table 3.11-14, ranging from 76 to 90 dB at a distance of 50 feet. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

Noise would also be generated during the construction phase by increased truck traffic on area roadways associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

Construction activities would be temporary in nature and are exempt from noise regulation during the hours of 7:00 am to 7:00 pm as outlined in the City's General Plan Noise Element and Municipal Code. Implementation of the same mitigation measures as the proposed Project will ensure that these potential impacts are reduced to a **less than significant** level. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, the Project site would be developed with the same components as the proposed Project, but the area utilized for the development would be reduced by approximately 33 percent. The total Project site would be reduced by approximately 106.2 acres, and the existing 15.57-acre industrial area would be eliminated from the Project site. This approximately 197.05-acre alternative would result in up to 715 LDR units (with school) to 805 LDR units (without school) and up to 226 HDR units (with or without school), for a total of 941 units (with school) to 1,031 units (without school). This would result in a reduction of 472 (with or without school) units when compared to the proposed Project. The 10.5-acre commercial area in the northwest portion of the Project site would be eliminated. This would eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for a 14.7-acre K-8 school to be developed by the LUSD. However, if the LUSD decides against the K-8 school siting, the area will instead include the development of single family residential units.

During the construction of the alternative including roads, water and sewer lines and related infrastructure, noise from construction activities would add to the noise environment in the Project vicinity. Activities involved in construction would generate maximum noise levels, as indicated in Table 3.11-14, ranging from 76 to 90 dB at a distance of 50 feet. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

Noise would also be generated during the construction phase by increased truck traffic on area roadways associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

Construction activities would be temporary in nature and are exempt from noise regulation during the hours of 7:00 am to 7:00 pm as outlined in the City's General Plan Noise Element and Municipal Code. Implementation of the same mitigation measures as the proposed Project will ensure that these potential impacts are reduced to a **less than significant** level. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with a reduction in the overall project intensity/density while maintaining the approximate overall project footprint. For the purposes of discussion, this option considers a 20 percent reduction in the intensity/density of the project while maintaining the approximately 318.82-acre project footprint. Typical residential lots would increase from 5,000 to 6,000 sf to 6,000 to 7,400 sf. This alternative would result in up to 858 LDR units (with school) to 930 LDR units (without school) and up to 272 HDR units (with or without school), for a total of 1,130 units (with school) to 1,202 units (without school). The 10.5-acre commercial area in the northwest portion of the project site would be eliminated. This would eliminate a 70,000 square foot grocery store, 22,000 square feet of retail shops, a 3,500 square foot quick service restaurant, a 3,500 square foot convenience store with attached fueling facility, and a 2,500 square foot wine tasting room. This alternative would still establish a site for a 14.7-acre K-8school to be developed by the LUSD. However, if the LUSD decides against the elementary school siting, the area will instead include the development of single family residential units.

During the construction of the alternative including roads, water and sewer lines and related infrastructure, noise from construction activities would add to the noise environment in the Project vicinity. Activities involved in construction would generate maximum noise levels, as indicated in Table 3.11-14, ranging from 76 to 90 dB at a distance of 50 feet. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

Noise would also be generated during the construction phase by increased truck traffic on area roadways associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

Construction activities would be temporary in nature and are exempt from noise regulation during the hours of 7:00 am to 7:00 pm as outlined in the City's General Plan Noise Element and Municipal Code. Implementation of the same mitigation measures as the proposed Project will

ensure that these potential impacts are reduced to a **less than significant** level. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.11-3: The proposed Project has the potential to increase vibration association with construction activities. (Less than Significant)

Proposed Project:

The primary vibration-generating activities associated with the proposed Project would occur during construction when activities such as grading, utilities placement, and parking lot construction occur. Sensitive receptors which could be impacted by construction related vibrations, especially vibratory compactors/rollers, are located approximately 100 feet or further from the Project area. At this distance, construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. Table 3.11-15 shows the typical vibration levels produced by construction equipment.

TABLE 3.11-15: VIBRATION LEVELS FOR VARYING CONSTRUCTION EQUIPMENT

TYPE OF EQUIPMENT	PEAK PARTICLE VELOCITY @ 25 FEET (INCHES/SECOND)	PEAK PARTICLE VELOCITY @ 100 FEET (INCHES/SECOND)
Large Bulldozer	0.089	0.011
Loaded Trucks	0.076	0.010
Small Bulldozer	0.003	0.000
Auger/drill Rigs	0.089	0.011
Jackhammer	0.035	0.004
Vibratory Hammer	0.070	0.009
Vibratory Compactor/roller	0.210	0.026

SOURCE: FEDERAL TRANSIT ADMINISTRATION, TRANSIT NOISE AND VIBRATION IMPACT ASSESSMENT GUIDELINES, MAY 2006

Table 3.11-15 data indicate that construction vibration levels anticipated for the Project are less than the 0.1 in/sec criteria at distances of 50 feet. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors. Implementation of the proposed Project would have a **less than significant** impact relative to this environmental topic.

With Bridge Alternative:

Under the With Bridge Alternative, the site would be developed similar to the Proposed Project Alternative, with the exception of construction of the bridge over Bear Creek.

As noted previously, construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above

the threshold of perception. Building damage can take the form of cosmetic or structural. Table 3.11-15 shows the typical vibration levels produced by construction equipment.

Table 3.11-15 data indicate that construction vibration levels anticipated for the With Bridge Alternative are less than the 0.1 in/sec criteria at distances of 50 feet. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors. Implementation of the With Bridge Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. The No Build Alternative would not result in additional construction activities. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses.

As noted previously, construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. Table 3.11-15 shows the typical vibration levels produced by construction equipment.

Table 3.11-15 data indicate that construction vibration levels anticipated for the General Plan 2035 Alternative are less than the 0.1 in/sec criteria at distances of 50 feet. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors. Implementation of the General Plan 2035 Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, the Project site would be developed with the same components as the proposed Project, but the area utilized for the development would be reduced by approximately 33 percent. The total Project site would be reduced by approximately 106.2 acres, and the existing 15.57-acre industrial area would be eliminated from the Project site. This approximately 197.05-acre alternative would result in up to 715 LDR units (with school) to 805 LDR units (without school) and up to 226 HDR units (with or without school), for a total of 941 units (with school) to 1,031 units (without school). This would result in a reduction of 472 (with or without school) units when compared to the proposed Project. The 10.5-acre commercial area in the northwest portion of the Project site would be eliminated. This would eliminate a 70,000-sf

grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for a 14.7-acre K-8 school to be developed by the LUSD. However, if the LUSD decides against the K-8 school siting, the area will instead include the development of single family residential units.

As noted previously, construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. Table 3.11-15 shows the typical vibration levels produced by construction equipment.

Table 3.11-15 data indicate that construction vibration levels anticipated for the Reduced Project Alternative are less than the 0.1 in/sec criteria at distances of 50 feet. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors. Implementation of the Reduced Project Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with a reduction in the overall project intensity/density while maintaining the approximate overall project footprint. For the purposes of discussion, this option considers a 20 percent reduction in the intensity/density of the project while maintaining the approximately 318.82-acre project footprint. Typical residential lots would increase from 5,000 to 6,000 sf to 6,000 to 7,400 sf. This alternative would result in up to 858 LDR units (with school) to 930 LDR units (without school) and up to 272 HDR units (with or without school), for a total of 1,130 units (with school) to 1,202 units (without school). The 10.5-acre commercial area in the northwest portion of the project site would be eliminated. This would eliminate a 70,000 square foot grocery store, 22,000 square feet of retail shops, a 3,500 square foot quick service restaurant, a 3,500 square foot convenience store with attached fueling facility, and a 2,500 square foot wine tasting room. This alternative would still establish a site for a 14.7-acre K-8school to be developed by the LUSD. However, if the LUSD decides against the elementary school siting, the area will instead include the development of single family residential units.

As noted previously, construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. Table 3.11-15 shows the typical vibration levels produced by construction equipment.

Table 3.11-15 data indicate that construction vibration levels anticipated for the Reduced Intensity/Density Alternative are less than the 0.1 in/sec criteria at distances of 50 feet. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors. Implementation of the Reduced Intensity/Density Alternative

would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.11-4: The proposed Project has the potential to expose new sensitive receptors to excessive traffic noise. (Less than Significant with Mitigation)

The FHWA traffic noise prediction model was used to predict Cumulative + Project traffic noise levels at the proposed residential land uses associated with the Project. Table 3.11-16 shows the predicted traffic noise levels at the proposed residential uses adjacent to the major Project-area arterial roadways. Table 3.11-16 also indicates the property line noise barrier heights required to achieve compliance with an exterior noise level standard of 60 dB L_{dn}.

TABLE 3.11-16: CUMULATIVE + PROJECT TRANSPORTATION NOISE LEVELS AT PROPOSED RESIDENTIAL USES

ROADWAY	RECEPTOR DESCRIPTION	APPROXIMATE RESIDENTIAL SETBACK, FEET[1]	ADT	PREDICTED TRAFFIC NOISE LEVELS, DB L_{DN}[2]			
				NO WALL	8' WALL	10' WALL	11' WALL
Eight Mile Road	Backyards	75	65,464	71	64	60	60
West Lane	Backyards	75	48,318	71	63	61	60

[1] *SETBACK DISTANCES ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS TO THE CENTER OF RESIDENTIAL BACKYARDS.*

[2] *THE MODELED NOISE BARRIERS ASSUME FLAT SITE CONDITIONS WHERE ROADWAY ELEVATIONS, BASE OF WALL ELEVATIONS, AND BUILDING PAD ELEVATIONS ARE APPROXIMATELY EQUIVALENT.*

Appendix C of the Noise Report (Appendix F of this EIR) provides the complete inputs and results to the FHWA traffic noise prediction model and barrier calculations. The modeled noise barriers assume flat site conditions where roadway elevations, base of wall elevations, and building pad elevations are approximately equivalent.

Table 3.11-16 data indicate that noise barriers 10-feet in height along Eight Mile Road and West Lane, which are adjacent to proposed residential uses, would be sufficient to achieve compliance with the City of Stockton 60 dB L_{dn} exterior noise level standard for the proposed residential uses.

Interior Noise Impacts:

Modern construction typically provides a 25 dB exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise of 70 dB L_{dn}, or less, will typically comply with the City of Stockton 45 dB L_{dn} interior noise level standard. Additional noise reduction measures, such as acoustically rated windows are generally required for exterior noise levels exceeding 70 dB L_{dn}.

It should be noted that exterior noise levels are typically 2 to 3 dB higher at second floor locations. Additionally, noise barriers do not reduce exterior noise levels at second floor locations. The proposed residential uses are predicted to be exposed to unmitigated first floor exterior transportation noise levels of approximately 71 dB L_{dn}. Therefore, second floor facades are predicted to be exposed to exterior noise levels of up to 74 dB L_{dn}.

Based upon a 25 dB exterior-to-interior noise level reduction, interior noise levels at second floors are predicted to be 49 dB L_{dn}. These interior noise levels would exceed with the City's 45 dB L_{dn} interior noise level standard. Therefore, additional interior noise control measures would be required. This analysis assumes that mechanical ventilation will be provided to allow residents to keep doors and windows closed, as desired for acoustical isolation.

With implementation of the following interior and exterior mitigation measures, the proposed Project would have a **less than significant** impact relative to this environmental topic.

MITIGATION MEASURES

Mitigation Measure 3.11-3: *Minimum 11-foot tall sound walls and/or landscaped berms should be constructed along Eight Mile Road and a 10-foot tall sound wall and/or landscaped berms along West Lane adjacent to proposed residential uses. Noise barrier walls should be constructed of concrete panels, concrete masonry units, earthen berms, or any combination of these materials. Wood is not recommended due to eventual warping and degradation of acoustical performance. Where high density residential occurs, site designs could allow for applying the exterior noise level standard at common outdoor areas, which are shielded from Eight Mile Road and West Lane*

Mitigation Measure 3.11-4: *Windows at first row of second floor facades facing Eight Mile Road and West Lane should have an STC rating of 35. A detailed analysis of any additional interior mitigation measures should be conducted when building plans are available. Mechanical ventilation shall be installed in all residential uses to allow residents to keep doors and windows closed, as desired for acoustical isolation.*

With Bridge Alternative:

The FHWA traffic noise prediction model was used to predict Cumulative + With Bridge traffic noise levels at the proposed residential land uses associated with the Project. Table 3.11-17 shows the predicted traffic noise levels at the proposed residential uses adjacent to the major Project-area arterial roadways. Table 3.11-17 also indicates the property line noise barrier heights required to achieve compliance with an exterior noise level standard of 60 dB L_{dn}.

TABLE 3.11-17: CUMULATIVE WITH BRIDGE TRANSPORTATION NOISE LEVELS AT PROPOSED RESIDENTIAL USES

ROADWAY	RECEPTOR DESCRIPTION	APPROXIMATE RESIDENTIAL SETBACK, FEET[1]	ADT	PREDICTED TRAFFIC NOISE LEVELS, DB L_{DN}[2]			
				NO WALL	8' WALL	10' WALL	11' WALL
Eight Mile Road	Backyards	75	65,464	71	63	62	60
West Lane	Backyards	75	48,318	71	63	61	60

[1] SETBACK DISTANCES ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS TO THE CENTER OF RESIDENTIAL BACKYARDS.

[2] THE MODELED NOISE BARRIERS ASSUME FLAT SITE CONDITIONS WHERE ROADWAY ELEVATIONS, BASE OF WALL ELEVATIONS, AND BUILDING PAD ELEVATIONS ARE APPROXIMATELY EQUIVALENT.

Appendix C of the Noise Report (Appendix F of this EIR) provides the complete inputs and results to the FHWA traffic noise prediction model and barrier calculations. The modeled noise barriers

assume flat site conditions where roadway elevations, base of wall elevations, and building pad elevations are approximately equivalent.

Table 3.11-16 data indicate that noise barriers 10-feet in height along Eight Mile Road and West Lane, which are adjacent to proposed residential uses, would be sufficient to achieve compliance with the City of Stockton 60 dB L_{dn} exterior noise level standard for the proposed residential uses.

Interior Noise Impacts:

Modern construction typically provides a 25 dB exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise of 70 dB L_{dn}, or less, will typically comply with the City of Stockton 45 dB L_{dn} interior noise level standard. Additional noise reduction measures, such as acoustically rated windows are generally required for exterior noise levels exceeding 70 dB L_{dn}.

It should be noted that exterior noise levels are typically 2 to 3 dB higher at second floor locations. Additionally, noise barriers do not reduce exterior noise levels at second floor locations. The proposed residential uses are predicted to be exposed to unmitigated first floor exterior transportation noise levels of approximately 71 dB L_{dn}. Therefore, second floor facades are predicted to be exposed to exterior noise levels of up to 74 dB L_{dn}.

Based upon a 25 dB exterior-to-interior noise level reduction, interior noise levels at second floors are predicted to be 49 dB L_{dn}. These interior noise levels would exceed with the City's 45 dB L_{dn} interior noise level standard. Therefore, additional interior noise control measures would be required. This analysis assumes that mechanical ventilation will be provided to allow residents to keep doors and windows closed, as desired for acoustical isolation.

With implementation of the following interior and exterior mitigation measures, the proposed Project would have a **less than significant** impact relative to this environmental topic.

Implementation of the same interior and exterior mitigation measures as the proposed Project would be required for the With Bridge Alternative. With implementation of these mitigation measure, the General Plan 2035 Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is inferior relative to this topic.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. The No Build Alternative would result in the Project site remaining vacant and would not introduce new sensitive receptors to the Project site. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmental superior relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses.

The FHWA traffic noise prediction model was used to predict Cumulative + General Plan 2035 Alternative traffic noise levels at the proposed residential land uses associated with the alternative. Table 3.11-18 shows the predicted traffic noise levels at the proposed residential uses adjacent to the major Project-area arterial roadways. Table 3.11-18 also indicates the property line noise barrier heights required to achieve compliance with an exterior noise level standard of 60 dB L_{dn}.

TABLE 3.11-18: CUMULATIVE + GENERAL PLAN 2035 ALTERNATIVE TRANSPORTATION NOISE LEVELS AT RESIDENTIAL USES

ROADWAY	RECEPTOR DESCRIPTION	APPROXIMATE RESIDENTIAL SETBACK, FEET[1]	ADT	PREDICTED TRAFFIC NOISE LEVELS, DB L_{DN}[2]			
				NO WALL	8' WALL	10' WALL	11' WALL
Eight Mile Road	Backyards	75	61,164	71	63	61	60
West Lane	Backyards	75	47,000	71	62	60	60

[1] SETBACK DISTANCES ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS TO THE CENTER OF RESIDENTIAL BACKYARDS.

[2] THE MODELED NOISE BARRIERS ASSUME FLAT SITE CONDITIONS WHERE ROADWAY ELEVATIONS, BASE OF WALL ELEVATIONS, AND BUILDING PAD ELEVATIONS ARE APPROXIMATELY EQUIVALENT.

Table 3.11-18 data indicate that noise barriers 11-feet in height along Eight Mile Road and 10-feet in height along West Lane, which are adjacent to proposed residential uses would be sufficient to achieve compliance with the City of Stockton 60 dB L_{dn} exterior noise level standard for the proposed residential uses.

Interior Noise Impacts:

Modern construction typically provides a 25 dB exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise of 70 dB L_{dn}, or less, will typically comply with the City of Stockton 45 dB L_{dn} interior noise level standard. Additional noise reduction measures, such as acoustically rated windows are generally required for exterior noise levels exceeding 70 dB L_{dn}.

It should be noted that exterior noise levels are typically 2 to 3 dB higher at second floor locations. Additionally, noise barriers do not reduce exterior noise levels at second floor locations. The proposed residential uses are predicted to be exposed to unmitigated first floor exterior transportation noise levels of approximately 71 dB L_{dn}. Therefore, second floor facades are predicted to be exposed to exterior noise levels of up to 74 dB L_{dn}.

Based upon a 25 dB exterior-to-interior noise level reduction, interior noise levels at second floors are predicted to be 49 dB L_{dn}. These interior noise levels would exceed with the City's 45 dB L_{dn} interior noise level standard. Therefore, additional interior noise control measures would be

required. This analysis assumes that mechanical ventilation will be provided to allow residents to keep doors and windows closed, as desired for acoustical isolation.

Implementation of the same interior and exterior mitigation measures as the proposed Project would be required for the General Plan 2035 Alternative. However, the sound walls along Eight Mile Road would be increased from 10 feet under the proposed Project to 11 feet under the General Plan 2035 Alternative. With implementation of these mitigation measure, the General Plan 2035 Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is inferior relative to this topic.

Reduced Project Alternative:

The FHWA traffic noise prediction model was used to predict Cumulative + Reduced Project Alternative traffic noise levels at the proposed residential land uses associated with the alternative. Table 3.11-19 shows the predicted traffic noise levels at the proposed residential uses adjacent to the major Project-area arterial roadways. Table 3.11-19 also indicates the property line noise barrier heights required to achieve compliance with an exterior noise level standard of 60 dB L_{dn}.

TABLE 3.11-19: CUMULATIVE + REDUCED PROJECT ALTERNATIVE TRANSPORTATION NOISE LEVELS AT RESIDENTIAL USES

ROADWAY	RECEPTOR DESCRIPTION	APPROXIMATE RESIDENTIAL SETBACK, FEET[1]	ADT	PREDICTED TRAFFIC NOISE LEVELS, DB L_{DN}[2]			
				NO WALL	8' WALL	10' WALL	11' WALL
Eight Mile Road	Backyards	75	61,042	71	63	61	60
West Lane	Backyards	75	43,564	70	62	60	59

[1] SETBACK DISTANCES ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS TO THE CENTER OF RESIDENTIAL BACKYARDS.

[2] THE MODELED NOISE BARRIERS ASSUME FLAT SITE CONDITIONS WHERE ROADWAY ELEVATIONS, BASE OF WALL ELEVATIONS, AND BUILDING PAD ELEVATIONS ARE APPROXIMATELY EQUIVALENT.

Table 3.11-19data indicate that noise barriers 11-feet in height along Eight Mile Road and 10-feet in height along West Lane, which are adjacent to proposed residential uses would be sufficient to achieve compliance with the City of Stockton 60 dB L_{dn} exterior noise level standard for the proposed residential uses.

Interior Noise Impacts:

Modern construction typically provides a 25 dB exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise of 70 dB L_{dn}, or less, will typically comply with the City of Stockton 45 dB L_{dn} interior noise level standard. Additional noise reduction measures, such as acoustically rated windows are generally required for exterior noise levels exceeding 70 dB L_{dn}.

It should be noted that exterior noise levels are typically 2 to 3 dB higher at second floor locations. Additionally, noise barriers do not reduce exterior noise levels at second floor locations. The

proposed residential uses are predicted to be exposed to unmitigated first floor exterior transportation noise levels of approximately 71 dB L_{dn}. Therefore, second floor facades are predicted to be exposed to exterior noise levels of up to 74 dB L_{dn}.

Based upon a 25 dB exterior-to-interior noise level reduction, interior noise levels at second floors are predicted to be 49 dB L_{dn}. These interior noise levels would exceed with the City's 45 dB L_{dn} interior noise level standard. Therefore, additional interior noise control measures would be required. This analysis assumes that mechanical ventilation will be provided to allow residents to keep doors and windows closed, as desired for acoustical isolation.

Implementation of the same interior and exterior mitigation measures as the proposed Project would be required for the Reduced Project Alternative. However, the sound walls along Eight Mile Road would be increased from 10 feet under the proposed Project to 11 feet under the Reduced Project Alternative. With implementation of these mitigation measure, the Reduced Project Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is inferior relative to this topic.

Reduced Intensity/Density Alternative:

The FHWA traffic noise prediction model was used to predict Cumulative + Reduced Intensity/Density Alternative traffic noise levels at the proposed residential land uses associated with the alternative. Table 3.11-20 shows the predicted traffic noise levels at the proposed residential uses adjacent to the major Project-area arterial roadways. Table 3.11-20 also indicates the property line noise barrier heights required to achieve compliance with an exterior noise level standard of 60 dB L_{dn}.

TABLE 3.11-20: CUMULATIVE + REDUCED INTENSITY/DENSITY ALTERNATIVE TRANSPORTATION NOISE LEVELS AT RESIDENTIAL USES

ROADWAY	RECEPTOR DESCRIPTION	APPROXIMATE RESIDENTIAL SETBACK, FEET[1]	ADT	PREDICTED TRAFFIC NOISE LEVELS, DB L_{DN}[2]			
				NO WALL	8' WALL	10' WALL	11' WALL
Eight Mile Road	Backyards	75	61,448	71	63	61	60
West Lane	Backyards	75	44,032	70	62	60	59

[1] SETBACK DISTANCES ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS TO THE CENTER OF RESIDENTIAL BACKYARDS.

[2] THE MODELED NOISE BARRIERS ASSUME FLAT SITE CONDITIONS WHERE ROADWAY ELEVATIONS, BASE OF WALL ELEVATIONS, AND BUILDING PAD ELEVATIONS ARE APPROXIMATELY EQUIVALENT.

Table 3.11-20 data indicate that noise barriers 11-feet in height along Eight Mile Road and 10-feet in height along West Lane, which are adjacent to proposed residential uses would be sufficient to achieve compliance with the City of Stockton 60 dB L_{dn} exterior noise level standard for the proposed residential uses.

Interior Noise Impacts:

Modern construction typically provides a 25 dB exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise of 70 dB L_{dn}, or less, will typically comply with the City of Stockton 45 dB L_{dn} interior noise level standard. Additional noise reduction measures, such as acoustically rated windows are generally required for exterior noise levels exceeding 70 dB L_{dn}.

It should be noted that exterior noise levels are typically 2-3 dB higher at second floor locations. Additionally, noise barriers do not reduce exterior noise levels at second floor locations. The proposed residential uses are predicted to be exposed to unmitigated first floor exterior transportation noise levels of approximately 71 dB L_{dn}. Therefore, second floor facades are predicted to be exposed to exterior noise levels of up to 74 dB L_{dn}.

Based upon a 25 dB exterior-to-interior noise level reduction, interior noise levels at second floors are predicted to be 49 dB L_{dn}. These interior noise levels would exceed with the City's 45 dB L_{dn} interior noise level standard. Therefore, additional interior noise control measures would be required. This analysis assumes that mechanical ventilation will be provided to allow residents to keep doors and windows closed, as desired for acoustical isolation.

Implementation of the same interior and exterior mitigation measures as the proposed Project would be required for the Reduced Intensity/Density Alternative. However, the sound walls along Eight Mile Road would be increased from 10 feet under the proposed Project to 11 feet under the Reduced Intensity/Density Alternative. With implementation of these mitigation measure, the Reduced Intensity/Density Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is inferior relative to this topic.

Impact 3.11-5: The proposed Project has the potential to expose sensitive receptors to substantial noise from proposed park or school uses. (Less than Significant)

Proposed Project:

Children playing at neighborhood parks or outdoor recreational fields (softball, soccer, basketball, tennis) are often considered potentially significant noise sources which could adversely affect adjacent noise-sensitive land uses. Typical noise levels associated with groups of approximately 50 children playing at a distance of 50 feet generally range from 55 to 60 dB L_{eq} and 70 to 75 dB L_{max}. It is expected that park activities would occur during daytime hours. The City of Stockton Municipal Code exempts outdoor play areas from parks, provided that they occur between the hours of 7:00 am. and 10:00 pm

Therefore, this would be considered a **less than significant** impact.

With Bridge Alternative:

Children playing at neighborhood parks or outdoor recreational fields (softball, soccer, basketball, tennis) are often considered potentially significant noise sources which could adversely affect adjacent noise-sensitive land uses. Typical noise levels associated with groups of approximately 50 children playing at a distance of 50 feet generally range from 55 to 60 dB L_{eq} and 70 to 75 dB L_{max}. It is expected that park activities would occur during daytime hours. The City of Stockton Municipal Code exempts outdoor play areas from parks, provided that they occur between the hours of 7:00 am. and 10:00 pm

Therefore, this would be considered a **less than significant** impact.

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. The No Build Alternative would not result in park activities on the site. Therefore, park noise would not occur. As such, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses.

The General Plan 2035 Alternative would include park space to serve the community and surrounding area. Similar to the proposed Project, typical noise levels associated with groups of approximately 50 children playing at a distance of 50 feet generally range from 55 to 60 dB L_{eq} and 70 to 75 dB L_{max}. It is expected that park activities would occur during daytime hours. The City of Stockton Municipal Code exempts outdoor play areas from parks, provided that they occur between the hours of 7:00 am. and 10:00 pm

Under this alternative, impacts would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, the Project site would be developed with the same components as the proposed Project, but the area utilized for the development would be reduced by approximately 33 percent. The total Project site would be reduced by approximately 106.2 acres, and the existing 15.57-acre industrial area would be eliminated from the Project site. This approximately 197.05-acre alternative would result in up to 715 LDR units (with school) to 805 LDR units (without school) and up to 226 HDR units (with or without school), for a total of 941 units (with school) to 1,031 units (without school). This would result in a reduction of 472 (with or without school) units when compared to the proposed Project. The 10.5-acre commercial area in the northwest portion of the Project site would be eliminated. This would eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience

store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for a 14.7-acre K-8 school to be developed by the LUSD. However, if the LUSD decides against the K-8 school siting, the area will instead include the development of single family residential units.

Similar to the proposed Project, typical noise levels associated with groups of approximately 50 children playing at a distance of 50 feet generally range from 55 to 60 dB L_{eq} and 70 to 75 dB L_{max}. It is expected that park activities would occur during daytime hours. The City of Stockton Municipal Code exempts outdoor play areas from parks, provided that they occur between the hours of 7:00 am. and 10:00 pm

Under this alternative, impacts would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with a reduction in the overall project intensity/density while maintaining the approximate overall project footprint. For the purposes of discussion, this option considers a 20 percent reduction in the intensity/density of the project while maintaining the approximately 318.82-acre project footprint. Typical residential lots would increase from 5,000 to 6,000 sf to 6,000 to 7,400 sf. This alternative would result in up to 858 LDR units (with school) to 930 LDR units (without school) and up to 272 HDR units (with or without school), for a total of 1,130 units (with school) to 1,202 units (without school). The 10.5-acre commercial area in the northwest portion of the project site would be eliminated. This would eliminate a 70,000 square foot grocery store, 22,000 square feet of retail shops, a 3,500 square foot quick service restaurant, a 3,500 square foot convenience store with attached fueling facility, and a 2,500 square foot wine tasting room. This alternative would still establish a site for a 14.7-acre K-8school to be developed by the LUSD. However, if the LUSD decides against the elementary school siting, the area will instead include the development of single family residential units.

Therefore, play areas may be included with the school site. Similar to the proposed Project, typical noise levels associated with groups of approximately 50 children playing at a distance of 50 feet generally range from 55 to 60 dB L_{eq} and 70 to 75 dB L_{max}. It is expected that park activities would occur during daytime hours. The City of Stockton Municipal Code exempts outdoor play areas from parks, provided that they occur between the hours of 7:00 am. and 10:00 pm

Under this alternative, impacts would be **less than significant**. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.11-6: The proposed Project has the potential to expose new sensitive receptors to excessive railroad noise. (Less than Significant with Mitigation)

Proposed Project:

The following discussion is based upon noise level measurements of train operations conducted along the UPRR track adjacent to the east side of the Project site. The results indicate that the railroad activity resulted in an overall noise level of 80 dB L_{dn} at a distance of 90 feet from the track centerline.

Proposed residential land uses located adjacent to the UPRR line are predicted to be impacted by railroad noise. UPRR train activity is predicted to exceed the City of Stockton lower level 60 dB L_{dn} and upper level 65 dB L_{dn} exterior noise level standard applicable to residential uses and is, therefore, considered significant according to the Project's Significance Criteria.

A barrier analysis was conducted to determine the appropriate barrier heights and setbacks required to reduce railroad noise levels within compliance with the City of Stockton exterior noise level criteria. Table 3.11-21 shows the results of the barrier analysis.

TABLE 3.11-21: MITIGATED RAILROAD NOISE LEVELS

SOURCE HEIGHT	RECEPTOR DESCRIPTION	APPROXIMATE RESIDENTIAL SETBACK, FEET[1]	PREDICTED TRAFFIC NOISE LEVELS, DB L_{DN}			
			NO WALL	10' WALL	12' WALL	14' WALL
17-feet relative to the Project site. This assumes the tracks are 7-feet above the Project site.	Backyards	100	80	73	70	68
	Backyards	200	75	66	64	62
	Backyards	300	70	61	59	57

[1] SETBACK DISTANCES ARE MEASURED IN FEET FROM THE CENTERLINES OF THE RAILROAD TRACK TO THE CENTER OF RESIDENTIAL BACKYARDS.

Based upon Table 3.11-21, it is not practical to achieve the lower limit noise level standard of 60 dB L_{dn} with setbacks of up to 200 feet. With a setback of 200 feet, the upper limit of 65 dB L_{dn} can be achieved with a 12-foot tall wall/barrier (relative to the building pad elevation). With a setback of 300 feet, the lower limit of 60 dB L_{dn} can be achieved with a 12-foot tall wall/barrier (relative to the building pad elevation).

Interior Noise Impacts:

Modern construction typically provides a 25 dB exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise of 70 dB L_{dn}, or less, will typically comply with the City of Stockton 45 dB L_{dn} interior noise level standard. Additional noise reduction measures, such as acoustically rated windows are generally required for exterior noise levels exceeding 70 dB L_{dn}.

It should be noted that exterior noise levels are typically 2 to 3 dB higher at second floor locations. Additionally, noise barriers do not reduce exterior noise levels at second floor locations. The

proposed residential uses adjacent to the UPRR tracks will have mitigation at first floor rooms to achieve a minimum exterior noise level of 65 dB L_{dn}. Therefore, first floor receivers will comply with the interior noise levels of 45 dB L_{dn}. Depending on setbacks, the second floor facades are predicted to be exposed to exterior noise levels of up to ranging from 83 dB L_{dn} to 73 dB L_{dn}.

Based upon a 25 dB exterior-to-interior noise level reduction, interior noise levels at second floors are predicted to range between 58 dB L_{dn} and 48 dB L_{dn}. These interior noise levels would exceed with the City's 45 dB L_{dn} interior noise level standard. Therefore, additional interior noise control measures would be required. This analysis assumes that mechanical ventilation will be provided to allow residents to keep doors and windows closed, as desired for acoustical isolation.

With implementation of the following interior and exterior mitigation measures, the proposed Project would have a **less than significant** impact relative to this environmental topic.

MITIGATION MEASURES

Mitigation Measure 3.11-5: *It is recommended that the Project site include proper setbacks and barriers to achieve a minimum exterior noise level of 65 dB L_{dn} at the backyards of the first row of residences facing the UPRR track. Noise barrier walls should be constructed of concrete panels, concrete masonry units, earthen berms, or any combination of these materials. Wood is not recommended due to eventual warping and degradation of acoustical performance.*

Mitigation Measure 3.11-6: *A detailed analysis of interior mitigation measures should be conducted when building plans are available. The analysis should be conducted for all residences up to a distance of 285-feet from the railroad track centerline (Location of the 70 dB Ldn contour). Mechanical ventilation shall be installed in all residential uses to allow residents to keep doors and windows closed, as desired for acoustical isolation.*

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not introduce new sensitive receptors to the site. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

The following discussion is based upon noise level measurements of train operations conducted along the UPRR track adjacent to the east side of the Project site. The results indicate that the railroad activity resulted in an overall noise level of 80 dB L_{dn} at a distance of 90 feet from the track centerline.

Proposed residential land uses located adjacent to the UPRR line are predicted to be impacted by railroad noise. UPRR train activity is predicted to exceed the City of Stockton lower level 60 dB L_{dn}

and upper level 65 dB L_{dn} exterior noise level standard applicable to residential uses and is, therefore, considered significant according to the Project's Significance Criteria.

Based upon Table 3.11-21, it is not practical to achieve the lower limit noise level standard of 60 dB L_{dn} with setbacks of up to 200 feet. With a setback of 200 feet, the upper limit of 65 dB L_{dn} can be achieved with a 12-foot tall wall/barrier (relative to the building pad elevation). With a setback of 300 feet, the lower limit of 60 dB L_{dn} can be achieved with a 12-foot tall wall/barrier (relative to the building pad elevation).

Interior Noise Impacts:

Modern construction typically provides a 25 dB exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise of 70 dB L_{dn}, or less, will typically comply with the City of Stockton 45 dB L_{dn} interior noise level standard. Additional noise reduction measures, such as acoustically rated windows are generally required for exterior noise levels exceeding 70 dB L_{dn}.

It should be noted that exterior noise levels are typically 2 to 3 dB higher at second floor locations. Additionally, noise barriers do not reduce exterior noise levels at second floor locations. The proposed residential uses adjacent to the UPRR tracks will have mitigation at first floor rooms to achieve a minimum exterior noise level of 65 dB L_{dn}. Therefore, first floor receivers will comply with the interior noise levels of 45 dB L_{dn}. Depending on setbacks, the second floor facades are predicted to be exposed to exterior noise levels of up to ranging from 83 dB L_{dn} to 73 dB L_{dn}.

Based upon a 25 dB exterior-to-interior noise level reduction, interior noise levels at second floors are predicted to range between 58 dB L_{dn} and 48 dB L_{dn}. These interior noise levels would exceed with the City's 45 dB L_{dn} interior noise level standard. Therefore, additional interior noise control measures would be required. This analysis assumes that mechanical ventilation will be provided to allow residents to keep doors and windows closed, as desired for acoustical isolation.

With implementation of the previously mentioned interior and exterior mitigation measures, the With Bridge Alternative would have a **less than significant** impact relative to this environmental topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses. Similar to the proposed Project, the General Plan 2035 Alternative would likely place residential uses adjacent to the UPRR tracks. Based upon noise level measurements conducted noise level measurements of train operations along the UPRR track adjacent to the east side of the Project site. The results indicated that the railroad activity resulted in an overall noise level of 80 dB L_{dn}, at a distance of 90 feet from the track centerline.

Proposed residential land uses located adjacent to the UPRR line are predicted to be impacted by railroad noise. UPRR train activity is predicted to exceed the City of Stockton lower level 60 dB L_{dn}

and upper level 65 dB L_{dn} exterior noise level standard applicable to residential uses and is therefore considered significant according to the Project's Significance Criteria.

A barrier analysis was conducted to determine the appropriate barrier heights and setbacks required to reduce railroad noise levels within compliance with the City of Stockton exterior noise level criteria. Table 3.11-21 shows the results of the barrier analysis.

Based upon Table 3.11-21, it is not practical to achieve the lower limit noise level standard of 60 dB L_{dn} with setbacks of up to 200 feet. With a setback of 200 feet, the upper limit of 65 dB L_{dn} can be achieved with a 12-foot tall wall (relative to the building pad elevation). With a setback of 300 feet, the lower limit of 60 dB L_{dn} can be achieved with a 12-foot tall wall/barrier (relative to the building pad elevation).

Interior Noise Impacts:

Modern construction typically provides a 25 dB exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise of 70 dB L_{dn}, or less, will typically comply with the City of Stockton 45 dB L_{dn} interior noise level standard. Additional noise reduction measures, such as acoustically rated windows are generally required for exterior noise levels exceeding 70 dB L_{dn}.

It should be noted that exterior noise levels are typically 2 to 3 dB higher at second floor locations. Additionally, noise barriers do not reduce exterior noise levels at second floor locations. The proposed residential uses adjacent to the UPRR tracks will have mitigation at first floor rooms to achieve a minimum exterior noise level of 65 dB L_{dn}. Therefore, first floor receivers will comply with the interior noise levels of 45 dB L_{dn}. Depending on setbacks, the second floor facades are predicted to be exposed to exterior noise levels of up to ranging from 83 dB L_{dn} to 73 dB L_{dn}.

Based upon a 25 dB exterior-to-interior noise level reduction, interior noise levels at second floors are predicted to range between 58 dB L_{dn} and 48 dB L_{dn}. These interior noise levels would exceed with the City's 45 dB L_{dn} interior noise level standard. Therefore, similar to the proposed Project, additional interior noise control measures would be required. This analysis assumes that mechanical ventilation will be provided to allow residents to keep doors and windows closed, as desired for acoustical isolation.

With implementation of the same interior and exterior mitigation measures as the proposed Project, the General Plan 2035 Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Proposed residential land uses located adjacent to the UPRR line are predicted to be impacted by railroad noise. UPRR train activity is predicted to exceed the City of Stockton lower level 60 dB L_{dn}

and upper level 65 dB L_{dn} exterior noise level standard applicable to residential uses and is therefore considered significant according to the Project's Significance Criteria.

A barrier analysis was conducted to determine the appropriate barrier heights and setbacks required to reduce railroad noise levels within compliance with the City of Stockton exterior noise level criteria. Table 3.11-21 shows the results of the barrier analysis.

Based upon Table 3.11-21, it is not practical to achieve the lower limit noise level standard of 60 dB L_{dn} with setbacks of up to 200 feet. With a setback of 200 feet, the upper limit of 65 dB L_{dn} can be achieved with a 12-foot tall wall (relative to the building pad elevation). With a setback of 300 feet, the lower limit of 60 dB L_{dn} can be achieved with a 12-foot tall wall/barrier (relative to the building pad elevation).

Interior Noise Impacts:

Modern construction typically provides a 25 dB exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise of 70 dB L_{dn}, or less, will typically comply with the City of Stockton 45 dB L_{dn} interior noise level standard. Additional noise reduction measures, such as acoustically rated windows are generally required for exterior noise levels exceeding 70 dB L_{dn}.

It should be noted that exterior noise levels are typically 2 to 3 dB higher at second floor locations. Additionally, noise barriers do not reduce exterior noise levels at second floor locations. The proposed residential uses adjacent to the UPRR tracks will have mitigation at first floor rooms to achieve a minimum exterior noise level of 65 dB L_{dn}. Therefore, first floor receivers will comply with the interior noise levels of 45 dB L_{dn}. Depending on setbacks, the second floor facades are predicted to be exposed to exterior noise levels of up to ranging from 83 dB L_{dn} to 73 dB L_{dn}.

Based upon a 25 dB exterior-to-interior noise level reduction, interior noise levels at second floors are predicted to range between 58 dB L_{dn} and 48 dB L_{dn}. These interior noise levels would exceed with the City's 45 dB L_{dn} interior noise level standard. Therefore, similar to the proposed Project, additional interior noise control measures would be required. This analysis assumes that mechanical ventilation will be provided to allow residents to keep doors and windows closed, as desired for acoustical isolation.

With implementation of the same interior and exterior mitigation measures as the proposed Project, the Reduced Project Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Similar to the proposed Project, the Reduced Intensity/Density Alternative would likely place residential uses adjacent to the UPRR tracks. Based upon noise level measurements conducted noise level measurements of train operations along the UPRR track adjacent to the east side of the

Project site. The results indicated that the railroad activity resulted in an overall noise level of 80 dB L_{dn}, at a distance of 90 feet from the track centerline.

Proposed residential land uses located adjacent to the UPRR line are predicted to be impacted by railroad noise. UPRR train activity is predicted to exceed the City of Stockton lower level 60 dB L_{dn} and upper level 65 dB L_{dn} exterior noise level standard applicable to residential uses and is therefore considered significant according to the Project's Significance Criteria.

A barrier analysis was conducted to determine the appropriate barrier heights and setbacks required to reduce railroad noise levels within compliance with the City of Stockton exterior noise level criteria. Table 3.11-21 shows the results of the barrier analysis.

Based upon Table 3.11-21, it is not practical to achieve the lower limit noise level standard of 60 dB L_{dn} with setbacks of up to 200 feet. With a setback of 200 feet, the upper limit of 65 dB L_{dn} can be achieved with a 12-foot tall wall (relative to the building pad elevation). With a setback of 300 feet, the lower limit of 60 dB L_{dn} can be achieved with a 12-foot tall wall/barrier (relative to the building pad elevation).

Interior Noise Impacts:

Modern construction typically provides a 25 dB exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise of 70 dB L_{dn}, or less, will typically comply with the City of Stockton 45 dB L_{dn} interior noise level standard. Additional noise reduction measures, such as acoustically rated windows are generally required for exterior noise levels exceeding 70 dB L_{dn}.

It should be noted that exterior noise levels are typically 2 to 3 dB higher at second floor locations. Additionally, noise barriers do not reduce exterior noise levels at second floor locations. The proposed residential uses adjacent to the UPRR tracks will have mitigation at first floor rooms to achieve a minimum exterior noise level of 65 dB L_{dn}. Therefore, similar to the proposed Project, first floor receivers will comply with the interior noise levels of 45 dB L_{dn}. Depending on setbacks, the second floor facades are predicted to be exposed to exterior noise levels of up to ranging from 83 dB L_{dn} to 73 dB L_{dn}.

Based upon a 25 dB exterior-to-interior noise level reduction, interior noise levels at second floors are predicted to range between 58 dB L_{dn} and 48 dB L_{dn}. These interior noise levels would exceed with the City's 45 dB L_{dn} interior noise level standard. Therefore, additional interior noise control measures would be required. This analysis assumes that mechanical ventilation will be provided to allow residents to keep doors and windows closed, as desired for acoustical isolation.

With implementation of the same interior and exterior mitigation measures as the proposed Project, the Reduced Intensity/Density Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.11-7: The proposed Project has the potential to expose new sensitive receptors to existing industrial noise levels. (Less than Significant with Mitigation)

Proposed Project:

Pacific Bell and Bragg Investment Company are located within the boundaries of the site at the north-central portion of the site. To quantify existing industrial noise levels in the vicinity of the Project site, j.c. brennan & associates, Inc. staff conducted short-term noise level measurements at three locations on the adjacent industrial land uses. Noise levels were generally in the range of 60 dB L_{eq} at a distance of 100 feet. Noise levels associated with the operations included heavy equipment moving about the site and idling equipment. The operations occur primarily during the daytime periods. However, the noise levels exceed the daytime noise level standards of 55 dBA L_{eq}. With implementation of the same following mitigation measure, the proposed Project would have a **less than significant** impact relative to this environmental topic.

MITIGATION MEASURES

Mitigation Measure 3.11-7: *Residential uses shall maintain a 100-foot setback from the industrial property lines, and a barrier 8-feet in height shall be constructed to reduce noise levels to less than 55 dBA L_{eq}, and break line-of-sight to the noise sources.*

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not introduce new sensitive receptors to the site. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Under the With Bridge Alternative, the Project site would include residential uses adjacent to the existing industrial uses. Noise levels associated with the operations included heavy equipment moving about the site and idling equipment. The operations occur primarily during the daytime periods. However, similar to the proposed Project, the noise levels exceed the daytime noise level standards of 55 dBA L_{eq}. With implementation of the same mitigation measure as the proposed Project, the With Bridge Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the Project site would include residential uses adjacent to the existing industrial uses. Noise levels associated with the operations included heavy

equipment moving about the site and idling equipment. The operations occur primarily during the daytime periods. However, similar to the proposed Project, the noise levels exceed the daytime noise level standards of 55 dBA L_{eq}. With implementation of the same mitigation measure as the proposed Project, the General Plan 2035 Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, the Project site would include residential uses adjacent to the existing industrial uses. Noise levels associated with the operations included heavy equipment moving about the site and idling equipment. The operations occur primarily during the daytime periods. However, similar to the proposed Project, the noise levels exceed the daytime noise level standards of 55 dBA L_{eq}. With implementation of the same mitigation measure as the proposed Project, the Reduced Project Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would include residential uses adjacent to the existing industrial uses. Noise levels associated with the operations included heavy equipment moving about the site and idling equipment. The operations occur primarily during the daytime periods. However, similar to the proposed Project, the noise levels exceed the daytime noise level standards of 55 dBA L_{eq}. With implementation of the same mitigation measure as the proposed Project, the Reduced Intensity/Density Alternative would have a **less than significant** impact relative to this environmental topic. Compared to the proposed Project, this alternative is equal relative to this topic.

Impact 3.11-8: The proposed Project has the potential to expose new sensitive receptors to commercial development noise levels. (Less than Significant with Mitigation)

Proposed Project:

Commercial land use activities can produce noise which may affect adjacent sensitive land uses. These noise sources can be continuous and may contain tonal components which may be annoying to individuals who live in the nearby vicinity. In addition, noise generation from fixed noise sources may vary based upon climatic conditions, time of day and existing ambient noise levels. The Project includes commercial land uses in the northwest quadrant of the Project site. The primary noise sources generally include truck deliveries, loading dock operations, trash pickup, parking lot use, and heating, air conditioning and ventilation (HVAC) equipment.

The proposed commercial land use is adjacent to the proposed residential uses. Loading dock noise levels generally range between 50 dBA L_{eq} and 60 dBA L_{eq}, at a distance of 100 feet. The primary noise sources include truck arrivals and departures, and unloading of products.

HVAC equipment can also be a primary noise source associated with commercial or retail uses. These types of equipment are often mounted on roof tops, located on the ground or located within mechanical rooms. The noise sources can take the form of fans, pumps, air compressors, chillers or cooling towers. Noise levels from these types of equipment can vary significantly. Noise levels from these types of sources generally range between 45 dB to 70 dB at a distance of 50 feet and could exceed the daytime noise level criterion of 55 dB L_{eq}. However, numerous noise control strategies can be utilized to mitigate noise levels to less than significant levels. With implementation of the following mitigation measures, the proposed Project would have a **less than significant** impact relative to this environmental topic.

MITIGATION MEASURES

Mitigation Measure 3.11-8: *Planned retail commercial and light industrial and office uses shall be required to comply with the requirements of chapter 16 of the City of Stockton Development Code.*

Mitigation Measure 3.11-9: *When tentative maps for the commercial developments are available, a detailed noise analysis shall be completed to ensure compliance with the City of Stockton noise level criteria.*

Mitigation Measure 3.11-10: *HVAC equipment should be located either at ground level or when located on roof-tops, the building facades should include parapets for shielding.*

Mitigation Measure 3.11-11: *Where commercial retail land uses are adjacent to residential areas or separated by local streets, barriers should be considered as a means of reducing overall noise levels due to on-site activities. Generally, barriers in the range of 8-feet in height are sufficient to reduce on-site noise levels at residential uses.*

No Build Alternative:

Under the No Build Alternative, development of the Project site would not occur, and the Project site would remain in its current condition. Implementation of the No Build Alternative would not introduce new sensitive receptors to the site. Under this alternative, **no impact** would occur, and no mitigation is required. Compared to the proposed Project, this alternative is environmentally superior relative to this topic.

With Bridge Alternative:

Commercial land use activities can produce noise which may affect adjacent sensitive land uses. These noise sources can be continuous and may contain tonal components which may be annoying to individuals who live in the nearby vicinity. In addition, noise generation from fixed noise sources may vary based upon climatic conditions, time of day and existing ambient noise levels. The

Project includes commercial land uses in the northwest quadrant of the Project site. The primary noise sources generally include truck deliveries, loading dock operations, trash pickup, parking lot use, and heating, air conditioning and ventilation (HVAC) equipment.

The proposed commercial land use is adjacent to the proposed residential uses. Loading dock noise levels generally range between 50 dBA L_{eq} and 60 dBA L_{eq}, at a distance of 100 feet. The primary noise sources include truck arrivals and departures, and unloading of products.

HVAC equipment can also be a primary noise source associated with commercial or retail uses. These types of equipment are often mounted on roof tops, located on the ground or located within mechanical rooms. The noise sources can take the form of fans, pumps, air compressors, chillers or cooling towers. Noise levels from these types of equipment can vary significantly. Noise levels from these types of sources generally range between 45 dB to 70 dB at a distance of 50 feet and could exceed the daytime noise level criterion of 55 dB L_{eq}. However, numerous noise control strategies can be utilized to mitigate noise levels to less than significant levels. With implementation of the same mitigation measures as the proposed Project the With Bridge Alternative would have a **less than significant** impact relative to this environmental topic.

General Plan 2035 Alternative:

Under the General Plan 2035 Alternative, the entire 318.82-acre Project site would be developed with residential and commercial land uses. Under the General Plan 2035 Alternative, the Project site would include commercial development at the same site. Commercial land use activities can produce noise which may affect adjacent sensitive land uses. These noise sources can be continuous and may contain tonal components which may be annoying to individuals who live in the nearby vicinity. In addition, noise generation from fixed noise sources may vary based upon climatic conditions, time of day and existing ambient noise levels. The alternative includes commercial land uses in the northwest quadrant of the Project site. The primary noise sources generally include truck deliveries, loading dock operations, trash pickup, parking lot use, and heating, air conditioning and ventilation (HVAC) equipment.

The commercial land use is adjacent to residential uses. Loading dock noise levels generally range between 50 dBA L_{eq} and 60 dBA L_{eq}, at a distance of 100 feet. The primary noise sources include truck arrivals and departures, and unloading of products.

HVAC equipment can also be a primary noise source associated with commercial or retail uses. These types of equipment are often mounted on roof tops, located on the ground or located within mechanical rooms. The noise sources can take the form of fans, pumps, air compressors, chillers or cooling towers. Noise levels from these types of equipment can vary significantly. Noise levels from these types of sources generally range between 45 dB to 70 dB at a distance of 50 feet and could exceed the daytime noise level criterion of 55 dB Leq. However, numerous noise control strategies can be utilized to mitigate noise levels to less than significant levels. With implementation of the same mitigation measures as the proposed Project, the General Plan 2035 Alternative would have a **less than significant** impact relative to this environmental topic.

Reduced Project Alternative:

Under the Reduced Project Alternative, the Project site would be developed with the same components as the proposed Project, but the area utilized for the development would be reduced by approximately 33 percent. The total Project site would be reduced by approximately 106.2 acres, and the existing 15.57-acre industrial area would be eliminated from the Project site. This approximately 197.05-acre alternative would result in up to 715 LDR units (with school) to 805 LDR units (without school) and up to 226 HDR units (with or without school), for a total of 941 units (with school) to 1,031 units (without school). This would result in a reduction of 472 (with or without school) units when compared to the proposed Project. The 10.5-acre commercial area in the northwest portion of the Project site would be eliminated. This would eliminate a 70,000-sf grocery store, 22,000 sf of retail shops, a 3,500-sf quick service restaurant, a 3,500-sf convenience store with attached fueling facility, and a 2,500-sf wine tasting room. This alternative would still establish a site for a 14.7-acre K-8 school to be developed by the LUSD. However, if the LUSD decides against the K-8 school siting, the area will instead include the development of single family residential units.

Therefore, this is a **less than significant** impact. Compared to the proposed Project, this alternative is superior relative to this topic.

Reduced Intensity/Density Alternative:

Under the Reduced Intensity/Density Alternative, the Project site would be developed with a reduction in the overall project intensity/density while maintaining the approximate overall project footprint. For the purposes of discussion, this option considers a 20 percent reduction in the intensity/density of the project while maintaining the approximately 318.82-acre project footprint. Typical residential lots would increase from 5,000 to 6,000 sf to 6,000 to 7,400 sf. This alternative would result in up to 858 LDR units (with school) to 930 LDR units (without school) and up to 272 HDR units (with or without school), for a total of 1,130 units (with school) to 1,202 units (without school). The 10.5-acre commercial area in the northwest portion of the project site would be eliminated. This would eliminate a 70,000 square foot grocery store, 22,000 square feet of retail shops, a 3,500 square foot quick service restaurant, a 3,500 square foot convenience store with attached fueling facility, and a 2,500 square foot wine tasting room. This alternative would still establish a site for a 14.7-acre K-8school to be developed by the LUSD. However, if the LUSD decides against the elementary school siting, the area will instead include the development of single family residential units.

Under the Reduced Intensity/Density Alternative, the commercial area in the northwest portion of the Project site would be eliminated. Therefore, this is a **less than significant impact**. Compared to the proposed Project, this alternative is superior relative to this topic.

Appendix A
Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz (Hz).
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
$L_{(n)}$	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L_{50} is the sound level exceeded 50% of the time during the one hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.
NRC	Noise Reduction Coefficient. NRC is a single-number rating of the sound-absorption of a material equal to the arithmetic mean of the sound-absorption coefficients in the 250, 500, 1000, and 2,000 Hz octave frequency bands rounded to the nearest multiple of 0.05. It is a representation of the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; an NRC of 1 indicates perfect absorption.
Peak Noise	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the AMaximum@ level, which is the highest RMS level.
RT_{60}	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 Sabin.
SEL	Sound Exposure Level. SEL is s rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event.
STC	Sound Transmission Class. STC is an integer rating of how well a building partition attenuates airborne sound. It is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
Simple Tone	Any sound which can be judged as audible as a single pitch or set of single pitches.

Appendix B
Tra Vigne
24hr Continuous Noise Monitoring - Site A
Wednesday, March 26, 2003

Hour	Leq	Lmax	L50	L90
0:00	73	103	41	36
1:00	74	99	39	34
2:00	79	107	39	35
3:00	74	99	40	37
4:00	73	98	45	39
5:00	54	76	50	44
6:00	72	90	54	50
7:00	71	91	52	48
8:00	76	95	52	48
9:00	52	65	51	47
10:00	62	83	51	46
11:00	54	70	52	47
12:00	76	100	55	50
13:00	65	89	51	48
14:00	75	103	51	48
15:00	75	99	51	48
16:00	68	93	51	47
17:00	71	95	52	49
18:00	51	63	50	46
19:00	69	90	49	44
20:00	75	100	48	43
21:00	74	101	47	42
22:00	68	100	44	40
23:00	75	99	43	39

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	76.0	51.0	72.1	78.5	54.0	73.9
Lmax (Maximum)	103.0	63.0	89.1	107.0	76.0	96.8
L50 (Median)	55.0	47.0	50.9	54.0	39.0	43.9
L90 (Background)	50.0	42.0	46.7	50.0	34.0	39.3

Computed Ldn, dB	80.1
% Daytime Energy	52%
% Nighttime Energy	48%

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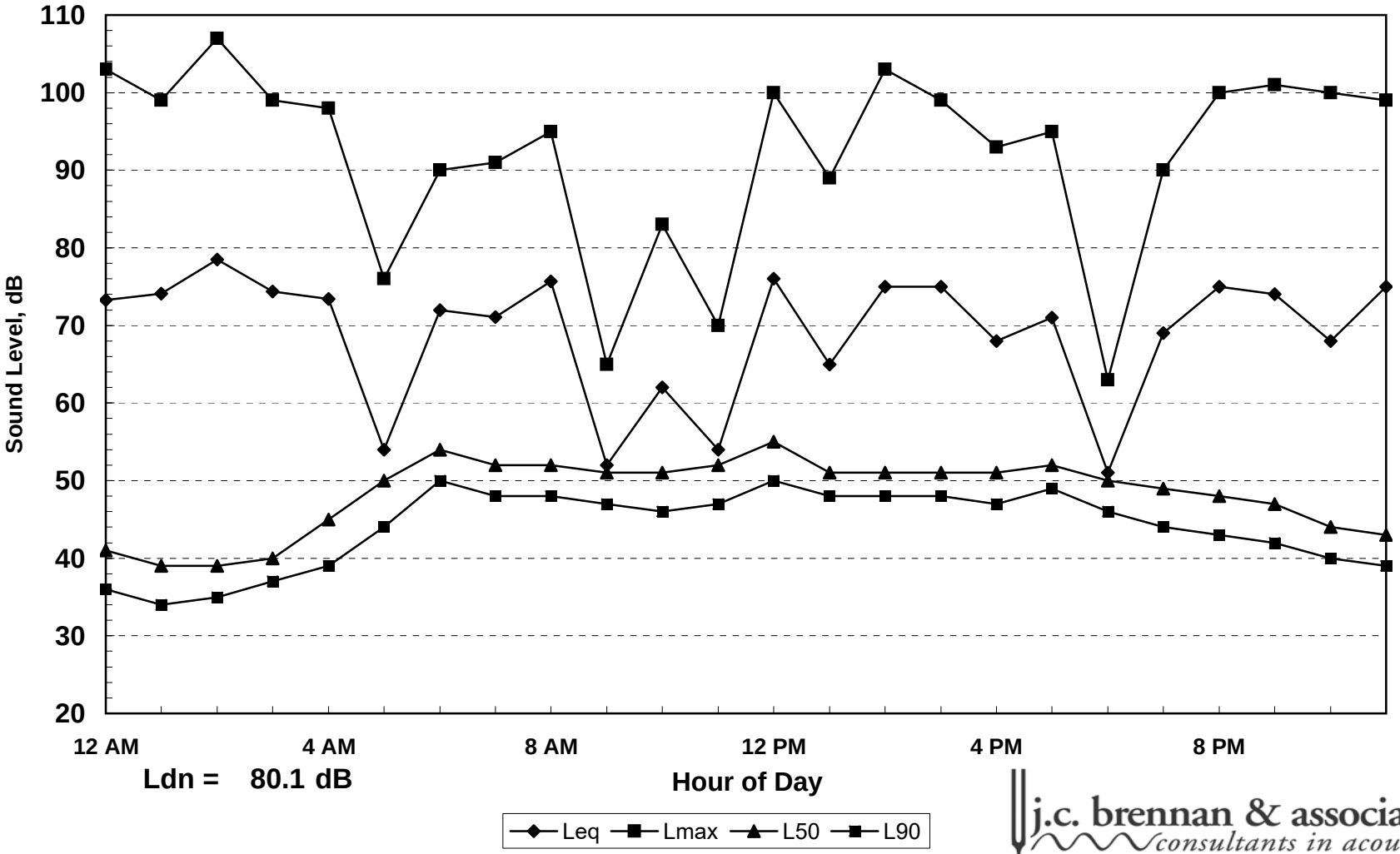
Appendix B
Tra Vigne
24hr Continuous Noise Monitoring - Site A
Wednesday, March 26, 2003



Ldn = 80.1 dB

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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2016-116 Tra Vigne
Description: Existing
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Eight Mile Road	Lower Sacramento to Davis	17,151	85		15	2	1	45	100	
2	Eight Mile Road	Lower Sacramento to West	21,321	85		15	2	1	45	100	
3	Eight Mile Road	West to Micke Grove / Holman	12,208	85		15	2	1	45	100	
4	West Lane	Eight Mile to Ham	12,314	85		15	2	1	50	100	
5	West Lane	Morada to Eight Mile	17,023	85		15	2	1	50	100	
6	West Lane	Morada to Knickerbocker	21,472	85		15	2	1	50	100	
7	Morada Lane	West of West Lane	2,824	85		15	2	1	45	100	
8	Morada Lane	East of West Lane	13,827	85		15	2	1	45	100	
9	SR 99	Eight Mile to Armstrong	63,000	72		28	4	9	65	100	
10	SR 99	Eight Mile to Morada	74,000	72		28	4	9	65	100	
11	SR 99	Morada to Hammer	81,000	72		28	4	9	65	100	
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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2016-116 Tra Vigne
Description: Existing
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Eight Mile Road	Lower Sacramento to Davis	63.8	55.2	56.7	65
2	Eight Mile Road	Lower Sacramento to West	64.8	56.2	57.6	66
3	Eight Mile Road	West to Micke Grove / Holman	62.3	53.7	55.2	64
4	West Lane	Eight Mile to Ham	63.7	54.5	55.7	65
5	West Lane	Morada to Eight Mile	65.1	55.9	57.1	66
6	West Lane	Morada to Knickerbocker	66.1	56.9	58.1	67
7	Morada Lane	West of West Lane	56.0	47.4	48.9	57
8	Morada Lane	East of West Lane	62.9	54.3	55.8	64
9	SR 99	Eight Mile to Armstrong	75.4	68.1	75.1	79
10	SR 99	Eight Mile to Morada	76.1	68.8	75.8	79
11	SR 99	Morada to Hammer	76.4	69.2	76.2	80

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2016-116 Tra Vigne
Description: Existing
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	Eight Mile Road	Lower Sacramento to Davis	22	47	101	218	469
2	Eight Mile Road	Lower Sacramento to West	25	54	117	252	542
3	Eight Mile Road	West to Micke Grove / Holman	17	37	81	174	374
4	West Lane	Eight Mile to Ham	21	45	96	208	448
5	West Lane	Morada to Eight Mile	26	56	120	258	556
6	West Lane	Morada to Knickerbocker	30	65	140	301	649
7	Morada Lane	West of West Lane	7	14	30	65	141
8	Morada Lane	East of West Lane	19	41	88	189	406
9	SR 99	Eight Mile to Armstrong	175	377	813	1752	3774
10	SR 99	Eight Mile to Morada	195	420	905	1950	4201
11	SR 99	Morada to Hammer	207	446	961	2071	4462

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2017-156 Tra Vigne Revised
Description: EPAP Plus Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Eight Mile Road	Lower Sacramento to Davis	27,336	85		15	2	1	45	100	
2	Eight Mile Road	Lower Sacramento to West	35,332	85		15	2	1	45	100	
3	Eight Mile Road	West to Micke Grove / Holman	24,425	85		15	2	1	45	100	
4	West Lane	Eight Mile to Ham	14,108	85		15	2	1	50	100	
5	West Lane	Morada to Eight Mile	27,203	85		15	2	1	50	100	
6	West Lane	Morada to Knickerbocker	31,291	85		15	2	1	50	100	
7	Morada Lane	West of West Lane	3,490	85		15	2	1	45	100	
8	Morada Lane	East of West Lane	16,611	85		15	2	1	45	100	
9	SR 99	Eight Mile to Armstrong	89,456	72		28	4	9	65	100	
10	SR 99	Eight Mile to Morada	100,014	72		28	4	9	65	100	
11	SR 99	Morada to Hammer	93,386	72		28	4	9	65	100	
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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2017-156 Tra Vigne Revised
Description: EPAP Plus Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Eight Mile Road	Lower Sacramento to Davis	65.8	57.2	58.7	67
2	Eight Mile Road	Lower Sacramento to West	67.0	58.4	59.8	68
3	Eight Mile Road	West to Micke Grove / Holman	65.4	56.8	58.2	67
4	West Lane	Eight Mile to Ham	64.3	55.1	56.3	65
5	West Lane	Morada to Eight Mile	67.1	57.9	59.1	68
6	West Lane	Morada to Knickerbocker	67.8	58.5	59.7	69
7	Morada Lane	West of West Lane	56.9	48.3	49.8	58
8	Morada Lane	East of West Lane	63.7	55.1	56.6	65
9	SR 99	Eight Mile to Armstrong	76.9	69.6	76.6	80
10	SR 99	Eight Mile to Morada	77.4	70.1	77.1	81
11	SR 99	Morada to Hammer	77.1	69.8	76.8	80

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2017-156 Tra Vigne Revised
Description: EPAP Plus Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	Eight Mile Road	Lower Sacramento to Davis	30	64	138	297	640
2	Eight Mile Road	Lower Sacramento to West	35	76	164	352	759
3	Eight Mile Road	West to Micke Grove / Holman	28	59	128	276	594
4	West Lane	Eight Mile to Ham	23	49	106	228	490
5	West Lane	Morada to Eight Mile	35	76	164	353	760
6	West Lane	Morada to Knickerbocker	39	83	180	387	834
7	Morada Lane	West of West Lane	8	16	35	75	162
8	Morada Lane	East of West Lane	21	46	99	213	459
9	SR 99	Eight Mile to Armstrong	221	477	1027	2213	4767
10	SR 99	Eight Mile to Morada	238	514	1106	2384	5135
11	SR 99	Morada to Hammer	228	491	1057	2277	4906

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2016-116 Tra Vigne
Description: Existing + Approved Projects No Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Eight Mile Road	Lower Sacramento to Davis	25,554	85		15	2	1	45	100	
2	Eight Mile Road	Lower Sacramento to West	31,768	85		15	2	1	45	100	
3	Eight Mile Road	West to Micke Grove / Holman	18,190	85		15	2	1	45	100	
4	West Lane	Eight Mile to Ham	13,546	85		15	2	1	50	100	
5	West Lane	Morada to Eight Mile	20,428	85		15	2	1	50	100	
6	West Lane	Morada to Knickerbocker	25,766	85		15	2	1	50	100	
7	Morada Lane	West of West Lane	3,134	85		15	2	1	45	100	
8	Morada Lane	East of West Lane	15,348	85		15	2	1	45	100	
9	SR 99	Eight Mile to Armstrong	89,100	72		28	4	9	65	100	
10	SR 99	Eight Mile to Morada	97,200	72		28	4	9	65	100	
11	SR 99	Morada to Hammer	90,000	72		28	4	9	65	100	
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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2016-116 Tra Vigne
Description: Existing + Approved Projects No Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Eight Mile Road	Lower Sacramento to Davis	65.6	56.9	58.4	67
2	Eight Mile Road	Lower Sacramento to West	66.5	57.9	59.4	68
3	Eight Mile Road	West to Micke Grove / Holman	64.1	55.5	57.0	65
4	West Lane	Eight Mile to Ham	64.1	54.9	56.1	65
5	West Lane	Morada to Eight Mile	65.9	56.7	57.9	67
6	West Lane	Morada to Knickerbocker	66.9	57.7	58.9	68
7	Morada Lane	West of West Lane	56.4	47.8	49.3	58
8	Morada Lane	East of West Lane	63.3	54.7	56.2	65
9	SR 99	Eight Mile to Armstrong	76.9	69.6	76.6	80
10	SR 99	Eight Mile to Morada	77.2	70.0	77.0	81
11	SR 99	Morada to Hammer	76.9	69.7	76.7	80

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2016-116 Tra Vigne
Description: Existing + Approved Projects No Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	Eight Mile Road	Lower Sacramento to Davis	28	61	132	284	612
2	Eight Mile Road	Lower Sacramento to West	33	71	152	328	707
3	Eight Mile Road	West to Micke Grove / Holman	23	49	105	226	488
4	West Lane	Eight Mile to Ham	22	48	103	221	477
5	West Lane	Morada to Eight Mile	29	63	135	291	628
6	West Lane	Morada to Knickerbocker	34	73	158	340	733
7	Morada Lane	West of West Lane	7	15	33	70	151
8	Morada Lane	East of West Lane	20	44	94	202	436
9	SR 99	Eight Mile to Armstrong	221	475	1024	2207	4755
10	SR 99	Eight Mile to Morada	234	504	1086	2339	5039
11	SR 99	Morada to Hammer	222	479	1031	2222	4787

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2017-158 Tra Vigne Revised
Description: EPAP Plus with Bridge Alternative Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Eight Mile Road	Lower Sacramento to Davis	27,152	85		15	2	1	45	100	
2	Eight Mile Road	Lower Sacramento to West	34,609	85		15	2	1	45	100	
3	Eight Mile Road	West to Micke Grove / Holman	24,418	85		15	2	1	45	100	
4	West Lane	Eight Mile to Ham	14,106	85		15	2	1	50	100	
5	West Lane	Morada to Eight Mile	27,087	85		15	2	1	50	100	
6	West Lane	Morada to Knickerbocker	28,237	85		15	2	1	50	100	
7	Morada Lane	West of West Lane	3,489	85		15	2	1	45	100	
8	Morada Lane	East of West Lane	16,516	85		15	2	1	45	100	
9	SR 99	Eight Mile to Armstrong	89,455	72		28	4	9	65	100	
10	SR 99	Eight Mile to Morada	99,564	72		28	4	9	65	100	
11	SR 99	Morada to Hammer	92,841	72		28	4	9	65	100	
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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2017-158 Tra Vigne Revised
Description: EPAP Plus with Bridge Alternative Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Eight Mile Road	Lower Sacramento to Davis	65.8	57.2	58.7	67
2	Eight Mile Road	Lower Sacramento to West	66.9	58.3	59.8	68
3	Eight Mile Road	West to Micke Grove / Holman	65.4	56.7	58.2	67
4	West Lane	Eight Mile to Ham	64.3	55.1	56.3	65
5	West Lane	Morada to Eight Mile	67.1	57.9	59.1	68
6	West Lane	Morada to Knickerbocker	67.3	58.1	59.3	68
7	Morada Lane	West of West Lane	56.9	48.3	49.8	58
8	Morada Lane	East of West Lane	63.7	55.1	56.5	65
9	SR 99	Eight Mile to Armstrong	76.9	69.6	76.6	80
10	SR 99	Eight Mile to Morada	77.3	70.1	77.1	81
11	SR 99	Morada to Hammer	77.0	69.8	76.8	80

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2017-158 Tra Vigne Revised
Description: EPAP Plus with Bridge Alternative Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	Eight Mile Road	Lower Sacramento to Davis	30	64	137	296	637
2	Eight Mile Road	Lower Sacramento to West	35	75	161	348	749
3	Eight Mile Road	West to Micke Grove / Holman	28	59	128	275	594
4	West Lane	Eight Mile to Ham	23	49	106	228	490
5	West Lane	Morada to Eight Mile	35	76	163	352	757
6	West Lane	Morada to Knickerbocker	36	78	168	361	779
7	Morada Lane	West of West Lane	8	16	35	75	162
8	Morada Lane	East of West Lane	21	46	99	212	457
9	SR 99	Eight Mile to Armstrong	221	477	1027	2213	4767
10	SR 99	Eight Mile to Morada	238	512	1103	2377	5120
11	SR 99	Morada to Hammer	227	489	1053	2268	4887

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Data Input Sheet

Project #: 2016-116 Tra Vigne
Description: Existing + Approved Projects GP 2035
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Eight Mile Road	Lower Sacramento to Davis	28,354	85		15	2	1	45	100	
2	Eight Mile Road	Lower Sacramento to West	37,368	85		15	2	1	45	100	
3	Eight Mile Road	West to Micke Grove / Holman	28,944	85		15	2	1	45	100	
4	West Lane	Eight Mile to Ham	14,430	85		15	2	1	50	100	
5	West Lane	Morada to Eight Mile	30,392	85		15	2	1	50	100	
6	West Lane	Morada to Knickerbocker	34,444	85		15	2	1	50	100	
7	Morada Lane	West of West Lane	3,694	85		15	2	1	45	100	
8	Morada Lane	East of West Lane	16,072	85		15	2	1	45	100	
9	SR 99	Eight Mile to Armstrong	89,660	72		28	4	9	65	100	
10	SR 99	Eight Mile to Morada	102,520	72		28	4	9	65	100	
11	SR 99	Morada to Hammer	95,320	72		28	4	9	65	100	
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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2016-116 Tra Vigne
Description: Existing + Approved Projects GP 2035
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Eight Mile Road	Lower Sacramento to Davis	66.0	57.4	58.9	67
2	Eight Mile Road	Lower Sacramento to West	67.2	58.6	60.1	68
3	Eight Mile Road	West to Micke Grove / Holman	66.1	57.5	59.0	67
4	West Lane	Eight Mile to Ham	64.4	55.2	56.4	65
5	West Lane	Morada to Eight Mile	67.6	58.4	59.6	69
6	West Lane	Morada to Knickerbocker	68.2	59.0	60.2	69
7	Morada Lane	West of West Lane	57.2	48.5	50.0	58
8	Morada Lane	East of West Lane	63.5	54.9	56.4	65
9	SR 99	Eight Mile to Armstrong	76.9	69.7	76.7	80
10	SR 99	Eight Mile to Morada	77.5	70.2	77.2	81
11	SR 99	Morada to Hammer	77.2	69.9	76.9	80

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2016-116 Tra Vigne
Description: Existing + Approved Projects GP 2035
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	Eight Mile Road	Lower Sacramento to Davis	30	66	141	304	656
2	Eight Mile Road	Lower Sacramento to West	37	79	170	366	788
3	Eight Mile Road	West to Micke Grove / Holman	31	66	143	309	665
4	West Lane	Eight Mile to Ham	23	50	107	231	498
5	West Lane	Morada to Eight Mile	38	82	176	380	818
6	West Lane	Morada to Knickerbocker	41	89	192	413	889
7	Morada Lane	West of West Lane	8	17	36	78	169
8	Morada Lane	East of West Lane	21	45	97	208	449
9	SR 99	Eight Mile to Armstrong	222	477	1029	2216	4775
10	SR 99	Eight Mile to Morada	242	522	1125	2423	5221
11	SR 99	Morada to Hammer	231	497	1072	2308	4973

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2016-116 Tra Vigne
Description: Existing + Approved Projects Reduced Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Eight Mile Road	Lower Sacramento to Davis	26,472	85		15	2	1	45	100	
2	Eight Mile Road	Lower Sacramento to West	33,604	85		15	2	1	45	100	
3	Eight Mile Road	West to Micke Grove / Holman	21,056	85		15	2	1	45	100	
4	West Lane	Eight Mile to Ham	13,902	85		15	2	1	50	100	
5	West Lane	Morada to Eight Mile	24,354	85		15	2	1	50	100	
6	West Lane	Morada to Knickerbocker	28,612	85		15	2	1	50	100	
7	Morada Lane	West of West Lane	3,318	85		15	2	1	45	100	
8	Morada Lane	East of West Lane	16,244	85		15	2	1	45	100	
9	SR 99	Eight Mile to Armstrong	89,284	72		28	4	9	65	100	
10	SR 99	Eight Mile to Morada	98,344	72		28	4	9	65	100	
11	SR 99	Morada to Hammer	91,744	72		28	4	9	65	100	
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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2016-116 Tra Vigne
Description: Existing + Approved Projects Reduced Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Eight Mile Road	Lower Sacramento to Davis	65.7	57.1	58.6	67
2	Eight Mile Road	Lower Sacramento to West	66.7	58.1	59.6	68
3	Eight Mile Road	West to Micke Grove / Holman	64.7	56.1	57.6	66
4	West Lane	Eight Mile to Ham	64.2	55.0	56.2	65
5	West Lane	Morada to Eight Mile	66.7	57.5	58.6	68
6	West Lane	Morada to Knickerbocker	67.4	58.2	59.3	68
7	Morada Lane	West of West Lane	56.7	48.1	49.6	58
8	Morada Lane	East of West Lane	63.6	55.0	56.5	65
9	SR 99	Eight Mile to Armstrong	76.9	69.6	76.6	80
10	SR 99	Eight Mile to Morada	77.3	70.1	77.1	81
11	SR 99	Morada to Hammer	77.0	69.8	76.8	80

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2016-116 Tra Vigne
Description: Existing + Approved Projects Reduced Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	Eight Mile Road	Lower Sacramento to Davis	29	63	135	291	626
2	Eight Mile Road	Lower Sacramento to West	34	73	158	341	734
3	Eight Mile Road	West to Micke Grove / Holman	25	54	116	250	538
4	West Lane	Eight Mile to Ham	23	49	105	225	486
5	West Lane	Morada to Eight Mile	33	71	152	327	706
6	West Lane	Morada to Knickerbocker	36	79	169	365	786
7	Morada Lane	West of West Lane	7	16	34	73	157
8	Morada Lane	East of West Lane	21	45	97	210	452
9	SR 99	Eight Mile to Armstrong	221	476	1026	2210	4761
10	SR 99	Eight Mile to Morada	236	508	1094	2357	5078
11	SR 99	Morada to Hammer	225	485	1045	2250	4848

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2016-116 Tra Vigne
Description: Existing + Approved Projects Reduced Intensity
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Eight Mile Road	Lower Sacramento to Davis	26,600	85		15	2	1	45	100	
2	Eight Mile Road	Lower Sacramento to West	33,860	85		15	2	1	45	100	
3	Eight Mile Road	West to Micke Grove / Holman	21,480	85		15	2	1	45	100	
4	West Lane	Eight Mile to Ham	13,950	85		15	2	1	50	100	
5	West Lane	Morada to Eight Mile	24,882	85		15	2	1	50	100	
6	West Lane	Morada to Knickerbocker	29,010	85		15	2	1	50	100	
7	Morada Lane	West of West Lane	3,344	85		15	2	1	45	100	
8	Morada Lane	East of West Lane	16,348	85		15	2	1	45	100	
9	SR 99	Eight Mile to Armstrong	89,310	72		28	4	9	65	100	
10	SR 99	Eight Mile to Morada	98,520	72		28	4	9	65	100	
11	SR 99	Morada to Hammer	91,988	72		28	4	9	65	100	
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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2016-116 Tra Vigne
Description: Existing + Approved Projects Reduced Intensity
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Eight Mile Road	Lower Sacramento to Davis	65.7	57.1	58.6	67
2	Eight Mile Road	Lower Sacramento to West	66.8	58.2	59.7	68
3	Eight Mile Road	West to Micke Grove / Holman	64.8	56.2	57.7	66
4	West Lane	Eight Mile to Ham	64.2	55.0	56.2	65
5	West Lane	Morada to Eight Mile	66.8	57.5	58.7	68
6	West Lane	Morada to Knickerbocker	67.4	58.2	59.4	68
7	Morada Lane	West of West Lane	56.7	48.1	49.6	58
8	Morada Lane	East of West Lane	63.6	55.0	56.5	65
9	SR 99	Eight Mile to Armstrong	76.9	69.6	76.6	80
10	SR 99	Eight Mile to Morada	77.3	70.1	77.1	81
11	SR 99	Morada to Hammer	77.0	69.8	76.8	80

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2016-116 Tra Vigne
Description: Existing + Approved Projects Reduced Intensity
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	Eight Mile Road	Lower Sacramento to Davis	29	63	135	292	628
2	Eight Mile Road	Lower Sacramento to West	34	74	159	343	738
3	Eight Mile Road	West to Micke Grove / Holman	25	54	117	253	545
4	West Lane	Eight Mile to Ham	23	49	105	226	487
5	West Lane	Morada to Eight Mile	33	72	154	332	716
6	West Lane	Morada to Knickerbocker	37	79	171	368	793
7	Morada Lane	West of West Lane	7	16	34	73	158
8	Morada Lane	East of West Lane	21	45	98	211	454
9	SR 99	Eight Mile to Armstrong	221	476	1026	2210	4762
10	SR 99	Eight Mile to Morada	236	508	1095	2360	5084
11	SR 99	Morada to Hammer	225	486	1046	2254	4857

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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2017-158 Tra Vigne Revised
Description: Cumulative Plus Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Eight Mile Road	Lower Sacramento to Davis	57,002	85		15	2	1	45	100	
2	Eight Mile Road	Lower Sacramento to West	76,310	85		15	2	1	45	100	
3	Eight Mile Road	West to Micke Grove / Holman	65,464	85		15	2	1	45	100	
4	West Lane	Eight Mile to Ham	36,179	85		15	2	1	50	100	
5	West Lane	Morada to Eight Mile	48,318	85		15	2	1	50	100	
6	West Lane	Morada to Knickerbocker	58,969	85		15	2	1	50	100	
7	Morada Lane	West of West Lane	22,002	85		15	2	1	45	100	
8	Morada Lane	East of West Lane	19,259	85		15	2	1	45	100	
9	SR 99	Eight Mile to Armstrong	152,235	72		28	4	9	65	100	
10	SR 99	Eight Mile to Morada	180,911	72		28	4	9	65	100	
11	SR 99	Morada to Hammer	201,365	72		28	4	9	65	100	
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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2017-158 Tra Vigne Revised
Description: Cumulative Plus Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Eight Mile Road	Lower Sacramento to Davis	69.0	60.4	61.9	70
2	Eight Mile Road	Lower Sacramento to West	70.3	61.7	63.2	72
3	Eight Mile Road	West to Micke Grove / Holman	69.6	61.0	62.5	71
4	West Lane	Eight Mile to Ham	68.4	59.2	60.4	69
5	West Lane	Morada to Eight Mile	69.6	60.4	61.6	71
6	West Lane	Morada to Knickerbocker	70.5	61.3	62.5	72
7	Morada Lane	West of West Lane	64.9	56.3	57.8	66
8	Morada Lane	East of West Lane	64.3	55.7	57.2	66
9	SR 99	Eight Mile to Armstrong	79.2	72.0	79.0	82
10	SR 99	Eight Mile to Morada	79.9	72.7	79.7	83
11	SR 99	Morada to Hammer	80.4	73.2	80.2	84

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2017-158 Tra Vigne Revised
Description: Cumulative Plus Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	Eight Mile Road	Lower Sacramento to Davis	48	104	225	485	1044
2	Eight Mile Road	Lower Sacramento to West	59	127	273	589	1269
3	Eight Mile Road	West to Micke Grove / Holman	53	115	247	532	1145
4	West Lane	Eight Mile to Ham	43	92	198	426	919
5	West Lane	Morada to Eight Mile	52	111	240	517	1114
6	West Lane	Morada to Knickerbocker	59	127	274	591	1272
7	Morada Lane	West of West Lane	26	55	119	257	554
8	Morada Lane	East of West Lane	24	51	109	235	507
9	SR 99	Eight Mile to Armstrong	315	680	1464	3154	6795
10	SR 99	Eight Mile to Morada	354	762	1643	3539	7624
11	SR 99	Morada to Hammer	380	819	1764	3801	8188

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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Data Input Sheet

Project #: 2016-116 Tra Vigne
Description: Cumulative No Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Eight Mile Road	Lower Sacramento to Davis	55,390	85		15	2	1	45	100	
2	Eight Mile Road	Lower Sacramento to West	74,296	85		15	2	1	45	100	
3	Eight Mile Road	West to Micke Grove / Holman	61,164	85		15	2	1	45	100	
4	West Lane	Eight Mile to Ham	35,632	85		15	2	1	50	100	
5	West Lane	Morada to Eight Mile	47,000	85		15	2	1	50	100	
6	West Lane	Morada to Knickerbocker	58,966	85		15	2	1	50	100	
7	Morada Lane	West of West Lane	20,012	85		15	2	1	45	100	
8	Morada Lane	East of West Lane	17,466	85		15	2	1	45	100	
9	SR 99	Eight Mile to Armstrong	152,942	72		28	4	9	65	100	
10	SR 99	Eight Mile to Morada	180,580	72		28	4	9	65	100	
11	SR 99	Morada to Hammer	201,564	72		28	4	9	65	100	
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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2016-116 Tra Vigne
Description: Cumulative No Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Eight Mile Road	Lower Sacramento to Davis	68.9	60.3	61.8	70
2	Eight Mile Road	Lower Sacramento to West	70.2	61.6	63.1	71
3	Eight Mile Road	West to Micke Grove / Holman	69.3	60.7	62.2	71
4	West Lane	Eight Mile to Ham	68.3	59.1	60.3	69
5	West Lane	Morada to Eight Mile	69.5	60.3	61.5	71
6	West Lane	Morada to Knickerbocker	70.5	61.3	62.5	72
7	Morada Lane	West of West Lane	64.5	55.9	57.4	66
8	Morada Lane	East of West Lane	63.9	55.3	56.8	65
9	SR 99	Eight Mile to Armstrong	79.2	72.0	79.0	83
10	SR 99	Eight Mile to Morada	79.9	72.7	79.7	83
11	SR 99	Morada to Hammer	80.4	73.2	80.2	84

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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2016-116 Tra Vigne
Description: Cumulative No Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	Eight Mile Road	Lower Sacramento to Davis	48	102	221	476	1025
2	Eight Mile Road	Lower Sacramento to West	58	125	269	578	1246
3	Eight Mile Road	West to Micke Grove / Holman	51	109	236	508	1095
4	West Lane	Eight Mile to Ham	42	91	196	422	909
5	West Lane	Morada to Eight Mile	51	109	236	508	1094
6	West Lane	Morada to Knickerbocker	59	127	274	591	1272
7	Morada Lane	West of West Lane	24	52	112	241	520
8	Morada Lane	East of West Lane	22	47	102	220	475
9	SR 99	Eight Mile to Armstrong	316	682	1469	3164	6816
10	SR 99	Eight Mile to Morada	353	761	1641	3534	7615
11	SR 99	Morada to Hammer	380	819	1765	3803	8194

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2017-158 Tra Vigne Revised
Description: Cumulative Plus Project with Bridge Alternatives
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Eight Mile Road	Lower Sacramento to Davis	56,568	85		15	2	1	45	100	
2	Eight Mile Road	Lower Sacramento to West	76,252	85		15	2	1	45	100	
3	Eight Mile Road	West to Micke Grove / Holman	62,830	85		15	2	1	45	100	
4	West Lane	Eight Mile to Ham	38,307	85		15	2	1	50	100	
5	West Lane	Morada to Eight Mile	48,954	85		15	2	1	50	100	
6	West Lane	Morada to Knickerbocker	58,701	85		15	2	1	50	100	
7	Morada Lane	West of West Lane	20,062	85		15	2	1	45	100	
8	Morada Lane	East of West Lane	16,630	85		15	2	1	45	100	
9	SR 99	Eight Mile to Armstrong	153,139	72		28	4	9	65	100	
10	SR 99	Eight Mile to Morada	180,631	72		28	4	9	65	100	
11	SR 99	Morada to Hammer	201,277	72		28	4	9	65	100	
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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2017-158 Tra Vigne Revised
Description: Cumulative Plus Project with Bridge Alternatives
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Eight Mile Road	Lower Sacramento to Davis	69.0	60.4	61.9	70
2	Eight Mile Road	Lower Sacramento to West	70.3	61.7	63.2	72
3	Eight Mile Road	West to Micke Grove / Holman	69.5	60.9	62.3	71
4	West Lane	Eight Mile to Ham	68.6	59.4	60.6	70
5	West Lane	Morada to Eight Mile	69.7	60.5	61.7	71
6	West Lane	Morada to Knickerbocker	70.5	61.3	62.5	72
7	Morada Lane	West of West Lane	64.5	55.9	57.4	66
8	Morada Lane	East of West Lane	63.7	55.1	56.6	65
9	SR 99	Eight Mile to Armstrong	79.2	72.0	79.0	83
10	SR 99	Eight Mile to Morada	79.9	72.7	79.7	83
11	SR 99	Morada to Hammer	80.4	73.2	80.2	84

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2017-158 Tra Vigne Revised
Description: Cumulative Plus Project with Bridge Alternatives
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	Eight Mile Road	Lower Sacramento to Davis	48	104	224	482	1039
2	Eight Mile Road	Lower Sacramento to West	59	127	273	589	1268
3	Eight Mile Road	West to Micke Grove / Holman	52	111	240	517	1115
4	West Lane	Eight Mile to Ham	44	95	206	443	954
5	West Lane	Morada to Eight Mile	52	112	242	522	1124
6	West Lane	Morada to Knickerbocker	59	127	273	589	1268
7	Morada Lane	West of West Lane	24	52	112	242	521
8	Morada Lane	East of West Lane	21	46	99	213	459
9	SR 99	Eight Mile to Armstrong	317	682	1470	3167	6822
10	SR 99	Eight Mile to Morada	354	762	1641	3535	7616
11	SR 99	Morada to Hammer	380	819	1764	3800	8186

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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2016-116 Tra Vigne
Description: Cumulative Reduced Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Eight Mile Road	Lower Sacramento to Davis	56,214	85		15	2	1	45	100	
2	Eight Mile Road	Lower Sacramento to West	76,204	85		15	2	1	45	100	
3	Eight Mile Road	West to Micke Grove / Holman	61,042	85		15	2	1	45	100	
4	West Lane	Eight Mile to Ham	36,080	85		15	2	1	50	100	
5	West Lane	Morada to Eight Mile	43,564	85		15	2	1	50	100	
6	West Lane	Morada to Knickerbocker	56,880	85		15	2	1	50	100	
7	Morada Lane	West of West Lane	25,998	85		15	2	1	45	100	
8	Morada Lane	East of West Lane	19,568	85		15	2	1	45	100	
9	SR 99	Eight Mile to Armstrong	151,960	72		28	4	9	65	100	
10	SR 99	Eight Mile to Morada	179,278	72		28	4	9	65	100	
11	SR 99	Morada to Hammer	199,702	72		28	4	9	65	100	
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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2016-116 Tra Vigne
Description: Cumulative Reduced Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Eight Mile Road	Lower Sacramento to Davis	69.0	60.4	61.9	70
2	Eight Mile Road	Lower Sacramento to West	70.3	61.7	63.2	72
3	Eight Mile Road	West to Micke Grove / Holman	69.3	60.7	62.2	71
4	West Lane	Eight Mile to Ham	68.4	59.2	60.4	69
5	West Lane	Morada to Eight Mile	69.2	60.0	61.2	70
6	West Lane	Morada to Knickerbocker	70.3	61.1	62.3	71
7	Morada Lane	West of West Lane	65.6	57.0	58.5	67
8	Morada Lane	East of West Lane	64.4	55.8	57.3	66
9	SR 99	Eight Mile to Armstrong	79.2	71.9	78.9	82
10	SR 99	Eight Mile to Morada	79.9	72.7	79.7	83
11	SR 99	Morada to Hammer	80.4	73.1	80.1	84

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2016-116 Tra Vigne
Description: Cumulative Reduced Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	Eight Mile Road	Lower Sacramento to Davis	48	103	223	480	1035
2	Eight Mile Road	Lower Sacramento to West	59	127	273	588	1268
3	Eight Mile Road	West to Micke Grove / Holman	51	109	236	507	1093
4	West Lane	Eight Mile to Ham	43	92	198	426	917
5	West Lane	Morada to Eight Mile	48	104	224	483	1040
6	West Lane	Morada to Knickerbocker	58	124	268	576	1242
7	Morada Lane	West of West Lane	29	62	133	287	619
8	Morada Lane	East of West Lane	24	51	110	238	512
9	SR 99	Eight Mile to Armstrong	315	679	1462	3150	6787
10	SR 99	Eight Mile to Morada	352	758	1633	3517	7578
11	SR 99	Morada to Hammer	378	814	1754	3780	8143

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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2016-116 Tra Vigne
Description: Cumulative Reduced Intensity
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Eight Mile Road	Lower Sacramento to Davis	56,356	85		15	2	1	45	100	
2	Eight Mile Road	Lower Sacramento to West	76,436	85		15	2	1	45	100	
3	Eight Mile Road	West to Micke Grove / Holman	61,448	85		15	2	1	45	100	
4	West Lane	Eight Mile to Ham	36,140	85		15	2	1	50	100	
5	West Lane	Morada to Eight Mile	44,032	85		15	2	1	50	100	
6	West Lane	Morada to Knickerbocker	57,240	85		15	2	1	50	100	
7	Morada Lane	West of West Lane	26,024	85		15	2	1	45	100	
8	Morada Lane	East of West Lane	19,652	85		15	2	1	45	100	
9	SR 99	Eight Mile to Armstrong	152,010	72		28	4	9	65	100	
10	SR 99	Eight Mile to Morada	179,400	72		28	4	9	65	100	
11	SR 99	Morada to Hammer	199,868	72		28	4	9	65	100	
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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2016-116 Tra Vigne
Description: Cumulative Reduced Intensity
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Eight Mile Road	Lower Sacramento to Davis	69.0	60.4	61.9	70
2	Eight Mile Road	Lower Sacramento to West	70.3	61.7	63.2	72
3	Eight Mile Road	West to Micke Grove / Holman	69.4	60.8	62.2	71
4	West Lane	Eight Mile to Ham	68.4	59.2	60.4	69
5	West Lane	Morada to Eight Mile	69.2	60.0	61.2	70
6	West Lane	Morada to Knickerbocker	70.4	61.2	62.4	71
7	Morada Lane	West of West Lane	65.6	57.0	58.5	67
8	Morada Lane	East of West Lane	64.4	55.8	57.3	66
9	SR 99	Eight Mile to Armstrong	79.2	71.9	78.9	82
10	SR 99	Eight Mile to Morada	79.9	72.7	79.7	83
11	SR 99	Morada to Hammer	80.4	73.1	80.1	84

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2016-116 Tra Vigne
Description: Cumulative Reduced Intensity
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	Eight Mile Road	Lower Sacramento to Davis	48	104	223	481	1037
2	Eight Mile Road	Lower Sacramento to West	59	127	274	590	1270
3	Eight Mile Road	West to Micke Grove / Holman	51	110	237	510	1098
4	West Lane	Eight Mile to Ham	43	92	198	426	918
5	West Lane	Morada to Eight Mile	49	105	226	486	1047
6	West Lane	Morada to Knickerbocker	58	125	269	579	1247
7	Morada Lane	West of West Lane	29	62	133	287	619
8	Morada Lane	East of West Lane	24	51	111	238	514
9	SR 99	Eight Mile to Armstrong	315	679	1463	3151	6789
10	SR 99	Eight Mile to Morada	352	758	1633	3519	7581
11	SR 99	Morada to Hammer	378	815	1755	3782	8148

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Appendix K

Traffic Data

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	383	776	558	875	0	0	0	0	46	1	118
Future Volume (veh/h)	0	383	776	558	875	0	0	0	0	46	1	118
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	416	843	607	951	0				51	0	0
Adj No. of Lanes	0	2	2	2	2	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1395	1186	1416	2991	0				145	0	65
Arrive On Green	0.00	0.37	0.37	0.82	1.00	0.00				0.04	0.00	0.00
Sat Flow, veh/h	0	3725	3167	3442	3632	0				3548	0	1583
Grp Volume(v), veh/h	0	416	843	607	951	0				51	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	6.8	19.5	4.2	0.0	0.0				1.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	6.8	19.5	4.2	0.0	0.0				1.2	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1395	1186	1416	2991	0				145	0	65
V/C Ratio(X)	0.00	0.30	0.71	0.43	0.32	0.00				0.35	0.00	0.00
Avail Cap(c_a), veh/h	0	1395	1186	1416	2991	0				743	0	331
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.87	0.87	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	18.9	22.9	4.9	0.0	0.0				40.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.5	3.6	0.2	0.2	0.0				1.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.6	9.0	1.9	0.1	0.0				0.6	0.0	0.0
LnGrp Delay(d),s/veh	0.0	19.5	26.6	5.0	0.2	0.0				41.6	0.0	0.0
LnGrp LOS		B	C	A	A					D		
Approach Vol, veh/h		1259			1558						51	
Approach Delay, s/veh		24.2			2.1						41.6	
Approach LOS		C			A						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			40.5	37.3		8.2		77.8
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			21.3	* 32		18.0		58.2
Max Q Clear Time (g_c+I1), s			6.2	21.5		3.2		2.0
Green Ext Time (p_c), s			8.1	4.9		0.1		13.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.5
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	338	0	0	904	118	539	3	294	0	0	0
Future Volume (veh/h)	87	338	0	0	904	118	539	3	294	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	95	367	0	0	983	128	588	0	0			
Adj No. of Lanes	1	2	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	549	2412	0	0	1811	233	726	0	324			
Arrive On Green	0.10	0.22	0.00	0.00	0.31	0.31	0.20	0.00	0.00			
Sat Flow, veh/h	1774	3632	0	0	6052	746	3548	0	1583			
Grp Volume(v), veh/h	95	367	0	0	814	297	588	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1602	1731	1774	0	1583			
Q Serve(g_s), s	4.2	7.2	0.0	0.0	12.1	12.2	13.6	0.0	0.0			
Cycle Q Clear(g_c), s	4.2	7.2	0.0	0.0	12.1	12.2	13.6	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.43	1.00		1.00			
Lane Grp Cap(c), veh/h	549	2412	0	0	1503	541	726	0	324			
V/C Ratio(X)	0.17	0.15	0.00	0.00	0.54	0.55	0.81	0.00	0.00			
Avail Cap(c_a), veh/h	549	2412	0	0	1503	541	1291	0	576			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.90	0.90	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	28.6	13.4	0.0	0.0	24.4	24.5	32.6	0.0	0.0			
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	1.4	4.0	2.2	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.1	3.5	0.0	0.0	5.5	6.5	6.8	0.0	0.0			
LnGrp Delay(d),s/veh	28.7	13.5	0.0	0.0	25.9	28.5	34.8	0.0	0.0			
LnGrp LOS	C	B			C	C	C					
Approach Vol, veh/h		462			1111			588				
Approach Delay, s/veh		16.6			26.6			34.8				
Approach LOS		B			C			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		22.3		63.7			31.7	32.0
Change Period (Y+Rc), s		* 4.7		5.1			5.1	* 5.1
Max Green Setting (Gmax), s		* 31		44.9			13.3	* 27
Max Q Clear Time (g_c+I1), s		15.6		9.2			6.2	14.2
Green Ext Time (p_c), s		2.0		2.9			1.5	6.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.7
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	43.8
Intersection LOS	E

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	6	294	232	0	127	305	12	0	145	21	156
Future Vol, veh/h	0	6	294	232	0	127	305	12	0	145	21	156
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	7	320	252	0	138	332	13	0	158	23	170
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	60.1	41.6	23.7
HCM LOS	F	E	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	45%	1%	29%	27%
Vol Thru, %	7%	55%	69%	56%
Vol Right, %	48%	44%	3%	17%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	322	532	444	41
LT Vol	145	6	127	11
Through Vol	21	294	305	23
RT Vol	156	232	12	7
Lane Flow Rate	350	578	483	45
Geometry Grp	1	1	1	1
Degree of Util (X)	0.678	0.991	0.885	0.107
Departure Headway (Hd)	6.973	6.172	6.605	8.645
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	515	584	545	417
Service Time	5.066	4.259	4.7	6.645
HCM Lane V/C Ratio	0.68	0.99	0.886	0.108
HCM Control Delay	23.7	60.1	41.6	12.7
HCM Lane LOS	C	F	E	B
HCM 95th-tile Q	5.1	14.3	10	0.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	11	23	7
Future Vol, veh/h	0	11	23	7
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	12	25	8
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	12.7
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	16.8
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	23	106	329	0	66	234	7	0	158	34	25	0	4	30	51
Future Vol, veh/h	0	23	106	329	0	66	234	7	0	158	34	25	0	4	30	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	25	115	358	0	72	254	8	0	172	37	27	0	4	33	55
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	20	15.5	14.1	10.8
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	73%	5%	21%	5%
Vol Thru, %	16%	23%	76%	35%
Vol Right, %	12%	72%	2%	60%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	217	458	307	85
LT Vol	158	23	66	4
Through Vol	34	106	234	30
RT Vol	25	329	7	51
Lane Flow Rate	236	498	334	92
Geometry Grp	1	1	1	1
Degree of Util (X)	0.418	0.71	0.536	0.166
Departure Headway (Hd)	6.382	5.136	5.785	6.482
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	559	697	617	557
Service Time	4.482	3.222	3.881	4.482
HCM Lane V/C Ratio	0.422	0.714	0.541	0.165
HCM Control Delay	14.1	20	15.5	10.8
HCM Lane LOS	B	C	C	B
HCM 95th-tile Q	2.1	5.9	3.2	0.6

Intersection	
Int Delay, s/veh	6.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	12	239	86	1	292	88
Future Vol, veh/h	12	239	86	1	292	88
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	260	93	1	317	96

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	824	94	0	0	95	0
Stage 1	94	-	-	-	-	-
Stage 2	730	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	343	963	-	-	1499	-
Stage 1	930	-	-	-	-	-
Stage 2	477	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	267	963	-	-	1499	-
Mov Cap-2 Maneuver	267	-	-	-	-	-
Stage 1	930	-	-	-	-	-
Stage 2	371	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	6.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1011	1499	-
HCM Lane V/C Ratio	-	-	0.27	0.212	-
HCM Control Delay (s)	-	-	9.9	8	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	1.1	0.8	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	80	42	127	134	251	178
Future Vol, veh/h	80	42	127	134	251	178
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	Free
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	87	46	138	146	273	193

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	695	-	273	0	-	0
Stage 1	273	-	-	-	-	-
Stage 2	422	-	-	-	-	-
Critical Hdwy	6.42	-	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	2.218	-	-	-
Pot Cap-1 Maneuver	408	0	1290	-	-	0
Stage 1	773	0	-	-	-	0
Stage 2	662	0	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	361	-	1290	-	-	-
Mov Cap-2 Maneuver	361	-	-	-	-	-
Stage 1	773	-	-	-	-	-
Stage 2	585	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.1	4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	1290	-	361	-	-
HCM Lane V/C Ratio	0.107	-	0.241	-	-
HCM Control Delay (s)	8.1	0	18.1	0	-
HCM Lane LOS	A	A	C	A	-
HCM 95th %tile Q(veh)	0.4	-	0.9	-	-

Intersection	
Int Delay, s/veh	8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	235	16	52	657	26	42
Future Vol, veh/h	235	16	52	657	26	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	255	17	57	714	28	46

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	159	57	0	-	57	0
Stage 1	57	-	-	-	-	-
Stage 2	102	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	832	1009	-	0	1547	-
Stage 1	966	-	-	0	-	-
Stage 2	922	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	816	1009	-	-	1547	-
Mov Cap-2 Maneuver	816	-	-	-	-	-
Stage 1	966	-	-	-	-	-
Stage 2	904	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	2.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	SBL	SBT
Capacity (veh/h)	-	872	1547	-
HCM Lane V/C Ratio	-	0.313	0.018	-
HCM Control Delay (s)	-	11	7.4	0
HCM Lane LOS	-	B	A	A
HCM 95th %tile Q(veh)	-	1.3	0.1	-

Intersection	
Int Delay, s/veh	6.8

Movement	SET	SER	NWL	NWT	NEL	NER
Traffic Vol, veh/h	426	2	192	376	79	178
Future Vol, veh/h	426	2	192	376	79	178
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	463	2	209	409	86	193

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	465	0	1290	464
Stage 1	-	-	-	-	464	-
Stage 2	-	-	-	-	826	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1096	-	180	598
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	430	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1096	-	136	598
Mov Cap-2 Maneuver	-	-	-	-	136	-
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	324	-

Approach	SE	NW	NE
HCM Control Delay, s	0	3.1	26.1
HCM LOS			D

Minor Lane/Major Mvmt	NEL n1	NWL	NWT	SET	SER
Capacity (veh/h)	442	1096	-	-	-
HCM Lane V/C Ratio	0.632	0.19	-	-	-
HCM Control Delay (s)	26.1	9.1	0	-	-
HCM Lane LOS	D	A	A	-	-
HCM 95th %tile Q(veh)	4.3	0.7	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	425	507	11	22	485	216	6	14	63	36	12	210
Future Volume (veh/h)	425	507	11	22	485	216	6	14	63	36	12	210
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	462	551	12	24	527	0	7	15	68	39	13	228
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	505	1130	25	46	675	0	56	61	213	265	78	276
Arrive On Green	0.28	0.62	0.62	0.03	0.36	0.00	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1774	1816	40	1774	1863	0	46	349	1222	1076	447	1583
Grp Volume(v), veh/h	462	0	563	24	527	0	90	0	0	52	0	228
Grp Sat Flow(s),veh/h/ln	1774	0	1856	1774	1863	0	1617	0	0	1522	0	1583
Q Serve(g_s), s	20.4	0.0	13.3	1.1	20.4	0.0	0.0	0.0	0.0	0.0	0.0	11.2
Cycle Q Clear(g_c), s	20.4	0.0	13.3	1.1	20.4	0.0	3.9	0.0	0.0	2.0	0.0	11.2
Prop In Lane	1.00		0.02	1.00		0.00	0.08		0.76	0.75		1.00
Lane Grp Cap(c), veh/h	505	0	1155	46	675	0	330	0	0	343	0	276
V/C Ratio(X)	0.92	0.00	0.49	0.53	0.78	0.00	0.27	0.00	0.00	0.15	0.00	0.83
Avail Cap(c_a), veh/h	577	0	1392	123	919	0	431	0	0	434	0	378
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.0	0.0	8.3	38.9	22.9	0.0	29.2	0.0	0.0	28.4	0.0	32.2
Incr Delay (d2), s/veh	18.1	0.0	0.3	9.0	3.1	0.0	0.4	0.0	0.0	0.2	0.0	10.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.4	0.0	6.8	0.6	11.0	0.0	1.8	0.0	0.0	1.0	0.0	5.7
LnGrp Delay(d),s/veh	46.1	0.0	8.6	48.0	26.0	0.0	29.6	0.0	0.0	28.6	0.0	42.7
LnGrp LOS	D		A	D	C		C			C		D
Approach Vol, veh/h		1025			551			90			280	
Approach Delay, s/veh		25.5			27.0			29.6			40.1	
Approach LOS		C			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		18.8	6.7	55.4		18.8	27.7	34.4
Change Period (Y+Rc), s		* 4.7	4.6	5.1		* 4.7	* 4.7	5.1
Max Green Setting (Gmax), s		* 19	5.6	60.7		* 19	* 26	39.9
Max Q Clear Time (g_c+I1), s		5.9	3.1	15.3		13.2	22.4	22.4
Green Ext Time (p_c), s		1.3	0.0	9.3		0.8	0.6	7.0

Intersection Summary	
HCM 2010 Ctrl Delay	28.2
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	55.5
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	457	123	31	0	37	196	35	0	32	73	39	0	46	48	516
Future Vol, veh/h	0	457	123	31	0	37	196	35	0	32	73	39	0	46	48	516
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	497	134	34	0	40	213	38	0	35	79	42	0	50	52	561
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	68.6	24	16.5	65.5
HCM LOS	F	C	C	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	75%	14%	8%
Vol Thru, %	51%	20%	73%	8%
Vol Right, %	27%	5%	13%	85%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	144	611	268	610
LT Vol	32	457	37	46
Through Vol	73	123	196	48
RT Vol	39	31	35	516
Lane Flow Rate	157	664	291	663
Geometry Grp	1	1	1	1
Degree of Util (X)	0.37	1	0.639	1
Departure Headway (Hd)	8.507	7.411	7.896	6.799
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	423	491	457	530
Service Time	6.575	5.493	5.943	4.881
HCM Lane V/C Ratio	0.371	1.352	0.637	1.251
HCM Control Delay	16.5	68.6	24	65.5
HCM Lane LOS	C	F	C	F
HCM 95th-tile Q	1.7	13.4	4.4	14

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	577	733	299	1304	0	0	0	0	158	1	170
Future Volume (veh/h)	0	577	733	299	1304	0	0	0	0	158	1	170
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	627	797	325	1417	0				173	0	0
Adj No. of Lanes	0	2	2	2	2	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1578	1342	1044	2810	0				273	0	122
Arrive On Green	0.00	0.42	0.42	0.20	0.53	0.00				0.08	0.00	0.00
Sat Flow, veh/h	0	3725	3167	3442	3632	0				3548	0	1583
Grp Volume(v), veh/h	0	627	797	325	1417	0				173	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	8.9	14.7	6.1	19.5	0.0				3.6	0.0	0.0
Cycle Q Clear(g_c), s	0.0	8.9	14.7	6.1	19.5	0.0				3.6	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1578	1342	1044	2810	0				273	0	122
V/C Ratio(X)	0.00	0.40	0.59	0.31	0.50	0.00				0.63	0.00	0.00
Avail Cap(c_a), veh/h	0	1578	1342	1044	2810	0				840	0	375
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.83	0.83	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	15.2	16.9	23.5	8.2	0.0				34.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	1.9	0.1	0.5	0.0				2.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.7	6.8	2.9	9.6	0.0				1.8	0.0	0.0
LnGrp Delay(d),s/veh	0.0	15.9	18.8	23.7	8.8	0.0				36.4	0.0	0.0
LnGrp LOS		B	B	C	A					D		
Approach Vol, veh/h		1424			1742						173	
Approach Delay, s/veh		17.5			11.5						36.4	
Approach LOS		B			B						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			28.1	37.3		10.6		65.4
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			11.3	* 32		18.0		48.2
Max Q Clear Time (g_c+I1), s			8.1	16.7		5.6		21.5
Green Ext Time (p_c), s			2.6	7.1		0.4		14.5

Intersection Summary	
HCM 2010 Ctrl Delay	15.4
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	613	0	0	757	67	844	0	561	0	0	0
Future Volume (veh/h)	127	613	0	0	757	67	844	0	561	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	138	666	0	0	823	73	917	0	0			
Adj No. of Lanes	1	2	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	173	1998	0	0	2449	215	1088	0	485			
Arrive On Green	0.13	0.75	0.00	0.00	0.41	0.41	0.31	0.00	0.00			
Sat Flow, veh/h	1774	3632	0	0	6306	530	3548	0	1583			
Grp Volume(v), veh/h	138	666	0	0	652	244	917	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1602	1769	1774	0	1583			
Q Serve(g_s), s	5.7	4.8	0.0	0.0	7.1	7.2	18.4	0.0	0.0			
Cycle Q Clear(g_c), s	5.7	4.8	0.0	0.0	7.1	7.2	18.4	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.30	1.00		1.00			
Lane Grp Cap(c), veh/h	173	1998	0	0	1947	717	1088	0	485			
V/C Ratio(X)	0.80	0.33	0.00	0.00	0.34	0.34	0.84	0.00	0.00			
Avail Cap(c_a), veh/h	264	1998	0	0	1947	717	1461	0	652			
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.87	0.87	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	32.3	4.7	0.0	0.0	15.6	15.6	24.6	0.0	0.0			
Incr Delay (d2), s/veh	8.3	0.4	0.0	0.0	0.5	1.3	3.5	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.2	2.3	0.0	0.0	3.2	3.8	9.4	0.0	0.0			
LnGrp Delay(d),s/veh	40.6	5.1	0.0	0.0	16.0	16.9	28.2	0.0	0.0			
LnGrp LOS	D	A			B	B	C					
Approach Vol, veh/h		804			896			917				
Approach Delay, s/veh		11.2			16.3			28.2				
Approach LOS		B			B			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		28.0		48.0			12.1	35.9
Change Period (Y+Rc), s		* 4.7		5.1			* 4.7	5.1
Max Green Setting (Gmax), s		* 31		34.9			* 11	18.9
Max Q Clear Time (g_c+I1), s		20.4		6.8			7.7	9.2
Green Ext Time (p_c), s		2.9		13.0			0.1	6.5

Intersection Summary	
HCM 2010 Ctrl Delay	18.9
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	54.1
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	3	319	203	0	99	390	18	0	180	17	135
Future Vol, veh/h	0	3	319	203	0	99	390	18	0	180	17	135
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	3	347	221	0	108	424	20	0	196	18	147
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	64.5	65.8	28.2
HCM LOS	F	F	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	54%	1%	20%	25%
Vol Thru, %	5%	61%	77%	62%
Vol Right, %	41%	39%	4%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	332	525	507	71
LT Vol	180	3	99	18
Through Vol	17	319	390	44
RT Vol	135	203	18	9
Lane Flow Rate	361	571	551	77
Geometry Grp	1	1	1	1
Degree of Util (X)	0.734	1	1	0.191
Departure Headway (Hd)	7.323	6.668	6.917	8.915
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	491	548	529	405
Service Time	5.392	4.678	4.927	6.915
HCM Lane V/C Ratio	0.735	1.042	1.042	0.19
HCM Control Delay	28.2	64.5	65.8	14
HCM Lane LOS	D	F	F	B
HCM 95th-tile Q	6	14.2	14	0.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	18	44	9
Future Vol, veh/h	0	18	44	9
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	20	48	10
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	14
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	32.3
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	22	209	240	0	47	193	7	0	290	49	77	0	9	30	48
Future Vol, veh/h	0	22	209	240	0	47	193	7	0	290	49	77	0	9	30	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	24	227	261	0	51	210	8	0	315	53	84	0	10	33	52
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	39.9	18.1	36.1	12.6
HCM LOS	E	C	E	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	70%	5%	19%	10%
Vol Thru, %	12%	44%	78%	34%
Vol Right, %	19%	51%	3%	55%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	416	471	247	87
LT Vol	290	22	47	9
Through Vol	49	209	193	30
RT Vol	77	240	7	48
Lane Flow Rate	452	512	268	95
Geometry Grp	1	1	1	1
Degree of Util (X)	0.841	0.885	0.534	0.201
Departure Headway (Hd)	6.802	6.331	7.155	7.651
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	538	579	507	471
Service Time	4.802	4.331	5.165	5.67
HCM Lane V/C Ratio	0.84	0.884	0.529	0.202
HCM Control Delay	36.1	39.9	18.1	12.6
HCM Lane LOS	E	E	C	B
HCM 95th-tile Q	8.7	10.2	3.1	0.7

Intersection	
Int Delay, s/veh	6.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	22	265	93	6	214	119
Future Vol, veh/h	22	265	93	6	214	119
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	288	101	7	233	129

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	699	104	0	0	108	0
Stage 1	104	-	-	-	-	-
Stage 2	595	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	406	951	-	-	1483	-
Stage 1	920	-	-	-	-	-
Stage 2	551	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	337	951	-	-	1483	-
Mov Cap-2 Maneuver	337	-	-	-	-	-
Stage 1	920	-	-	-	-	-
Stage 2	458	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	5.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1030	1483	-
HCM Lane V/C Ratio	-	-	0.303	0.157	-
HCM Control Delay (s)	-	-	10	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.3	0.6	-

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	222	42	50	195	170	144
Future Vol, veh/h	222	42	50	195	170	144
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	Free
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	241	46	54	212	185	157

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	506	-	185	0	-	0
Stage 1	185	-	-	-	-	-
Stage 2	321	-	-	-	-	-
Critical Hdwy	6.42	-	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	2.218	-	-	-
Pot Cap-1 Maneuver	526	0	1390	-	-	0
Stage 1	847	0	-	-	-	0
Stage 2	735	0	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	503	-	1390	-	-	-
Mov Cap-2 Maneuver	503	-	-	-	-	-
Stage 1	847	-	-	-	-	-
Stage 2	703	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.6	1.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	1390	-	503	-	-
HCM Lane V/C Ratio	0.039	-	0.48	-	-
HCM Control Delay (s)	7.7	0	18.6	0	-
HCM Lane LOS	A	A	C	A	-
HCM 95th %tile Q(veh)	0.1	-	2.6	-	-

Intersection	
Int Delay, s/veh	9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	310	13	61	242	25	84
Future Vol, veh/h	310	13	61	242	25	84
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	337	14	66	263	27	91

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	212	66	0	-	66	0
Stage 1	66	-	-	-	-	-
Stage 2	146	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	776	998	-	0	1536	-
Stage 1	957	-	-	0	-	-
Stage 2	881	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	761	998	-	-	1536	-
Mov Cap-2 Maneuver	761	-	-	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	864	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.1	0	1.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	SBL	SBT
Capacity (veh/h)	-	793	1536	-
HCM Lane V/C Ratio	-	0.443	0.018	-
HCM Control Delay (s)	-	13.1	7.4	0
HCM Lane LOS	-	B	A	A
HCM 95th %tile Q(veh)	-	2.3	0.1	-

Intersection	
Int Delay, s/veh	8.4

Movement	SET	SER	NWL	NWT	NEL	NER
Traffic Vol, veh/h	225	11	158	186	100	456
Future Vol, veh/h	225	11	158	186	100	456
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	245	12	172	202	109	496

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	257	0	797	251
Stage 1	-	-	-	-	251	-
Stage 2	-	-	-	-	546	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1308	-	356	788
Stage 1	-	-	-	-	791	-
Stage 2	-	-	-	-	580	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1308	-	303	788
Mov Cap-2 Maneuver	-	-	-	-	303	-
Stage 1	-	-	-	-	791	-
Stage 2	-	-	-	-	494	-

Approach	SE	NW	NE
HCM Control Delay, s	0	3.8	14.9
HCM LOS			B

Minor Lane/Major Mvmt	NEL n1	NWL	NWT	SET	SER
Capacity (veh/h)	961	1308	-	-	-
HCM Lane V/C Ratio	0.629	0.131	-	-	-
HCM Control Delay (s)	14.9	8.2	0	-	-
HCM Lane LOS	B	A	A	-	-
HCM 95th %tile Q(veh)	4.6	0.5	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	197	359	21	15	591	90	14	14	41	74	29	296
Future Volume (veh/h)	197	359	21	15	591	90	14	14	41	74	29	296
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	214	390	23	16	642	0	15	15	45	80	32	322
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	257	933	55	34	764	0	104	107	222	330	118	377
Arrive On Green	0.14	0.54	0.54	0.02	0.41	0.00	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1774	1742	103	1774	1863	0	174	448	933	1014	495	1583
Grp Volume(v), veh/h	214	0	413	16	642	0	75	0	0	112	0	322
Grp Sat Flow(s),veh/h/ln	1774	0	1845	1774	1863	0	1555	0	0	1509	0	1583
Q Serve(g_s), s	8.2	0.0	9.3	0.6	21.6	0.0	0.0	0.0	0.0	1.3	0.0	13.5
Cycle Q Clear(g_c), s	8.2	0.0	9.3	0.6	21.6	0.0	2.5	0.0	0.0	3.8	0.0	13.5
Prop In Lane	1.00		0.06	1.00		0.00	0.20		0.60	0.71		1.00
Lane Grp Cap(c), veh/h	257	0	989	34	764	0	432	0	0	448	0	377
V/C Ratio(X)	0.83	0.00	0.42	0.47	0.84	0.00	0.17	0.00	0.00	0.25	0.00	0.85
Avail Cap(c_a), veh/h	291	0	1063	133	907	0	511	0	0	526	0	462
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.9	0.0	9.7	33.8	18.5	0.0	21.1	0.0	0.0	21.6	0.0	25.4
Incr Delay (d2), s/veh	16.8	0.0	0.3	9.8	6.2	0.0	0.2	0.0	0.0	0.3	0.0	12.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	0.0	4.8	0.4	12.4	0.0	1.2	0.0	0.0	1.8	0.0	7.2
LnGrp Delay(d),s/veh	45.7	0.0	9.9	43.6	24.7	0.0	21.3	0.0	0.0	21.8	0.0	37.7
LnGrp LOS	D		A	D	C		C			C		D
Approach Vol, veh/h		627			658			75			434	
Approach Delay, s/veh		22.2			25.1			21.3			33.6	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		21.3	5.9	42.4		21.3	14.7	33.7
Change Period (Y+Rc), s		* 4.7	4.6	5.1		* 4.7	4.6	5.1
Max Green Setting (Gmax), s		* 20	5.2	40.1		* 20	11.4	33.9
Max Q Clear Time (g_c+I1), s		4.5	2.6	11.3		15.5	10.2	23.6
Green Ext Time (p_c), s		2.1	0.0	8.2		1.0	0.1	5.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.0
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	48.1
Intersection LOS	E

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	278	121	62	0	9	104	27	0	37	42	28	0	74	51	561
Future Vol, veh/h	0	278	121	62	0	9	104	27	0	37	42	28	0	74	51	561
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	302	132	67	0	10	113	29	0	40	46	30	0	80	55	610
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	46.9	13.8	13	61.3
HCM LOS	E	B	B	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	35%	60%	6%	11%
Vol Thru, %	39%	26%	74%	7%
Vol Right, %	26%	13%	19%	82%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	107	461	140	686
LT Vol	37	278	9	74
Through Vol	42	121	104	51
RT Vol	28	62	27	561
Lane Flow Rate	116	501	152	746
Geometry Grp	1	1	1	1
Degree of Util (X)	0.243	0.919	0.312	1
Departure Headway (Hd)	7.507	6.604	7.382	6
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	477	551	487	604
Service Time	5.573	4.639	5.438	4.069
HCM Lane V/C Ratio	0.243	0.909	0.312	1.235
HCM Control Delay	13	46.9	13.8	61.3
HCM Lane LOS	B	E	B	F
HCM 95th-tile Q	0.9	11.2	1.3	14.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	932	1140	462	2101	0	0	0	0	26	0	118
Future Volume (veh/h)	0	932	1140	462	2101	0	0	0	0	26	0	118
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	1013	1239	502	2284	0				28	0	0
Adj No. of Lanes	0	2	2	2	2	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1578	1342	1208	2979	0				104	0	46
Arrive On Green	0.00	0.42	0.42	0.70	1.00	0.00				0.03	0.00	0.00
Sat Flow, veh/h	0	3725	3167	3442	3632	0				3548	0	1583
Grp Volume(v), veh/h	0	1013	1239	502	2284	0				28	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	16.4	28.2	4.7	0.0	0.0				0.6	0.0	0.0
Cycle Q Clear(g_c), s	0.0	16.4	28.2	4.7	0.0	0.0				0.6	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1578	1342	1208	2979	0				104	0	46
V/C Ratio(X)	0.00	0.64	0.92	0.42	0.77	0.00				0.27	0.00	0.00
Avail Cap(c_a), veh/h	0	1578	1342	1208	2979	0				840	0	375
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.41	0.41	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	17.3	20.7	8.1	0.0	0.0				36.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.0	12.0	0.1	0.8	0.0				1.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.7	14.5	2.1	0.3	0.0				0.3	0.0	0.0
LnGrp Delay(d),s/veh	0.0	19.4	32.7	8.1	0.8	0.0				37.5	0.0	0.0
LnGrp LOS		B	C	A	A					D		
Approach Vol, veh/h		2252			2786						28	
Approach Delay, s/veh		26.7			2.1						37.5	
Approach LOS		C			A						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			31.8	37.3		6.9		69.1
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			11.3	* 32		18.0		48.2
Max Q Clear Time (g_c+I1), s			6.7	30.2		2.6		2.0
Green Ext Time (p_c), s			4.3	1.8		0.0		36.9

Intersection Summary	
HCM 2010 Ctrl Delay	13.3
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	929	0	0	2332	122	684	2	392	0	0	0
Future Volume (veh/h)	91	929	0	0	2332	122	684	2	392	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	99	1010	0	0	2535	133	744	0	0			
Adj No. of Lanes	1	2	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	185	2231	0	0	2885	151	854	0	381			
Arrive On Green	0.10	0.63	0.00	0.00	0.46	0.46	0.24	0.00	0.00			
Sat Flow, veh/h	1774	3632	0	0	6543	329	3548	0	1583			
Grp Volume(v), veh/h	99	1010	0	0	1937	731	744	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1602	1805	1774	0	1583			
Q Serve(g_s), s	4.0	11.2	0.0	0.0	27.8	28.0	15.3	0.0	0.0			
Cycle Q Clear(g_c), s	4.0	11.2	0.0	0.0	27.8	28.0	15.3	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.18	1.00		1.00			
Lane Grp Cap(c), veh/h	185	2231	0	0	2207	829	854	0	381			
V/C Ratio(X)	0.54	0.45	0.00	0.00	0.88	0.88	0.87	0.00	0.00			
Avail Cap(c_a), veh/h	185	2231	0	0	2207	829	948	0	423			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.70	0.70	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	32.3	7.3	0.0	0.0	18.6	18.7	27.7	0.0	0.0			
Incr Delay (d2), s/veh	2.1	0.5	0.0	0.0	5.3	13.0	8.3	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.1	5.5	0.0	0.0	13.3	16.8	8.4	0.0	0.0			
LnGrp Delay(d),s/veh	34.4	7.7	0.0	0.0	24.0	31.7	36.0	0.0	0.0			
LnGrp LOS	C	A			C	C	D					
Approach Vol, veh/h		1109			2668			744				
Approach Delay, s/veh		10.1			26.1			36.0				
Approach LOS		B			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		23.0		53.0			13.0	40.0
Change Period (Y+Rc), s		* 4.7		5.1			5.1	* 5.1
Max Green Setting (Gmax), s		* 20		45.9			6.3	* 35
Max Q Clear Time (g_c+I1), s		17.3		13.2			6.0	30.0
Green Ext Time (p_c), s		1.0		9.2			0.2	4.7

Intersection Summary	
HCM 2010 Ctrl Delay	23.8
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	489	290	149	493	14	179	18	186	13	20	8
Future Volume (veh/h)	7	489	290	149	493	14	179	18	186	13	20	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	8	532	315	162	536	15	195	20	202	14	22	9
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	18	743	631	231	979	832	265	18	437	62	82	21
Arrive On Green	0.01	0.40	0.40	0.13	0.53	0.53	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	631	65	1583	0	297	74
Grp Volume(v), veh/h	8	532	315	162	536	15	215	0	202	45	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	696	0	1583	372	0	0
Q Serve(g_s), s	0.3	18.3	11.3	6.6	14.6	0.3	0.0	0.0	8.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	18.3	11.3	6.6	14.6	0.3	21.0	0.0	8.0	21.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.91		1.00	0.31		0.20
Lane Grp Cap(c), veh/h	18	743	631	231	979	832	283	0	437	165	0	0
V/C Ratio(X)	0.44	0.72	0.50	0.70	0.55	0.02	0.76	0.00	0.46	0.27	0.00	0.00
Avail Cap(c_a), veh/h	117	743	631	243	979	832	283	0	437	165	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.93	0.93	0.93	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	37.4	19.2	17.2	31.6	12.0	8.6	28.6	0.0	22.8	22.2	0.0	0.0
Incr Delay (d2), s/veh	15.9	5.9	2.8	7.7	2.1	0.0	11.4	0.0	0.8	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	10.5	5.4	3.7	8.0	0.2	5.4	0.0	3.6	0.7	0.0	0.0
LnGrp Delay(d),s/veh	53.3	25.1	20.0	39.4	14.1	8.7	40.0	0.0	23.6	23.1	0.0	0.0
LnGrp LOS	D	C	B	D	B	A	D		C	C		
Approach Vol, veh/h		855			713			417			45	
Approach Delay, s/veh		23.5			19.7			32.1			23.1	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		25.6	15.0	35.4		25.6	5.4	45.0
Change Period (Y+Rc), s		4.6	5.1	* 5.1		4.6	4.6	5.1
Max Green Setting (Gmax), s		21.0	10.4	* 30		21.0	5.0	35.7
Max Q Clear Time (g_c+I1), s		23.0	8.6	20.3		23.0	2.3	16.6
Green Ext Time (p_c), s		0.0	0.2	3.4		0.0	0.0	3.9

Intersection Summary	
HCM 2010 Ctrl Delay	23.9
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	179	441	50	385	7	207	26	19	3	19	69
Future Volume (veh/h)	38	179	441	50	385	7	207	26	19	3	19	69
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	41	195	479	54	418	8	225	28	21	3	21	75
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	831	706	79	757	644	89	0	506	53	275	506
Arrive On Green	0.13	0.74	0.74	0.04	0.41	0.41	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	0	0	1583	0	861	1583
Grp Volume(v), veh/h	41	195	479	54	418	8	253	0	21	24	0	75
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	0	0	1583	861	0	1583
Q Serve(g_s), s	1.6	2.5	11.9	2.3	13.0	0.2	0.0	0.0	0.7	0.0	0.0	2.6
Cycle Q Clear(g_c), s	1.6	2.5	11.9	2.3	13.0	0.2	24.3	0.0	0.7	24.3	0.0	2.6
Prop In Lane	1.00		1.00	1.00		1.00	0.89		1.00	0.12		1.00
Lane Grp Cap(c), veh/h	138	831	706	79	757	644	89	0	506	329	0	506
V/C Ratio(X)	0.30	0.23	0.68	0.68	0.55	0.01	2.83	0.00	0.04	0.07	0.00	0.15
Avail Cap(c_a), veh/h	149	831	706	154	757	644	89	0	506	329	0	506
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.80	0.80	0.80	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.2	5.7	6.9	35.8	17.3	13.4	38.0	0.0	17.8	18.9	0.0	18.5
Incr Delay (d2), s/veh	1.0	0.5	4.2	9.8	2.9	0.0	852.2	0.0	0.0	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.3	5.8	1.3	7.2	0.1	23.0	0.0	0.3	0.4	0.0	1.1
LnGrp Delay(d),s/veh	32.2	6.2	11.1	45.5	20.1	13.5	890.2	0.0	17.9	19.0	0.0	18.6
LnGrp LOS	C	A	B	D	C	B	F		B	B		B
Approach Vol, veh/h		715			480			274			99	
Approach Delay, s/veh		11.0			22.9			823.3			18.7	
Approach LOS		B			C			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		29.0	8.0	39.0		29.0	11.0	36.0
Change Period (Y+Rc), s		* 4.7	4.6	5.1		* 4.7	5.1	* 5.1
Max Green Setting (Gmax), s		* 24	6.6	30.7		* 24	6.4	* 31
Max Q Clear Time (g_c+I1), s		26.3	4.3	13.9		26.3	3.6	15.0
Green Ext Time (p_c), s		0.0	0.0	2.9		0.0	0.8	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	157.1
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	14	287	103	1	350	106
Future Vol, veh/h	14	287	103	1	350	106
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	312	112	1	380	115

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	988	112	0	0	113	0
Stage 1	112	-	-	-	-	-
Stage 2	876	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	274	941	-	-	1476	-
Stage 1	913	-	-	-	-	-
Stage 2	407	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	199	941	-	-	1476	-
Mov Cap-2 Maneuver	199	-	-	-	-	-
Stage 1	913	-	-	-	-	-
Stage 2	295	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	6.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	987	1476	-
HCM Lane V/C Ratio	-	-	0.331	0.258	-
HCM Control Delay (s)	-	-	10.4	8.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.5	1	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	96	50	152	197	301	214
Future Vol, veh/h	96	50	152	197	301	214
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	Free
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	104	54	165	214	327	233

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	872	-	327	0	-	0
Stage 1	327	-	-	-	-	-
Stage 2	545	-	-	-	-	-
Critical Hdwy	6.42	-	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	2.218	-	-	-
Pot Cap-1 Maneuver	321	0	1233	-	-	0
Stage 1	731	0	-	-	-	0
Stage 2	581	0	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	272	-	1233	-	-	-
Mov Cap-2 Maneuver	272	-	-	-	-	-
Stage 1	731	-	-	-	-	-
Stage 2	493	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	26.2	3.6	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	1233	-	272	-	-
HCM Lane V/C Ratio	0.134	-	0.384	-	-
HCM Control Delay (s)	8.4	0	26.2	0	-
HCM Lane LOS	A	A	D	A	-
HCM 95th %tile Q(veh)	0.5	-	1.7	-	-

Intersection	
Int Delay, s/veh	8.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	282	19	62	788	31	50
Future Vol, veh/h	282	19	62	788	31	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	307	21	67	857	34	54

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	189	67	0	-	67	0
Stage 1	67	-	-	-	-	-
Stage 2	122	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	800	997	-	0	1535	-
Stage 1	956	-	-	0	-	-
Stage 2	903	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	782	997	-	-	1535	-
Mov Cap-2 Maneuver	782	-	-	-	-	-
Stage 1	956	-	-	-	-	-
Stage 2	882	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.1	0	2.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	SBL	SBT
Capacity (veh/h)	-	835	1535	-
HCM Lane V/C Ratio	-	0.392	0.022	-
HCM Control Delay (s)	-	12.1	7.4	0
HCM Lane LOS	-	B	A	A
HCM 95th %tile Q(veh)	-	1.9	0.1	-

Intersection	
Int Delay, s/veh	37.6

Movement	SET	SER	NWL	NWT	NEL	NER
Traffic Vol, veh/h	511	2	230	451	95	214
Future Vol, veh/h	511	2	230	451	95	214
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	555	2	250	490	103	233

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	558	0	1547	557
Stage 1	-	-	-	-	557	-
Stage 2	-	-	-	-	990	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1013	-	126	530
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	360	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1013	-	~ 83	530
Mov Cap-2 Maneuver	-	-	-	-	~ 83	-
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	238	-

Approach	SE	NW	NE
HCM Control Delay, s	0	3.3	175.6
HCM LOS			F

Minor Lane/Major Mvmt	NEL n1	NWL	NWT	SET	SER
Capacity (veh/h)	270	1013	-	-	-
HCM Lane V/C Ratio	1.244	0.247	-	-	-
HCM Control Delay (s)	175.6	9.7	0	-	-
HCM Lane LOS	F	A	A	-	-
HCM 95th %tile Q(veh)	16.1	1	-	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	496	560	10	22	520	275	5	15	64	49	13	253
Future Volume (veh/h)	496	560	10	22	520	275	5	15	64	49	13	253
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	539	609	11	24	565	0	5	16	70	53	14	275
Adj No. of Lanes	1	1	0	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	570	1245	22	80	764	650	37	91	236	54	8	236
Arrive On Green	0.32	0.68	0.68	0.09	0.82	0.00	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1774	1824	33	1774	1863	1583	0	608	1583	0	55	1583
Grp Volume(v), veh/h	539	0	620	24	565	0	21	0	70	67	0	275
Grp Sat Flow(s),veh/h/ln	1774	0	1857	1774	1863	1583	608	0	1583	55	0	1583
Q Serve(g_s), s	35.5	0.0	19.1	1.5	16.6	0.0	0.0	0.0	4.7	0.0	0.0	17.9
Cycle Q Clear(g_c), s	35.5	0.0	19.1	1.5	16.6	0.0	17.9	0.0	4.7	17.9	0.0	17.9
Prop In Lane	1.00		0.02	1.00		1.00	0.24		1.00	0.79		1.00
Lane Grp Cap(c), veh/h	570	0	1267	80	764	650	128	0	236	62	0	236
V/C Ratio(X)	0.95	0.00	0.49	0.30	0.74	0.00	0.16	0.00	0.30	1.08	0.00	1.16
Avail Cap(c_a), veh/h	642	0	1267	87	764	650	128	0	236	62	0	236
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.93	0.93	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.7	0.0	9.1	52.8	7.8	0.0	44.5	0.0	45.4	57.7	0.0	51.0
Incr Delay (d2), s/veh	21.7	0.0	1.4	1.9	5.9	0.0	0.6	0.0	0.7	138.8	0.0	110.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.8	0.0	10.1	0.8	9.1	0.0	0.6	0.0	2.1	4.4	0.0	15.0
LnGrp Delay(d),s/veh	61.4	0.0	10.4	54.8	13.8	0.0	45.1	0.0	46.1	198.3	0.0	161.2
LnGrp LOS	F		B	D	B		D		D	F		F
Approach Vol, veh/h		1159			589			91			342	
Approach Delay, s/veh		34.1			15.4			45.9			168.5	
Approach LOS		C			B			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		22.5	10.5	87.0		22.5	43.2	54.3
Change Period (Y+Rc), s		4.6	5.1	* 5.1		4.6	4.6	5.1
Max Green Setting (Gmax), s		17.9	5.9	* 82		17.9	43.4	44.4
Max Q Clear Time (g_c+I1), s		19.9	3.5	21.1		19.9	37.5	18.6
Green Ext Time (p_c), s		0.0	0.0	5.0		0.0	1.0	4.1

Intersection Summary	
HCM 2010 Ctrl Delay	50.7
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	535	120	22	38	201	59	23	84	37	73	56	602
Future Volume (veh/h)	535	120	22	38	201	59	23	84	37	73	56	602
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	582	130	24	41	218	64	25	91	40	79	61	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	797	154	28	172	866	240	94	153	61	204	114	0
Arrive On Green	1.00	1.00	1.00	0.70	0.70	0.70	0.14	0.14	0.14	0.14	0.14	0.00
Sat Flow, veh/h	983	220	41	149	1235	342	176	1123	448	813	841	0
Grp Volume(v), veh/h	736	0	0	323	0	0	156	0	0	140	0	0
Grp Sat Flow(s),veh/h/ln	1244	0	0	1726	0	0	1747	0	0	1654	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	3.9	0.0	0.0	4.9	0.0	0.0	4.4	0.0	0.0
Prop In Lane	0.79		0.03	0.13		0.20	0.16		0.26	0.56		0.00
Lane Grp Cap(c), veh/h	979	0	0	1277	0	0	307	0	0	319	0	0
V/C Ratio(X)	0.75	0.00	0.00	0.25	0.00	0.00	0.51	0.00	0.00	0.44	0.00	0.00
Avail Cap(c_a), veh/h	979	0	0	1277	0	0	583	0	0	559	0	0
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	3.3	0.0	0.0	24.5	0.0	0.0	24.3	0.0	0.0
Incr Delay (d2), s/veh	4.9	0.0	0.0	0.5	0.0	0.0	1.3	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	2.1	0.0	0.0	2.5	0.0	0.0	2.3	0.0	0.0
LnGrp Delay(d),s/veh	4.9	0.0	0.0	3.7	0.0	0.0	25.8	0.0	0.0	25.2	0.0	0.0
LnGrp LOS	A			A			C			C		
Approach Vol, veh/h		736			323			156			140	
Approach Delay, s/veh		4.9			3.7			25.8			25.2	
Approach LOS		A			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		12.9		47.1		12.9		47.1
Change Period (Y+Rc), s		* 4.7		5.1		* 4.7		5.1
Max Green Setting (Gmax), s		* 18		32.2		* 18		32.2
Max Q Clear Time (g_c+I1), s		6.9		2.0		6.4		5.9
Green Ext Time (p_c), s		1.3		10.3		1.3		9.8

Intersection Summary	
HCM 2010 Ctrl Delay	9.1
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1552	1079	160	3060	0	0	0	0	91	0	234
Future Volume (veh/h)	0	1552	1079	160	3060	0	0	0	0	91	0	234
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	1583	1243	174	3326	0				99	0	0
Adj No. of Lanes	0	2	2	2	2	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2269	1929	766	3094	0				157	0	70
Arrive On Green	0.00	0.61	0.61	0.44	1.00	0.00				0.04	0.00	0.00
Sat Flow, veh/h	0	3725	3167	3442	3632	0				3548	0	1583
Grp Volume(v), veh/h	0	1583	1243	174	3326	0				99	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	34.7	30.3	3.7	104.9	0.0				3.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	34.7	30.3	3.7	104.9	0.0				3.3	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2269	1929	766	3094	0				157	0	70
V/C Ratio(X)	0.00	0.70	0.64	0.23	1.08	0.00				0.63	0.00	0.00
Avail Cap(c_a), veh/h	0	2269	1929	766	3094	0				571	0	255
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.60	0.60	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	15.9	15.1	26.9	0.0	0.0				56.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.8	1.7	0.1	38.2	0.0				4.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	18.2	13.6	1.8	16.4	0.0				1.7	0.0	0.0
LnGrp Delay(d),s/veh	0.0	17.7	16.8	27.0	38.2	0.0				60.5	0.0	0.0
LnGrp LOS		B	B	C	F					F		
Approach Vol, veh/h		2826			3500						99	
Approach Delay, s/veh		17.3			37.6						60.5	
Approach LOS		B			D						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			31.8	78.2		10.0		110.0
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			13.1	* 73		19.3		90.9
Max Q Clear Time (g_c+I1), s			5.7	36.7		5.3		106.9
Green Ext Time (p_c), s			7.0	27.1		0.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	29.1
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	1713	0	0	1226	56	1229	0	658	0	0	0
Future Volume (veh/h)	137	1713	0	0	1226	56	1229	0	658	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	149	1862	0	0	1333	61	1336	0	0			
Adj No. of Lanes	1	2	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	175	1867	0	0	2467	113	1386	0	619			
Arrive On Green	0.20	1.00	0.00	0.00	0.39	0.39	0.39	0.00	0.00			
Sat Flow, veh/h	1774	3632	0	0	6589	289	3548	0	1583			
Grp Volume(v), veh/h	149	1862	0	0	1012	382	1336	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1602	1812	1774	0	1583			
Q Serve(g_s), s	9.7	0.0	0.0	0.0	19.5	19.6	44.2	0.0	0.0			
Cycle Q Clear(g_c), s	9.7	0.0	0.0	0.0	19.5	19.6	44.2	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.16	1.00		1.00			
Lane Grp Cap(c), veh/h	175	1867	0	0	1874	706	1386	0	619			
V/C Ratio(X)	0.85	1.00	0.00	0.00	0.54	0.54	0.96	0.00	0.00			
Avail Cap(c_a), veh/h	271	1867	0	0	1874	706	1399	0	624			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.59	0.59	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	47.3	0.0	0.0	0.0	28.3	28.3	35.7	0.0	0.0			
Incr Delay (d2), s/veh	9.1	15.3	0.0	0.0	1.1	3.0	16.1	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.2	4.0	0.0	0.0	8.8	10.4	24.6	0.0	0.0			
LnGrp Delay(d),s/veh	56.4	15.3	0.0	0.0	29.4	31.3	51.9	0.0	0.0			
LnGrp LOS	F	B			C	C	D					
Approach Vol, veh/h		2011			1394			1336				
Approach Delay, s/veh		18.4			29.9			51.9				
Approach LOS		B			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		51.6		68.4			16.5	51.9
Change Period (Y+Rc), s		* 4.7		5.1			* 4.7	5.1
Max Green Setting (Gmax), s		* 47		62.9			* 18	39.9
Max Q Clear Time (g_c+I1), s		46.2		2.0			11.7	21.6
Green Ext Time (p_c), s		0.7		50.9			0.2	17.2

Intersection Summary	
HCM 2010 Ctrl Delay	31.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	523	260	116	625	20	227	15	159	21	40	11
Future Volume (veh/h)	4	523	260	116	625	20	227	15	159	21	40	11
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	4	568	283	126	679	22	247	16	173	23	43	12
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	9	753	640	392	1169	993	285	12	475	67	102	19
Arrive On Green	0.01	0.40	0.40	0.07	0.21	0.21	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	618	40	1583	0	341	62
Grp Volume(v), veh/h	4	568	283	126	679	22	263	0	173	78	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	658	0	1583	402	0	0
Q Serve(g_s), s	0.2	18.3	9.1	4.7	23.0	0.8	0.0	0.0	6.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	18.3	9.1	4.7	23.0	0.8	21.0	0.0	6.0	21.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.94		1.00	0.29		0.15
Lane Grp Cap(c), veh/h	9	753	640	392	1169	993	297	0	475	187	0	0
V/C Ratio(X)	0.42	0.75	0.44	0.32	0.58	0.02	0.89	0.00	0.36	0.42	0.00	0.00
Avail Cap(c_a), veh/h	127	753	640	392	1169	993	297	0	475	187	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.90	0.90	0.90	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.7	17.9	15.1	27.5	19.5	10.7	27.1	0.0	19.3	19.8	0.0	0.0
Incr Delay (d2), s/veh	27.1	6.9	2.2	0.4	1.9	0.0	25.6	0.0	0.5	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	10.8	4.3	2.4	12.5	0.3	7.2	0.0	2.7	1.2	0.0	0.0
LnGrp Delay(d),s/veh	61.8	24.8	17.3	27.9	21.4	10.7	52.7	0.0	19.7	21.3	0.0	0.0
LnGrp LOS	E	C	B	C	C	B	D		B	C		
Approach Vol, veh/h		855			827			436			78	
Approach Delay, s/veh		22.5			22.1			39.6			21.3	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		25.6	20.8	33.4		25.6	5.0	49.3
Change Period (Y+Rc), s		4.6	5.1	* 5.1		4.6	4.6	5.1
Max Green Setting (Gmax), s		21.0	6.4	* 28		21.0	5.0	29.7
Max Q Clear Time (g_c+I1), s		23.0	6.7	20.3		23.0	2.2	25.0
Green Ext Time (p_c), s		0.0	0.0	3.0		0.0	0.0	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	25.7
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	361	318	41	327	7	397	42	70	8	22	68
Future Volume (veh/h)	36	361	318	41	327	7	397	42	70	8	22	68
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	39	392	346	45	355	8	432	46	76	9	24	74
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	535	455	114	597	508	98	0	690	65	141	690
Arrive On Green	0.08	0.57	0.57	0.06	0.32	0.32	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	0	0	1583	0	323	1583
Grp Volume(v), veh/h	39	392	346	45	355	8	478	0	76	33	0	74
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	0	0	1583	323	0	1583
Q Serve(g_s), s	1.5	10.8	11.6	1.7	11.2	0.2	0.0	0.0	2.0	0.0	0.0	1.9
Cycle Q Clear(g_c), s	1.5	10.8	11.6	1.7	11.2	0.2	30.5	0.0	2.0	30.5	0.0	1.9
Prop In Lane	1.00		1.00	1.00		1.00	0.90		1.00	0.27		1.00
Lane Grp Cap(c), veh/h	67	535	455	114	597	508	98	0	690	206	0	690
V/C Ratio(X)	0.58	0.73	0.76	0.39	0.59	0.02	4.88	0.00	0.11	0.16	0.00	0.11
Avail Cap(c_a), veh/h	127	535	455	127	597	508	98	0	690	206	0	690
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.77	0.77	0.77	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.8	12.9	13.1	31.4	20.0	16.2	35.0	0.0	11.7	15.9	0.0	11.7
Incr Delay (d2), s/veh	6.0	6.8	9.0	2.2	4.3	0.1	1769.8	0.0	0.1	0.4	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	6.5	5.9	0.9	6.4	0.1	50.0	0.0	0.9	0.4	0.0	0.8
LnGrp Delay(d),s/veh	37.8	19.7	22.1	33.6	24.3	16.3	1804.8	0.0	11.8	16.2	0.0	11.8
LnGrp LOS	D	B	C	C	C	B	F		B	B		B
Approach Vol, veh/h		777			408			554			107	
Approach Delay, s/veh		21.7			25.2			1558.8			13.1	
Approach LOS		C			C			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		35.2	9.6	25.2		35.2	7.3	27.5
Change Period (Y+Rc), s		* 4.7	5.1	* 5.1		* 4.7	4.6	5.1
Max Green Setting (Gmax), s		* 31	5.0	* 20		* 31	5.0	20.1
Max Q Clear Time (g_c+I1), s		32.5	3.7	13.6		32.5	3.5	13.2
Green Ext Time (p_c), s		0.0	0.0	2.1		0.0	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	483.3
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	6.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	26	318	112	7	257	143
Future Vol, veh/h	26	318	112	7	257	143
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	346	122	8	279	155

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	840	126	0	0	129	0
Stage 1	126	-	-	-	-	-
Stage 2	714	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	335	924	-	-	1457	-
Stage 1	900	-	-	-	-	-
Stage 2	485	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	265	924	-	-	1457	-
Mov Cap-2 Maneuver	265	-	-	-	-	-
Stage 1	900	-	-	-	-	-
Stage 2	383	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	5.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1000	1457	-
HCM Lane V/C Ratio	-	-	0.374	0.192	-
HCM Control Delay (s)	-	-	10.7	8.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.8	0.7	-

Intersection	
Int Delay, s/veh	10.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	266	50	60	234	204	173
Future Vol, veh/h	266	50	60	234	204	173
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	Free
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	289	54	65	254	222	188

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	607	-	222	0	-	0
Stage 1	222	-	-	-	-	-
Stage 2	385	-	-	-	-	-
Critical Hdwy	6.42	-	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	2.218	-	-	-
Pot Cap-1 Maneuver	460	0	1347	-	-	0
Stage 1	815	0	-	-	-	0
Stage 2	688	0	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	434	-	1347	-	-	-
Mov Cap-2 Maneuver	434	-	-	-	-	-
Stage 1	815	-	-	-	-	-
Stage 2	649	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28.3	1.6	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	1347	-	434	-	-
HCM Lane V/C Ratio	0.048	-	0.666	-	-
HCM Control Delay (s)	7.8	0	28.3	0	-
HCM Lane LOS	A	A	D	A	-
HCM 95th %tile Q(veh)	0.2	-	4.7	-	-

Intersection	
Int Delay, s/veh	10.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	372	16	73	290	30	101
Future Vol, veh/h	372	16	73	290	30	101
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	404	17	79	315	33	110

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	254	79	0	-	79	0
Stage 1	79	-	-	-	-	-
Stage 2	175	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	735	981	-	0	1519	-
Stage 1	944	-	-	0	-	-
Stage 2	855	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	718	981	-	-	1519	-
Mov Cap-2 Maneuver	718	-	-	-	-	-
Stage 1	944	-	-	-	-	-
Stage 2	835	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.1	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	WBLn1	SBL	SBT
Capacity (veh/h)	-	741	1519	-
HCM Lane V/C Ratio	-	0.569	0.021	-
HCM Control Delay (s)	-	16.1	7.4	0
HCM Lane LOS	-	C	A	A
HCM 95th %tile Q(veh)	-	3.6	0.1	-

Intersection	
Int Delay, s/veh	12.2

Movement	SET	SER	NWL	NWT	NEL	NER
Traffic Vol, veh/h	262	13	190	223	120	547
Future Vol, veh/h	262	13	190	223	120	547
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	285	14	207	242	130	595

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	299	0	947	292
Stage 1	-	-	-	-	292	-
Stage 2	-	-	-	-	655	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1262	-	290	747
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	517	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1262	-	235	747
Mov Cap-2 Maneuver	-	-	-	-	235	-
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	419	-

Approach	SE	NW	NE
HCM Control Delay, s	0	3.9	22.4
HCM LOS			C

Minor Lane/Major Mvmt	NEL n1	NWL	NWT	SET	SER
Capacity (veh/h)	911	1262	-	-	-
HCM Lane V/C Ratio	0.796	0.164	-	-	-
HCM Control Delay (s)	22.4	8.4	0	-	-
HCM Lane LOS	C	A	A	-	-
HCM 95th %tile Q(veh)	8.6	0.6	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	389	19	15	638	116	13	15	41	96	31	349
Future Volume (veh/h)	230	389	19	15	638	116	13	15	41	96	31	349
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	250	423	21	16	693	0	14	16	45	104	34	379
Adj No. of Lanes	1	1	0	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	280	1159	58	71	1015	862	44	35	282	53	8	282
Arrive On Green	0.16	0.66	0.66	0.08	1.00	0.00	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	1760	87	1774	1863	1583	0	199	1583	0	43	1583
Grp Volume(v), veh/h	250	0	444	16	693	0	30	0	45	138	0	379
Grp Sat Flow(s),veh/h/ln	1774	0	1847	1774	1863	1583	199	0	1583	43	0	1583
Q Serve(g_s), s	16.6	0.0	13.0	1.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0	21.4
Cycle Q Clear(g_c), s	16.6	0.0	13.0	1.0	0.0	0.0	21.4	0.0	2.9	21.4	0.0	21.4
Prop In Lane	1.00		0.05	1.00		1.00	0.47		1.00	0.75		1.00
Lane Grp Cap(c), veh/h	280	0	1216	71	1015	862	79	0	282	60	0	282
V/C Ratio(X)	0.89	0.00	0.37	0.23	0.68	0.00	0.38	0.00	0.16	2.29	0.00	1.34
Avail Cap(c_a), veh/h	361	0	1216	78	1015	862	79	0	282	60	0	282
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.99	0.99	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.5	0.0	9.2	53.5	0.0	0.0	42.7	0.0	41.7	57.3	0.0	49.3
Incr Delay (d2), s/veh	19.7	0.0	0.8	1.6	3.7	0.0	2.9	0.0	0.3	630.0	0.0	175.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	0.0	6.8	0.5	1.0	0.0	0.9	0.0	1.3	12.5	0.0	23.2
LnGrp Delay(d),s/veh	69.3	0.0	10.1	55.0	3.7	0.0	45.6	0.0	42.0	687.3	0.0	225.2
LnGrp LOS	F		B	F	A		D		D	F		F
Approach Vol, veh/h		694			709			75			517	
Approach Delay, s/veh		31.4			4.9			43.4			348.5	
Approach LOS		C			A			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		26.0	9.9	84.1		26.0	23.5	70.5
Change Period (Y+Rc), s		4.6	5.1	* 5.1		4.6	4.6	5.1
Max Green Setting (Gmax), s		21.4	5.3	* 79		21.4	24.4	59.9
Max Q Clear Time (g_c+I1), s		23.4	3.0	15.0		23.4	18.6	2.0
Green Ext Time (p_c), s		0.0	0.0	3.2		0.0	0.4	5.9

Intersection Summary	
HCM 2010 Ctrl Delay	104.6
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	327	119	53	9	104	39	30	48	27	101	60	645
Future Volume (veh/h)	327	119	53	9	104	39	30	48	27	101	60	645
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	355	129	58	10	113	42	33	52	29	110	65	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	706	247	102	96	866	307	127	145	67	239	101	0
Arrive On Green	0.23	0.23	0.23	0.69	0.69	0.69	0.15	0.15	0.15	0.15	0.15	0.00
Sat Flow, veh/h	884	359	149	48	1262	447	332	965	443	936	669	0
Grp Volume(v), veh/h	542	0	0	165	0	0	114	0	0	175	0	0
Grp Sat Flow(s),veh/h/ln	1392	0	0	1757	0	0	1740	0	0	1605	0	0
Q Serve(g_s), s	18.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0
Cycle Q Clear(g_c), s	20.4	0.0	0.0	1.9	0.0	0.0	3.5	0.0	0.0	6.0	0.0	0.0
Prop In Lane	0.65		0.11	0.06		0.25	0.29		0.25	0.63		0.00
Lane Grp Cap(c), veh/h	1054	0	0	1269	0	0	339	0	0	339	0	0
V/C Ratio(X)	0.51	0.00	0.00	0.13	0.00	0.00	0.34	0.00	0.00	0.52	0.00	0.00
Avail Cap(c_a), veh/h	1054	0	0	1269	0	0	579	0	0	560	0	0
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.9	0.0	0.0	3.3	0.0	0.0	23.1	0.0	0.0	24.0	0.0	0.0
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.2	0.0	0.0	0.6	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	0.0	0.0	1.0	0.0	0.0	1.8	0.0	0.0	2.8	0.0	0.0
LnGrp Delay(d),s/veh	16.6	0.0	0.0	3.5	0.0	0.0	23.7	0.0	0.0	25.2	0.0	0.0
LnGrp LOS	B			A			C			C		
Approach Vol, veh/h		542			165			114			175	
Approach Delay, s/veh		16.6			3.5			23.7			25.2	
Approach LOS		B			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		13.7		46.3		13.7		46.3
Change Period (Y+Rc), s		* 4.7		5.1		* 4.7		5.1
Max Green Setting (Gmax), s		* 18		32.2		* 18		32.2
Max Q Clear Time (g_c+I1), s		5.5		22.4		8.0		3.9
Green Ext Time (p_c), s		1.3		3.4		1.2		5.5

Intersection Summary	
HCM 2010 Ctrl Delay	16.8
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	946	1140	471	2129	0	0	0	0	36	0	118
Future Volume (veh/h)	0	946	1140	471	2129	0	0	0	0	36	0	118
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	1028	1239	512	2314	0				39	0	0
Adj No. of Lanes	0	2	2	2	2	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1578	1342	1182	2952	0				131	0	58
Arrive On Green	0.00	0.42	0.42	0.46	1.00	0.00				0.04	0.00	0.00
Sat Flow, veh/h	0	3725	3167	3442	3632	0				3548	0	1583
Grp Volume(v), veh/h	0	1028	1239	512	2314	0				39	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	16.7	28.2	7.7	0.0	0.0				0.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	16.7	28.2	7.7	0.0	0.0				0.8	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1578	1342	1182	2952	0				131	0	58
V/C Ratio(X)	0.00	0.65	0.92	0.43	0.78	0.00				0.30	0.00	0.00
Avail Cap(c_a), veh/h	0	1578	1342	1182	2952	0				840	0	375
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.37	0.37	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	17.4	20.7	15.6	0.0	0.0				35.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.1	12.0	0.1	0.8	0.0				1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.0	14.5	3.6	0.3	0.0				0.4	0.0	0.0
LnGrp Delay(d),s/veh	0.0	19.5	32.7	15.7	0.8	0.0				36.9	0.0	0.0
LnGrp LOS		B	C	B	A					D		
Approach Vol, veh/h		2267			2826						39	
Approach Delay, s/veh		26.8			3.5						36.9	
Approach LOS		C			A						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			31.2	37.3		7.5		68.5
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			11.3	* 32		18.0		48.2
Max Q Clear Time (g_c+I1), s			9.7	30.2		2.8		2.0
Green Ext Time (p_c), s			1.3	1.8		0.1		37.4

Intersection Summary	
HCM 2010 Ctrl Delay	14.0
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	953	0	0	2369	141	684	2	397	0	0	0
Future Volume (veh/h)	91	953	0	0	2369	141	684	2	397	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	99	1036	0	0	2575	153	744	0	0			
Adj No. of Lanes	1	2	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	185	2231	0	0	2863	169	854	0	381			
Arrive On Green	0.10	0.63	0.00	0.00	0.46	0.46	0.24	0.00	0.00			
Sat Flow, veh/h	1774	3632	0	0	6495	369	3548	0	1583			
Grp Volume(v), veh/h	99	1036	0	0	1982	746	744	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1602	1798	1774	0	1583			
Q Serve(g_s), s	4.0	11.6	0.0	0.0	28.9	29.1	15.3	0.0	0.0			
Cycle Q Clear(g_c), s	4.0	11.6	0.0	0.0	28.9	29.1	15.3	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.21	1.00		1.00			
Lane Grp Cap(c), veh/h	185	2231	0	0	2207	826	854	0	381			
V/C Ratio(X)	0.54	0.46	0.00	0.00	0.90	0.90	0.87	0.00	0.00			
Avail Cap(c_a), veh/h	185	2231	0	0	2207	826	948	0	423			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.65	0.65	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	32.3	7.3	0.0	0.0	18.9	19.0	27.7	0.0	0.0			
Incr Delay (d2), s/veh	2.0	0.5	0.0	0.0	6.3	15.1	8.3	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.1	5.8	0.0	0.0	14.0	17.8	8.4	0.0	0.0			
LnGrp Delay(d),s/veh	34.3	7.8	0.0	0.0	25.2	34.1	36.0	0.0	0.0			
LnGrp LOS	C	A			C	C	D					
Approach Vol, veh/h		1135			2728			744				
Approach Delay, s/veh		10.1			27.7			36.0				
Approach LOS		B			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		23.0		53.0			13.0	40.0
Change Period (Y+Rc), s		* 4.7		5.1			5.1	* 5.1
Max Green Setting (Gmax), s		* 20		45.9			6.3	* 35
Max Q Clear Time (g_c+I1), s		17.3		13.6			6.0	31.1
Green Ext Time (p_c), s		1.0		9.5			0.2	3.6

Intersection Summary	
HCM 2010 Ctrl Delay	24.7
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1648	619	512	2314	19	20	128
v/c Ratio	0.71	0.63	1.00	0.92	0.10	0.25	0.32
Control Delay	16.5	4.8	54.4	11.4	28.6	30.3	10.0
Queue Delay	0.0	0.0	0.0	0.8	0.0	0.0	0.0
Total Delay	16.5	4.8	54.4	12.2	28.6	30.3	10.0
Queue Length 50th (ft)	217	0	~129	~642	9	~21	9
Queue Length 95th (ft)	281	72	m#173	#756	24	25	50
Internal Link Dist (ft)	242			160		206	
Turn Bay Length (ft)							
Base Capacity (vph)	2321	977	510	2503	398	80	453
Starvation Cap Reductn	0	0	0	51	0	0	0
Spillback Cap Reductn	33	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.63	1.00	0.94	0.05	0.25	0.28

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	99	1036	2728	371	374	432
v/c Ratio	0.68	0.48	0.88	0.83	0.83	0.27
Control Delay	51.9	4.7	22.5	43.9	44.3	0.4
Queue Delay	0.0	1.6	0.6	7.7	8.1	0.0
Total Delay	51.9	6.4	23.1	51.6	52.5	0.4
Queue Length 50th (ft)	51	26	335	172	174	0
Queue Length 95th (ft)	m75	33	#413	#322	#325	0
Internal Link Dist (ft)		160	272		743	
Turn Bay Length (ft)						
Base Capacity (vph)	146	2137	3113	449	450	1583
Starvation Cap Reductn	0	872	0	0	0	0
Spillback Cap Reductn	0	0	126	51	51	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.82	0.91	0.93	0.94	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	517	409	149	556	14	189	18	186	13	20	8
Future Volume (veh/h)	7	517	409	149	556	14	189	18	186	13	20	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	8	562	445	162	604	15	205	20	202	14	22	9
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	18	743	631	231	979	832	265	17	437	62	82	21
Arrive On Green	0.01	0.40	0.40	0.09	0.35	0.35	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	632	62	1583	0	297	74
Grp Volume(v), veh/h	8	562	445	162	604	15	225	0	202	45	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	694	0	1583	372	0	0
Q Serve(g_s), s	0.3	19.7	17.9	6.7	20.4	0.5	0.0	0.0	8.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	19.7	17.9	6.7	20.4	0.5	21.0	0.0	8.0	21.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.91		1.00	0.31		0.20
Lane Grp Cap(c), veh/h	18	743	631	231	979	832	282	0	437	165	0	0
V/C Ratio(X)	0.44	0.76	0.70	0.70	0.62	0.02	0.80	0.00	0.46	0.27	0.00	0.00
Avail Cap(c_a), veh/h	117	743	631	243	979	832	282	0	437	165	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	37.4	19.7	19.1	33.2	18.3	11.8	29.1	0.0	22.8	22.2	0.0	0.0
Incr Delay (d2), s/veh	15.9	7.1	6.5	7.6	2.7	0.0	14.7	0.0	0.8	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	11.6	8.9	3.8	11.2	0.2	5.8	0.0	3.6	0.7	0.0	0.0
LnGrp Delay(d),s/veh	53.3	26.8	25.6	40.9	21.0	11.9	43.8	0.0	23.6	23.1	0.0	0.0
LnGrp LOS	D	C	C	D	C	B	D		C	C		
Approach Vol, veh/h		1015			781			427			45	
Approach Delay, s/veh		26.5			24.9			34.2			23.1	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		25.6	15.0	35.4		25.6	5.4	45.0
Change Period (Y+Rc), s		4.6	5.1	* 5.1		4.6	4.6	5.1
Max Green Setting (Gmax), s		21.0	10.4	* 30		21.0	5.0	35.7
Max Q Clear Time (g_c+I1), s		23.0	8.7	21.7		23.0	2.3	22.4
Green Ext Time (p_c), s		0.0	0.1	3.6		0.0	0.0	3.9

Intersection Summary	
HCM 2010 Ctrl Delay	27.3
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	188	460	50	390	7	265	26	19	3	19	69
Future Volume (veh/h)	38	188	460	50	390	7	265	26	19	3	19	69
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	41	204	500	54	424	8	288	28	21	3	21	75
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	831	706	79	757	644	91	0	506	53	275	506
Arrive On Green	0.13	0.74	0.74	0.04	0.41	0.41	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	0	0	1583	0	861	1583
Grp Volume(v), veh/h	41	204	500	54	424	8	316	0	21	24	0	75
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	0	0	1583	861	0	1583
Q Serve(g_s), s	1.6	2.6	13.0	2.3	13.3	0.2	0.0	0.0	0.7	0.0	0.0	2.6
Cycle Q Clear(g_c), s	1.6	2.6	13.0	2.3	13.3	0.2	24.3	0.0	0.7	24.3	0.0	2.6
Prop In Lane	1.00		1.00	1.00		1.00	0.91		1.00	0.12		1.00
Lane Grp Cap(c), veh/h	138	831	706	79	757	644	91	0	506	329	0	506
V/C Ratio(X)	0.30	0.25	0.71	0.68	0.56	0.01	3.49	0.00	0.04	0.07	0.00	0.15
Avail Cap(c_a), veh/h	149	831	706	154	757	644	91	0	506	329	0	506
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.77	0.77	0.77	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.2	5.7	7.0	35.8	17.3	13.4	38.0	0.0	17.8	18.9	0.0	18.5
Incr Delay (d2), s/veh	0.9	0.5	4.6	9.8	3.0	0.0	1147.8	0.0	0.0	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.4	6.3	1.3	7.5	0.1	30.8	0.0	0.3	0.4	0.0	1.1
LnGrp Delay(d),s/veh	32.1	6.2	11.6	45.5	20.3	13.5	1185.8	0.0	17.9	19.0	0.0	18.6
LnGrp LOS	C	A	B	D	C	B	F		B	B		B
Approach Vol, veh/h		745			486			337			99	
Approach Delay, s/veh		11.3			23.0			1113.0			18.7	
Approach LOS		B			C			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		29.0	8.0	39.0		29.0	11.0	36.0
Change Period (Y+Rc), s		* 4.7	4.6	5.1		* 4.7	5.1	* 5.1
Max Green Setting (Gmax), s		* 24	6.6	30.7		* 24	6.4	* 31
Max Q Clear Time (g_c+I1), s		26.3	4.3	15.0		26.3	3.6	15.3
Green Ext Time (p_c), s		0.0	0.0	3.0		0.0	0.8	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	237.9
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	7.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	297	103	1	469	106
Future Vol, veh/h	14	297	103	1	469	106
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	323	112	1	510	115

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1247	112	0	0	113	0
Stage 1	112	-	-	-	-	-
Stage 2	1135	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	192	941	-	-	1476	-
Stage 1	913	-	-	-	-	-
Stage 2	307	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	121	941	-	-	1476	-
Mov Cap-2 Maneuver	121	-	-	-	-	-
Stage 1	913	-	-	-	-	-
Stage 2	194	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	7.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	985	1476	-
HCM Lane V/C Ratio	-	-	0.343	0.345	-
HCM Control Delay (s)	-	-	10.6	8.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.5	1.6	-

Intersection	
Int Delay, s/veh	8.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	154	50	152	197	301	233
Future Vol, veh/h	154	50	152	197	301	233
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	Free
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	167	54	165	214	327	253

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	872	-	327	0	-	0
Stage 1	327	-	-	-	-	-
Stage 2	545	-	-	-	-	-
Critical Hdwy	6.42	-	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	2.218	-	-	-
Pot Cap-1 Maneuver	321	0	1233	-	-	0
Stage 1	731	0	-	-	-	0
Stage 2	581	0	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	272	-	1233	-	-	-
Mov Cap-2 Maneuver	272	-	-	-	-	-
Stage 1	731	-	-	-	-	-
Stage 2	493	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	37.3	3.6	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	1233	-	272	-	-
HCM Lane V/C Ratio	0.134	-	0.615	-	-
HCM Control Delay (s)	8.4	0	37.3	0	-
HCM Lane LOS	A	A	E	A	-
HCM 95th %tile Q(veh)	0.5	-	3.7	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	8	562	445	162	604	15	225	202	45
v/c Ratio	0.06	0.67	0.47	0.67	0.52	0.01	0.76	0.39	0.12
Control Delay	34.4	22.8	3.5	37.5	7.3	0.0	43.2	6.0	18.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.4	22.8	3.5	37.5	7.3	0.0	43.2	6.0	18.9
Queue Length 50th (ft)	4	205	0	64	44	0	98	0	13
Queue Length 95th (ft)	17	#348	53	m#129	254	m0	166	46	36
Internal Link Dist (ft)		842			1019		447		1579
Turn Bay Length (ft)	200		200	200		200		200	
Base Capacity (vph)	125	837	956	242	1158	1017	366	583	451
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.67	0.47	0.67	0.52	0.01	0.61	0.35	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	41	204	500	54	424	8	316	21	24	75
v/c Ratio	0.28	0.22	0.48	0.35	0.45	0.01	0.83	0.04	0.05	0.13
Control Delay	28.1	9.7	2.2	39.4	16.5	0.0	45.2	0.1	18.5	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.1	9.7	2.2	39.4	16.5	0.0	45.2	0.1	18.5	0.5
Queue Length 50th (ft)	16	26	0	24	145	0	134	0	8	0
Queue Length 95th (ft)	m28	m68	38	58	235	0	#248	0	24	0
Internal Link Dist (ft)		1019			822		448		1634	
Turn Bay Length (ft)	200		200	200		200		100		
Base Capacity (vph)	149	931	1041	158	939	847	433	621	573	621
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.22	0.48	0.34	0.45	0.01	0.73	0.03	0.04	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Intersection	
Int Delay, s/veh	8.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	282	19	62	837	31	50
Future Vol, veh/h	282	19	62	837	31	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	307	21	67	910	34	54

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	189	67	0	-	67	0
Stage 1	67	-	-	-	-	-
Stage 2	122	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	800	997	-	0	1535	-
Stage 1	956	-	-	0	-	-
Stage 2	903	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	782	997	-	-	1535	-
Mov Cap-2 Maneuver	782	-	-	-	-	-
Stage 1	956	-	-	-	-	-
Stage 2	882	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.1	0	2.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	SBL	SBT
Capacity (veh/h)	-	835	1535	-
HCM Lane V/C Ratio	-	0.392	0.022	-
HCM Control Delay (s)	-	12.1	7.4	0
HCM Lane LOS	-	B	A	A
HCM 95th %tile Q(veh)	-	1.9	0.1	-

Intersection	
Int Delay, s/veh	39.4

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	511	2	230	451	95	242
Future Vol, veh/h	511	2	230	451	95	242
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	555	2	250	490	103	263

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	558	0	1547	557
Stage 1	-	-	-	-	557	-
Stage 2	-	-	-	-	990	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1013	-	126	530
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	360	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1013	-	~ 83	530
Mov Cap-2 Maneuver	-	-	-	-	~ 83	-
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	238	-

Approach	SE	NW	NE
HCM Control Delay, s	0	3.3	172.2
HCM LOS			F

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	294	1013	-	-	-
HCM Lane V/C Ratio	1.246	0.247	-	-	-
HCM Control Delay (s)	172.2	9.7	0	-	-
HCM Lane LOS	F	A	A	-	-
HCM 95th %tile Q(veh)	17.1	1	-	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	545	560	10	22	548	275	5	15	64	49	13	253
Future Volume (veh/h)	545	560	10	22	548	275	5	15	64	49	13	253
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	592	609	11	24	596	0	5	16	70	53	14	275
Adj No. of Lanes	1	1	0	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	617	1245	22	80	715	608	37	91	236	54	8	236
Arrive On Green	0.35	0.68	0.68	0.09	0.77	0.00	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1774	1824	33	1774	1863	1583	0	608	1583	0	55	1583
Grp Volume(v), veh/h	592	0	620	24	596	0	21	0	70	67	0	275
Grp Sat Flow(s),veh/h/ln	1774	0	1857	1774	1863	1583	608	0	1583	55	0	1583
Q Serve(g_s), s	39.2	0.0	19.1	1.5	24.8	0.0	0.0	0.0	4.7	0.0	0.0	17.9
Cycle Q Clear(g_c), s	39.2	0.0	19.1	1.5	24.8	0.0	17.9	0.0	4.7	17.9	0.0	17.9
Prop In Lane	1.00		0.02	1.00		1.00	0.24		1.00	0.79		1.00
Lane Grp Cap(c), veh/h	617	0	1267	80	715	608	128	0	236	62	0	236
V/C Ratio(X)	0.96	0.00	0.49	0.30	0.83	0.00	0.16	0.00	0.30	1.08	0.00	1.16
Avail Cap(c_a), veh/h	642	0	1267	87	715	608	128	0	236	62	0	236
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.93	0.93	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.3	0.0	9.1	52.8	11.5	0.0	44.5	0.0	45.4	57.7	0.0	51.0
Incr Delay (d2), s/veh	25.4	0.0	1.4	1.9	10.4	0.0	0.6	0.0	0.7	138.8	0.0	110.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.6	0.0	10.1	0.8	14.3	0.0	0.6	0.0	2.1	4.4	0.0	15.0
LnGrp Delay(d),s/veh	63.7	0.0	10.4	54.8	21.8	0.0	45.1	0.0	46.1	198.3	0.0	161.2
LnGrp LOS	E		B	D	C		D		D	F		F
Approach Vol, veh/h		1212			620			91			342	
Approach Delay, s/veh		36.4			23.1			45.9			168.5	
Approach LOS		D			C			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		22.5	10.5	87.0		22.5	46.3	51.2
Change Period (Y+Rc), s		4.6	5.1	* 5.1		4.6	4.6	5.1
Max Green Setting (Gmax), s		17.9	5.9	* 82		17.9	43.4	44.4
Max Q Clear Time (g_c+I1), s		19.9	3.5	21.1		19.9	41.2	26.8
Green Ext Time (p_c), s		0.0	0.9	5.0		0.0	0.5	3.9

Intersection Summary	
HCM 2010 Ctrl Delay	53.1
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	535	120	22	38	201	59	23	84	37	73	56	630
Future Volume (veh/h)	535	120	22	38	201	59	23	84	37	73	56	630
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	582	130	24	41	218	64	25	91	40	79	61	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	797	154	28	172	866	240	94	153	61	204	114	0
Arrive On Green	1.00	1.00	1.00	0.70	0.70	0.70	0.14	0.14	0.14	0.14	0.14	0.00
Sat Flow, veh/h	983	220	41	149	1235	342	176	1123	448	813	841	0
Grp Volume(v), veh/h	736	0	0	323	0	0	156	0	0	140	0	0
Grp Sat Flow(s),veh/h/ln	1244	0	0	1726	0	0	1747	0	0	1654	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	3.9	0.0	0.0	4.9	0.0	0.0	4.4	0.0	0.0
Prop In Lane	0.79		0.03	0.13		0.20	0.16		0.26	0.56		0.00
Lane Grp Cap(c), veh/h	979	0	0	1277	0	0	307	0	0	319	0	0
V/C Ratio(X)	0.75	0.00	0.00	0.25	0.00	0.00	0.51	0.00	0.00	0.44	0.00	0.00
Avail Cap(c_a), veh/h	979	0	0	1277	0	0	583	0	0	559	0	0
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	3.3	0.0	0.0	24.5	0.0	0.0	24.3	0.0	0.0
Incr Delay (d2), s/veh	4.9	0.0	0.0	0.5	0.0	0.0	1.3	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	2.1	0.0	0.0	2.5	0.0	0.0	2.3	0.0	0.0
LnGrp Delay(d),s/veh	4.9	0.0	0.0	3.7	0.0	0.0	25.8	0.0	0.0	25.2	0.0	0.0
LnGrp LOS	A			A			C			C		
Approach Vol, veh/h		736			323			156			140	
Approach Delay, s/veh		4.9			3.7			25.8			25.2	
Approach LOS		A			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		12.9		47.1		12.9		47.1
Change Period (Y+Rc), s		* 4.7		5.1		* 4.7		5.1
Max Green Setting (Gmax), s		* 18		32.2		* 18		32.2
Max Q Clear Time (g_c+I1), s		6.9		2.0		6.4		5.9
Green Ext Time (p_c), s		1.3		10.3		1.3		9.8

Intersection Summary	
HCM 2010 Ctrl Delay	9.1
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	592	620	24	596	299	21	70	67	275
v/c Ratio	0.91	0.43	0.28	0.76	0.41	0.13	0.29	0.51	0.69
Control Delay	55.7	6.9	56.4	32.0	14.0	49.5	5.8	64.2	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.7	6.9	56.4	32.0	14.0	49.5	5.8	64.2	15.4
Queue Length 50th (ft)	415	162	19	337	84	15	0	50	0
Queue Length 95th (ft)	#648	276	m25	m415	m99	39	17	94	80
Internal Link Dist (ft)		310		787		719		318	
Turn Bay Length (ft)	135		70		100				190
Base Capacity (vph)	668	1436	87	783	734	259	327	210	470
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.43	0.28	0.76	0.41	0.08	0.21	0.32	0.59

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	736	323	156	825
v/c Ratio	1.24	0.37	0.36	1.08
Control Delay	139.1	8.7	16.1	69.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	139.1	8.7	16.1	69.7
Queue Length 50th (ft)	~426	54	35	~224
Queue Length 95th (ft)	#929	101	79	#423
Internal Link Dist (ft)	787	769	775	294
Turn Bay Length (ft)				
Base Capacity (vph)	594	864	430	766
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.24	0.37	0.36	1.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1577	1079	167	3082	0	0	0	0	108	0	234
Future Volume (veh/h)	0	1577	1079	167	3082	0	0	0	0	108	0	234
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	1594	1253	182	3350	0				117	0	0
Adj No. of Lanes	0	2	2	2	2	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2269	1929	745	3073	0				178	0	79
Arrive On Green	0.00	0.61	0.61	0.43	1.00	0.00				0.05	0.00	0.00
Sat Flow, veh/h	0	3725	3167	3442	3632	0				3548	0	1583
Grp Volume(v), veh/h	0	1594	1253	182	3350	0				117	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	35.1	30.7	4.0	104.2	0.0				3.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	35.1	30.7	4.0	104.2	0.0				3.9	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2269	1929	745	3073	0				178	0	79
V/C Ratio(X)	0.00	0.70	0.65	0.24	1.09	0.00				0.66	0.00	0.00
Avail Cap(c_a), veh/h	0	2269	1929	745	3073	0				571	0	255
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.10	0.10	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	16.0	15.2	27.8	0.0	0.0				56.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.8	1.7	0.0	41.4	0.0				4.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	18.5	13.7	1.9	17.6	0.0				2.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	17.9	16.9	27.8	41.4	0.0				60.1	0.0	0.0
LnGrp LOS		B	B	C	F					E		
Approach Vol, veh/h		2847			3532						117	
Approach Delay, s/veh		17.4			40.7						60.1	
Approach LOS		B			D						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			31.1	78.2		10.7		109.3
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			13.1	* 73		19.3		90.9
Max Q Clear Time (g_c+I1), s			6.0	37.1		5.9		106.2
Green Ext Time (p_c), s			6.7	27.1		0.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	30.8
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	1755	0	0	2035	70	1229	0	666	0	0	0
Future Volume (veh/h)	137	1755	0	0	2035	70	1229	0	666	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	149	1908	0	0	2212	76	1336	0	0			
Adj No. of Lanes	1	2	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	175	1867	0	0	2499	86	1386	0	619			
Arrive On Green	0.20	1.00	0.00	0.00	0.39	0.39	0.39	0.00	0.00			
Sat Flow, veh/h	1774	3632	0	0	6670	220	3548	0	1583			
Grp Volume(v), veh/h	149	1908	0	0	1658	630	1336	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1602	1824	1774	0	1583			
Q Serve(g_s), s	9.7	0.0	0.0	0.0	38.6	38.6	44.2	0.0	0.0			
Cycle Q Clear(g_c), s	9.7	0.0	0.0	0.0	38.6	38.6	44.2	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.12	1.00		1.00			
Lane Grp Cap(c), veh/h	175	1867	0	0	1874	711	1386	0	619			
V/C Ratio(X)	0.85	1.02	0.00	0.00	0.89	0.89	0.96	0.00	0.00			
Avail Cap(c_a), veh/h	271	1867	0	0	1874	711	1399	0	624			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.56	0.56	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	47.3	0.0	0.0	0.0	34.1	34.1	35.7	0.0	0.0			
Incr Delay (d2), s/veh	8.6	21.4	0.0	0.0	6.6	15.1	16.1	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.1	5.5	0.0	0.0	18.2	22.4	24.6	0.0	0.0			
LnGrp Delay(d),s/veh	56.0	21.4	0.0	0.0	40.7	49.3	51.9	0.0	0.0			
LnGrp LOS	E	F			D	D	D					
Approach Vol, veh/h		2057			2288			1336				
Approach Delay, s/veh		23.9			43.0			51.9				
Approach LOS		C			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		51.6		68.4			16.5	51.9
Change Period (Y+Rc), s		* 4.7		5.1			* 4.7	5.1
Max Green Setting (Gmax), s		* 47		62.9			* 18	39.9
Max Q Clear Time (g_c+I1), s		46.2		2.0			11.7	40.6
Green Ext Time (p_c), s		0.7		57.9			0.2	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	38.2
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2230	657	182	3350	58	59	254
v/c Ratio	0.78	0.60	0.49	1.25	0.25	0.27	0.82
Control Delay	18.8	3.4	45.2	130.7	47.2	47.5	58.0
Queue Delay	0.1	0.0	0.0	0.4	9.7	110.6	0.0
Total Delay	18.9	3.4	45.2	131.1	56.8	158.2	58.0
Queue Length 50th (ft)	445	0	69	~1717	42	42	145
Queue Length 95th (ft)	513	52	m70	m#1728	84	85	#284
Internal Link Dist (ft)	242			160		206	
Turn Bay Length (ft)							
Base Capacity (vph)	2869	1086	374	2680	270	216	309
Starvation Cap Reductn	0	0	0	488	0	0	0
Spillback Cap Reductn	73	0	0	0	180	180	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.60	0.49	1.53	0.64	1.64	0.82

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	149	1908	2288	668	668	724
v/c Ratio	0.69	1.03	0.99	1.01	1.01	0.46
Control Delay	79.9	43.2	54.8	74.0	74.0	1.0
Queue Delay	2.4	1.2	0.0	32.1	32.1	0.0
Total Delay	82.3	44.3	54.8	106.1	106.1	1.0
Queue Length 50th (ft)	115	~835	~512	~548	~548	0
Queue Length 95th (ft)	m150	#955	#650	#813	#813	0
Internal Link Dist (ft)		160	272		743	
Turn Bay Length (ft)						
Base Capacity (vph)	269	1855	2312	662	662	1583
Starvation Cap Reductn	48	6	0	0	0	0
Spillback Cap Reductn	0	0	0	75	75	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	1.03	0.99	1.14	1.14	0.46

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	560	385	116	779	20	244	15	159	21	40	11
Future Volume (veh/h)	4	560	385	116	779	20	244	15	159	21	40	11
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	4	609	418	126	847	22	265	16	173	23	43	12
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	9	753	640	401	1177	1001	286	11	475	67	102	19
Arrive On Green	0.01	0.40	0.40	0.07	0.21	0.21	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	619	37	1583	0	341	62
Grp Volume(v), veh/h	4	609	418	126	847	22	281	0	173	78	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	656	0	1583	402	0	0
Q Serve(g_s), s	0.2	20.3	15.0	4.7	29.6	0.8	0.0	0.0	6.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	20.3	15.0	4.7	29.6	0.8	21.0	0.0	6.0	21.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.94		1.00	0.29		0.15
Lane Grp Cap(c), veh/h	9	753	640	401	1177	1001	297	0	475	187	0	0
V/C Ratio(X)	0.42	0.81	0.65	0.31	0.72	0.02	0.95	0.00	0.36	0.42	0.00	0.00
Avail Cap(c_a), veh/h	127	753	640	401	1177	1001	297	0	475	187	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.84	0.84	0.84	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.7	18.5	16.9	27.2	21.9	10.5	27.6	0.0	19.3	19.8	0.0	0.0
Incr Delay (d2), s/veh	27.1	9.1	5.1	0.4	3.2	0.0	38.1	0.0	0.5	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	12.2	7.4	2.4	16.4	0.3	8.5	0.0	2.7	1.2	0.0	0.0
LnGrp Delay(d),s/veh	61.8	27.6	22.0	27.6	25.1	10.5	65.8	0.0	19.7	21.3	0.0	0.0
LnGrp LOS	E	C	C	C	C	B	E		B	C		
Approach Vol, veh/h		1031			995			454			78	
Approach Delay, s/veh		25.5			25.1			48.2			21.3	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		25.6	21.2	33.4		25.6	5.0	49.6
Change Period (Y+Rc), s		4.6	5.1	* 5.1		4.6	4.6	5.1
Max Green Setting (Gmax), s		21.0	6.4	* 28		21.0	5.0	29.7
Max Q Clear Time (g_c+I1), s		23.0	6.7	22.3		23.0	2.2	31.6
Green Ext Time (p_c), s		0.0	0.0	2.9		0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	29.2
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	383	333	41	352	7	526	42	70	8	22	68
Future Volume (veh/h)	36	383	333	41	352	7	526	42	70	8	22	68
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	39	416	362	45	383	8	572	46	76	9	24	74
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	535	455	114	597	508	99	0	690	65	141	690
Arrive On Green	0.08	0.57	0.57	0.06	0.32	0.32	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	0	0	1583	0	323	1583
Grp Volume(v), veh/h	39	416	362	45	383	8	618	0	76	33	0	74
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	0	0	1583	323	0	1583
Q Serve(g_s), s	1.5	12.0	12.6	1.7	12.3	0.2	0.0	0.0	2.0	0.0	0.0	1.9
Cycle Q Clear(g_c), s	1.5	12.0	12.6	1.7	12.3	0.2	30.5	0.0	2.0	30.5	0.0	1.9
Prop In Lane	1.00		1.00	1.00		1.00	0.93		1.00	0.27		1.00
Lane Grp Cap(c), veh/h	67	535	455	114	597	508	99	0	690	206	0	690
V/C Ratio(X)	0.58	0.78	0.80	0.39	0.64	0.02	6.24	0.00	0.11	0.16	0.00	0.11
Avail Cap(c_a), veh/h	127	535	455	127	597	508	99	0	690	206	0	690
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.72	0.72	0.72	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.8	13.2	13.3	31.4	20.3	16.2	35.0	0.0	11.7	15.9	0.0	11.7
Incr Delay (d2), s/veh	5.5	7.8	10.0	2.2	5.2	0.1	2379.7	0.0	0.1	0.4	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	7.2	6.5	0.9	7.1	0.1	67.4	0.0	0.9	0.4	0.0	0.8
LnGrp Delay(d),s/veh	37.3	21.0	23.3	33.6	25.6	16.3	2414.7	0.0	11.8	16.2	0.0	11.8
LnGrp LOS	D	C	C	C	C	B	F		B	B		B
Approach Vol, veh/h		817			436			694			107	
Approach Delay, s/veh		22.8			26.2			2151.6			13.1	
Approach LOS		C			C			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		35.2	9.6	25.2		35.2	7.3	27.5
Change Period (Y+Rc), s		* 4.7	5.1	* 5.1		* 4.7	4.6	5.1
Max Green Setting (Gmax), s		* 31	5.0	* 20		* 31	5.0	20.1
Max Q Clear Time (g_c+I1), s		32.5	3.7	14.6		32.5	3.5	14.3
Green Ext Time (p_c), s		0.0	0.0	2.0		0.0	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	742.3
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	7.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	335	112	7	382	143
Future Vol, veh/h	26	335	112	7	382	143
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	364	122	8	415	155

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1112	126	0	0	129	0
Stage 1	126	-	-	-	-	-
Stage 2	986	-	-	-	-	-
Critical Hdwy	7.12	6.22	-	-	4.12	-
Critical Hdwy Stg 1	6.12	-	-	-	-	-
Critical Hdwy Stg 2	6.12	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	186	924	-	-	1457	-
Stage 1	878	-	-	-	-	-
Stage 2	298	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	141	924	-	-	1457	-
Mov Cap-2 Maneuver	141	-	-	-	-	-
Stage 1	878	-	-	-	-	-
Stage 2	205	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	6.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	996	1457	-
HCM Lane V/C Ratio	-	-	0.394	0.285	-
HCM Control Delay (s)	-	-	10.9	8.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.9	1.2	-

Intersection	
Int Delay, s/veh	32.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	395	50	60	234	204	188
Future Vol, veh/h	395	50	60	234	204	188
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	Free
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	429	54	65	254	222	204

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	607	-	222	0	-	0
Stage 1	222	-	-	-	-	-
Stage 2	385	-	-	-	-	-
Critical Hdwy	6.42	-	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	2.218	-	-	-
Pot Cap-1 Maneuver	460	0	1347	-	-	0
Stage 1	815	0	-	-	-	0
Stage 2	688	0	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	434	-	1347	-	-	-
Mov Cap-2 Maneuver	434	-	-	-	-	-
Stage 1	815	-	-	-	-	-
Stage 2	649	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	71.7	1.6	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	1347	-	434	-	-
HCM Lane V/C Ratio	0.048	-	0.989	-	-
HCM Control Delay (s)	7.8	0	71.7	0	-
HCM Lane LOS	A	A	F	A	-
HCM 95th %tile Q(veh)	0.2	-	12.4	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	4	609	418	126	847	22	281	173	78
v/c Ratio	0.03	0.74	0.45	0.78	0.80	0.02	0.77	0.31	0.18
Control Delay	30.8	24.5	3.4	50.2	17.6	0.0	38.6	4.6	17.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.8	24.5	3.4	50.2	17.6	0.0	38.6	4.6	17.4
Queue Length 50th (ft)	2	220	0	52	237	0	107	0	21
Queue Length 95th (ft)	10	#398	49	m68	m#477	m0	#204	36	50
Internal Link Dist (ft)		842			1019		447		1579
Turn Bay Length (ft)	200		200	200		200		200	
Base Capacity (vph)	134	822	932	161	1064	945	416	603	483
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.74	0.45	0.78	0.80	0.02	0.68	0.29	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	39	416	362	45	383	8	618	76	33	74
v/c Ratio	0.31	0.65	0.46	0.36	0.60	0.01	1.06	0.10	0.05	0.09
Control Delay	41.5	17.1	2.5	39.3	25.8	0.0	78.0	0.2	11.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.5	17.1	2.5	39.3	25.8	0.0	78.0	0.2	11.7	0.2
Queue Length 50th (ft)	13	70	0	19	147	0	~300	0	8	0
Queue Length 95th (ft)	m24	m#263	m0	49	#262	0	#485	0	23	0
Internal Link Dist (ft)		1019			822		448		1634	
Turn Bay Length (ft)	200		200	200		200		100		
Base Capacity (vph)	126	636	779	126	636	606	582	793	712	793
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.65	0.46	0.36	0.60	0.01	1.06	0.10	0.05	0.09

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Intersection	
Int Delay, s/veh	10.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	372	16	73	312	30	101
Future Vol, veh/h	372	16	73	312	30	101
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	404	17	79	339	33	110

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	254	79	0	-	79	0
Stage 1	79	-	-	-	-	-
Stage 2	175	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	735	981	-	0	1519	-
Stage 1	944	-	-	0	-	-
Stage 2	855	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	718	981	-	-	1519	-
Mov Cap-2 Maneuver	718	-	-	-	-	-
Stage 1	944	-	-	-	-	-
Stage 2	835	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.1	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	WBLn1	SBL	SBT
Capacity (veh/h)	-	741	1519	-
HCM Lane V/C Ratio	-	0.569	0.021	-
HCM Control Delay (s)	-	16.1	7.4	0
HCM Lane LOS	-	C	A	A
HCM 95th %tile Q(veh)	-	3.6	0.1	-

Intersection	
Int Delay, s/veh	14.9

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	262	13	190	223	120	585
Future Vol, veh/h	262	13	190	223	120	585
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	285	14	207	242	130	636

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	299	0	947	292
Stage 1	-	-	-	-	292	-
Stage 2	-	-	-	-	655	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1262	-	290	747
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	517	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1262	-	235	747
Mov Cap-2 Maneuver	-	-	-	-	235	-
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	419	-

Approach	SE	NW	NE
HCM Control Delay, s	0	3.9	27.1
HCM LOS			D

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	900	1262	-	-	-
HCM Lane V/C Ratio	0.851	0.164	-	-	-
HCM Control Delay (s)	27.1	8.4	0	-	-
HCM Lane LOS	D	A	A	-	-
HCM 95th %tile Q(veh)	10.5	0.6	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	252	389	19	15	676	116	13	15	41	96	31	349
Future Volume (veh/h)	252	389	19	15	676	116	13	15	41	96	31	349
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	274	423	21	16	735	0	14	16	45	104	34	379
Adj No. of Lanes	1	1	0	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	303	1159	58	71	990	842	44	35	282	53	8	282
Arrive On Green	0.17	0.66	0.66	0.08	1.00	0.00	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	1760	87	1774	1863	1583	0	199	1583	0	43	1583
Grp Volume(v), veh/h	274	0	444	16	735	0	30	0	45	138	0	379
Grp Sat Flow(s),veh/h/ln	1774	0	1847	1774	1863	1583	199	0	1583	43	0	1583
Q Serve(g_s), s	18.2	0.0	13.0	1.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0	21.4
Cycle Q Clear(g_c), s	18.2	0.0	13.0	1.0	0.0	0.0	21.4	0.0	2.9	21.4	0.0	21.4
Prop In Lane	1.00		0.05	1.00		1.00	0.47		1.00	0.75		1.00
Lane Grp Cap(c), veh/h	303	0	1216	71	990	842	79	0	282	60	0	282
V/C Ratio(X)	0.90	0.00	0.37	0.23	0.74	0.00	0.38	0.00	0.16	2.29	0.00	1.34
Avail Cap(c_a), veh/h	361	0	1216	78	990	842	79	0	282	60	0	282
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.99	0.99	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.8	0.0	9.2	53.5	0.0	0.0	42.7	0.0	41.7	57.3	0.0	49.3
Incr Delay (d2), s/veh	22.8	0.0	0.8	1.6	5.0	0.0	2.9	0.0	0.3	630.0	0.0	175.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.8	0.0	6.8	0.5	1.4	0.0	0.9	0.0	1.3	12.5	0.0	23.2
LnGrp Delay(d),s/veh	71.6	0.0	10.1	55.0	5.0	0.0	45.6	0.0	42.0	687.3	0.0	225.2
LnGrp LOS	E		B	E	A		D		D	F		F
Approach Vol, veh/h		718			751			75			517	
Approach Delay, s/veh		33.6			6.0			43.4			348.5	
Approach LOS		C			A			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		26.0	9.9	84.1		26.0	25.1	68.9
Change Period (Y+Rc), s		4.6	5.1	* 5.1		4.6	4.6	5.1
Max Green Setting (Gmax), s		21.4	5.3	* 79		21.4	24.4	59.9
Max Q Clear Time (g_c+I1), s		23.4	3.0	15.0		23.4	20.2	2.0
Green Ext Time (p_c), s		0.0	0.0	3.2		0.0	0.3	6.5

Intersection Summary	
HCM 2010 Ctrl Delay	102.9
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	327	119	53	9	104	39	30	48	27	101	60	683
Future Volume (veh/h)	327	119	53	9	104	39	30	48	27	101	60	683
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	355	129	58	10	113	42	33	52	29	110	65	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	706	247	102	96	866	307	127	145	67	239	101	0
Arrive On Green	0.23	0.23	0.23	0.69	0.69	0.69	0.15	0.15	0.15	0.15	0.15	0.00
Sat Flow, veh/h	884	359	149	48	1262	447	332	965	443	936	669	0
Grp Volume(v), veh/h	542	0	0	165	0	0	114	0	0	175	0	0
Grp Sat Flow(s),veh/h/ln	1392	0	0	1757	0	0	1740	0	0	1605	0	0
Q Serve(g_s), s	18.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0
Cycle Q Clear(g_c), s	20.4	0.0	0.0	1.9	0.0	0.0	3.5	0.0	0.0	6.0	0.0	0.0
Prop In Lane	0.65		0.11	0.06		0.25	0.29		0.25	0.63		0.00
Lane Grp Cap(c), veh/h	1054	0	0	1269	0	0	339	0	0	339	0	0
V/C Ratio(X)	0.51	0.00	0.00	0.13	0.00	0.00	0.34	0.00	0.00	0.52	0.00	0.00
Avail Cap(c_a), veh/h	1054	0	0	1269	0	0	579	0	0	560	0	0
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.9	0.0	0.0	3.3	0.0	0.0	23.1	0.0	0.0	24.0	0.0	0.0
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.2	0.0	0.0	0.6	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	0.0	0.0	1.0	0.0	0.0	1.8	0.0	0.0	2.8	0.0	0.0
LnGrp Delay(d),s/veh	16.6	0.0	0.0	3.5	0.0	0.0	23.7	0.0	0.0	25.2	0.0	0.0
LnGrp LOS	B			A			C			C		
Approach Vol, veh/h		542			165			114			175	
Approach Delay, s/veh		16.6			3.5			23.7			25.2	
Approach LOS		B			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		13.7		46.3		13.7		46.3
Change Period (Y+Rc), s		* 4.7		5.1		* 4.7		5.1
Max Green Setting (Gmax), s		* 18		32.2		* 18		32.2
Max Q Clear Time (g_c+I1), s		5.5		22.4		8.0		3.9
Green Ext Time (p_c), s		1.3		3.4		1.2		5.5

Intersection Summary	
HCM 2010 Ctrl Delay	16.8
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	274	444	16	735	126	30	45	138	379
v/c Ratio	0.84	0.32	0.21	0.71	0.14	0.14	0.14	0.70	0.69
Control Delay	68.8	7.0	51.2	17.9	6.0	44.4	1.0	66.9	11.6
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay	68.8	7.0	51.2	18.0	6.0	44.4	1.0	66.9	11.6
Queue Length 50th (ft)	202	86	13	357	27	20	0	102	0
Queue Length 95th (ft)	#324	199	m14	m311	m19	48	0	168	90
Internal Link Dist (ft)		310		787		719		318	
Turn Bay Length (ft)	135		70		100				190
Base Capacity (vph)	361	1381	78	1034	904	282	370	252	593
Starvation Cap Reductn	0	0	0	28	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.32	0.21	0.73	0.14	0.11	0.12	0.55	0.64

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	542	165	114	917
v/c Ratio	0.77	0.17	0.31	1.27
Control Delay	17.9	5.8	15.4	148.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	17.9	5.8	15.4	148.7
Queue Length 50th (ft)	224	20	23	~332
Queue Length 95th (ft)	222	45	60	#538
Internal Link Dist (ft)	787	769	775	294
Turn Bay Length (ft)				
Base Capacity (vph)	702	955	364	723
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.77	0.17	0.31	1.27

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	949	1140	476	2144	0	0	0	0	38	0	118
Future Volume (veh/h)	0	949	1140	476	2144	0	0	0	0	38	0	118
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	1032	1239	517	2330	0				41	0	0
Adj No. of Lanes	0	2	2	2	2	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1578	1342	1178	2948	0				135	0	60
Arrive On Green	0.00	0.42	0.42	0.46	1.00	0.00				0.04	0.00	0.00
Sat Flow, veh/h	0	3725	3167	3442	3632	0				3548	0	1583
Grp Volume(v), veh/h	0	1032	1239	517	2330	0				41	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	16.8	28.2	7.8	0.0	0.0				0.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	16.8	28.2	7.8	0.0	0.0				0.9	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1578	1342	1178	2948	0				135	0	60
V/C Ratio(X)	0.00	0.65	0.92	0.44	0.79	0.00				0.30	0.00	0.00
Avail Cap(c_a), veh/h	0	1578	1342	1178	2948	0				840	0	375
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.35	0.35	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	17.5	20.7	15.7	0.0	0.0				35.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.1	12.0	0.1	0.8	0.0				1.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.1	14.5	3.7	0.3	0.0				0.4	0.0	0.0
LnGrp Delay(d),s/veh	0.0	19.6	32.7	15.8	0.8	0.0				36.8	0.0	0.0
LnGrp LOS		B	C	B	A					D		
Approach Vol, veh/h		2271			2847						41	
Approach Delay, s/veh		26.8			3.5						36.8	
Approach LOS		C			A						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			31.1	37.3		7.6		68.4
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			11.3	* 32		18.0		48.2
Max Q Clear Time (g_c+I1), s			9.8	30.2		2.9		2.0
Green Ext Time (p_c), s			1.2	1.8		0.1		37.7

Intersection Summary	
HCM 2010 Ctrl Delay	14.0
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	958	0	0	2389	150	684	2	398	0	0	0
Future Volume (veh/h)	91	958	0	0	2389	150	684	2	398	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	99	1041	0	0	2597	163	744	0	0			
Adj No. of Lanes	1	2	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	185	2231	0	0	2853	178	854	0	381			
Arrive On Green	0.10	0.63	0.00	0.00	0.46	0.46	0.24	0.00	0.00			
Sat Flow, veh/h	1774	3632	0	0	6473	388	3548	0	1583			
Grp Volume(v), veh/h	99	1041	0	0	2006	754	744	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1602	1794	1774	0	1583			
Q Serve(g_s), s	4.0	11.7	0.0	0.0	29.5	29.8	15.3	0.0	0.0			
Cycle Q Clear(g_c), s	4.0	11.7	0.0	0.0	29.5	29.8	15.3	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.22	1.00		1.00			
Lane Grp Cap(c), veh/h	185	2231	0	0	2207	824	854	0	381			
V/C Ratio(X)	0.54	0.47	0.00	0.00	0.91	0.91	0.87	0.00	0.00			
Avail Cap(c_a), veh/h	185	2231	0	0	2207	824	948	0	423			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.64	0.64	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	32.3	7.4	0.0	0.0	19.1	19.2	27.7	0.0	0.0			
Incr Delay (d2), s/veh	2.0	0.5	0.0	0.0	7.0	16.4	8.3	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.1	5.8	0.0	0.0	14.2	18.4	8.4	0.0	0.0			
LnGrp Delay(d),s/veh	34.2	7.8	0.0	0.0	26.0	35.6	36.0	0.0	0.0			
LnGrp LOS	C	A			C	D	D					
Approach Vol, veh/h		1140			2760			744				
Approach Delay, s/veh		10.1			28.7			36.0				
Approach LOS		B			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		23.0		53.0			13.0	40.0
Change Period (Y+Rc), s		* 4.7		5.1			5.1	* 5.1
Max Green Setting (Gmax), s		* 20		45.9			6.3	* 35
Max Q Clear Time (g_c+I1), s		17.3		13.7			6.0	31.8
Green Ext Time (p_c), s		1.0		9.5			0.2	3.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.3
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	560	546	149	615	14	191	18	186	13	20	8
Future Volume (veh/h)	7	560	546	149	615	14	191	18	186	13	20	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	8	609	593	162	668	15	208	20	202	14	22	9
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	18	743	631	231	979	832	265	17	437	62	82	21
Arrive On Green	0.01	0.40	0.40	0.09	0.35	0.35	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	633	61	1583	0	297	74
Grp Volume(v), veh/h	8	609	593	162	668	15	228	0	202	45	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	693	0	1583	372	0	0
Q Serve(g_s), s	0.3	22.2	27.4	6.7	23.2	0.5	0.0	0.0	8.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	22.2	27.4	6.7	23.2	0.5	21.0	0.0	8.0	21.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.91		1.00	0.31		0.20
Lane Grp Cap(c), veh/h	18	743	631	231	979	832	282	0	437	165	0	0
V/C Ratio(X)	0.44	0.82	0.94	0.70	0.68	0.02	0.81	0.00	0.46	0.27	0.00	0.00
Avail Cap(c_a), veh/h	117	743	631	243	979	832	282	0	437	165	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.91	0.91	0.91	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	37.4	20.4	22.0	33.2	19.2	11.8	29.2	0.0	22.8	22.2	0.0	0.0
Incr Delay (d2), s/veh	15.9	9.8	23.7	7.5	3.5	0.0	15.9	0.0	0.8	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	13.4	16.0	3.8	12.9	0.2	6.0	0.0	3.6	0.7	0.0	0.0
LnGrp Delay(d),s/veh	53.3	30.3	45.6	40.8	22.7	11.9	45.0	0.0	23.6	23.1	0.0	0.0
LnGrp LOS	D	C	D	D	C	B	D		C	C		
Approach Vol, veh/h		1210			845			430			45	
Approach Delay, s/veh		37.9			26.0			35.0			23.1	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		25.6	15.0	35.4		25.6	5.4	45.0
Change Period (Y+Rc), s		4.6	5.1	* 5.1		4.6	4.6	5.1
Max Green Setting (Gmax), s		21.0	10.4	* 30		21.0	5.0	35.7
Max Q Clear Time (g_c+I1), s		23.0	8.7	29.4		23.0	2.3	25.2
Green Ext Time (p_c), s		0.0	0.1	0.6		0.0	0.0	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	33.2
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	193	498	50	391	7	323	26	19	3	19	69
Future Volume (veh/h)	38	193	498	50	391	7	323	26	19	3	19	69
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	41	210	541	54	425	8	351	28	21	3	21	75
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	831	706	79	757	644	91	0	506	53	275	506
Arrive On Green	0.13	0.74	0.74	0.04	0.41	0.41	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	0	0	1583	0	861	1583
Grp Volume(v), veh/h	41	210	541	54	425	8	379	0	21	24	0	75
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	0	0	1583	861	0	1583
Q Serve(g_s), s	1.6	2.7	15.4	2.3	13.3	0.2	0.0	0.0	0.7	0.0	0.0	2.6
Cycle Q Clear(g_c), s	1.6	2.7	15.4	2.3	13.3	0.2	24.3	0.0	0.7	24.3	0.0	2.6
Prop In Lane	1.00		1.00	1.00		1.00	0.93		1.00	0.12		1.00
Lane Grp Cap(c), veh/h	138	831	706	79	757	644	91	0	506	329	0	506
V/C Ratio(X)	0.30	0.25	0.77	0.68	0.56	0.01	4.15	0.00	0.04	0.07	0.00	0.15
Avail Cap(c_a), veh/h	149	831	706	154	757	644	91	0	506	329	0	506
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.72	0.72	0.72	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.2	5.7	7.3	35.8	17.3	13.4	38.0	0.0	17.8	18.9	0.0	18.5
Incr Delay (d2), s/veh	0.9	0.5	5.7	9.8	3.0	0.0	1444.8	0.0	0.0	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.4	7.5	1.3	7.5	0.1	38.5	0.0	0.3	0.4	0.0	1.1
LnGrp Delay(d),s/veh	32.1	6.2	13.0	45.5	20.3	13.5	1482.8	0.0	17.9	19.0	0.0	18.6
LnGrp LOS	C	A	B	D	C	B	F		B	B		B
Approach Vol, veh/h		792			487			400			99	
Approach Delay, s/veh		12.2			23.0			1405.9			18.7	
Approach LOS		B			C			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		29.0	8.0	39.0		29.0	11.0	36.0
Change Period (Y+Rc), s		* 4.7	4.6	5.1		* 4.7	5.1	* 5.1
Max Green Setting (Gmax), s		* 24	6.6	30.7		* 24	6.4	* 31
Max Q Clear Time (g_c+I1), s		26.3	4.3	17.4		26.3	3.6	15.3
Green Ext Time (p_c), s		0.0	0.0	3.0		0.0	0.9	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	329.1
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	14	299	103	1	606	106
Future Vol, veh/h	14	299	103	1	606	106
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	325	112	1	659	115

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1545	112	0	0	113	0
Stage 1	112	-	-	-	-	-
Stage 2	1433	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	126	941	-	-	1476	-
Stage 1	913	-	-	-	-	-
Stage 2	220	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	66	941	-	-	1476	-
Mov Cap-2 Maneuver	66	-	-	-	-	-
Stage 1	913	-	-	-	-	-
Stage 2	115	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	985	1476	-
HCM Lane V/C Ratio	-	-	0.345	0.446	-
HCM Control Delay (s)	-	-	10.6	9.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.6	2.4	-

Intersection	
Int Delay, s/veh	16.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	200	50	152	209	329	242
Future Vol, veh/h	200	50	152	209	329	242
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	Free
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	217	54	165	227	358	263

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	916	-	358	0	-	0
Stage 1	358	-	-	-	-	-
Stage 2	558	-	-	-	-	-
Critical Hdwy	6.42	-	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	2.218	-	-	-
Pot Cap-1 Maneuver	302	0	1201	-	-	0
Stage 1	707	0	-	-	-	0
Stage 2	573	0	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	255	-	1201	-	-	-
Mov Cap-2 Maneuver	255	-	-	-	-	-
Stage 1	707	-	-	-	-	-
Stage 2	483	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	66.7	3.6	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	1201	-	255	-	-
HCM Lane V/C Ratio	0.138	-	0.853	-	-
HCM Control Delay (s)	8.5	0	66.7	0	-
HCM Lane LOS	A	A	F	A	-
HCM 95th %tile Q(veh)	0.5	-	7	-	-

Intersection	
Int Delay, s/veh	8.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	282	19	62	788	31	50
Future Vol, veh/h	282	19	62	788	31	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	307	21	67	857	34	54

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	189	67	0	-	67	0
Stage 1	67	-	-	-	-	-
Stage 2	122	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	800	997	-	0	1535	-
Stage 1	956	-	-	0	-	-
Stage 2	903	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	782	997	-	-	1535	-
Mov Cap-2 Maneuver	782	-	-	-	-	-
Stage 1	956	-	-	-	-	-
Stage 2	882	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.1	0	2.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	SBL	SBT
Capacity (veh/h)	-	835	1535	-
HCM Lane V/C Ratio	-	0.392	0.022	-
HCM Control Delay (s)	-	12.1	7.4	0
HCM Lane LOS	-	B	A	A
HCM 95th %tile Q(veh)	-	1.9	0.1	-

Intersection	
Int Delay, s/veh	37.6

Movement	SET	SER	NWL	NWT	NEL	NER
Traffic Vol, veh/h	511	2	230	451	95	214
Future Vol, veh/h	511	2	230	451	95	214
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	555	2	250	490	103	233

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	558	0	1547	557
Stage 1	-	-	-	-	557	-
Stage 2	-	-	-	-	990	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1013	-	126	530
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	360	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1013	-	~ 83	530
Mov Cap-2 Maneuver	-	-	-	-	~ 83	-
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	238	-

Approach	SE	NW	NE
HCM Control Delay, s	0	3.3	175.6
HCM LOS			F

Minor Lane/Major Mvmt	NEL n1	NWL	NWT	SET	SER
Capacity (veh/h)	270	1013	-	-	-
HCM Lane V/C Ratio	1.244	0.247	-	-	-
HCM Control Delay (s)	175.6	9.7	0	-	-
HCM Lane LOS	F	A	A	-	-
HCM 95th %tile Q(veh)	16.1	1	-	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	496	560	10	22	520	275	5	15	64	49	13	253
Future Volume (veh/h)	496	560	10	22	520	275	5	15	64	49	13	253
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	539	609	11	24	565	0	5	16	70	53	14	275
Adj No. of Lanes	1	1	0	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	570	1245	22	80	764	650	37	91	236	54	8	236
Arrive On Green	0.32	0.68	0.68	0.09	0.82	0.00	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1774	1824	33	1774	1863	1583	0	608	1583	0	55	1583
Grp Volume(v), veh/h	539	0	620	24	565	0	21	0	70	67	0	275
Grp Sat Flow(s),veh/h/ln	1774	0	1857	1774	1863	1583	608	0	1583	55	0	1583
Q Serve(g_s), s	35.5	0.0	19.1	1.5	16.6	0.0	0.0	0.0	4.7	0.0	0.0	17.9
Cycle Q Clear(g_c), s	35.5	0.0	19.1	1.5	16.6	0.0	17.9	0.0	4.7	17.9	0.0	17.9
Prop In Lane	1.00		0.02	1.00		1.00	0.24		1.00	0.79		1.00
Lane Grp Cap(c), veh/h	570	0	1267	80	764	650	128	0	236	62	0	236
V/C Ratio(X)	0.95	0.00	0.49	0.30	0.74	0.00	0.16	0.00	0.30	1.08	0.00	1.16
Avail Cap(c_a), veh/h	642	0	1267	87	764	650	128	0	236	62	0	236
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.93	0.93	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.7	0.0	9.1	52.8	7.8	0.0	44.5	0.0	45.4	57.7	0.0	51.0
Incr Delay (d2), s/veh	21.7	0.0	1.4	1.9	5.9	0.0	0.6	0.0	0.7	138.8	0.0	110.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.8	0.0	10.1	0.8	9.1	0.0	0.6	0.0	2.1	4.4	0.0	15.0
LnGrp Delay(d),s/veh	61.4	0.0	10.4	54.8	13.8	0.0	45.1	0.0	46.1	198.3	0.0	161.2
LnGrp LOS	F		B	D	B		D		D	F		F
Approach Vol, veh/h		1159			589			91			342	
Approach Delay, s/veh		34.1			15.4			45.9			168.5	
Approach LOS		C			B			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		22.5	10.5	87.0		22.5	43.2	54.3
Change Period (Y+Rc), s		4.6	5.1	* 5.1		4.6	4.6	5.1
Max Green Setting (Gmax), s		17.9	5.9	* 82		17.9	43.4	44.4
Max Q Clear Time (g_c+I1), s		19.9	3.5	21.1		19.9	37.5	18.6
Green Ext Time (p_c), s		0.0	0.0	5.0		0.0	1.0	4.1

Intersection Summary	
HCM 2010 Ctrl Delay	50.7
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	535	120	22	38	201	59	23	84	37	73	56	602
Future Volume (veh/h)	535	120	22	38	201	59	23	84	37	73	56	602
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	582	130	24	41	218	64	25	91	40	79	61	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	797	154	28	172	866	240	94	153	61	204	114	0
Arrive On Green	1.00	1.00	1.00	0.70	0.70	0.70	0.14	0.14	0.14	0.14	0.14	0.00
Sat Flow, veh/h	983	220	41	149	1235	342	176	1123	448	813	841	0
Grp Volume(v), veh/h	736	0	0	323	0	0	156	0	0	140	0	0
Grp Sat Flow(s),veh/h/ln	1244	0	0	1726	0	0	1747	0	0	1654	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	3.9	0.0	0.0	4.9	0.0	0.0	4.4	0.0	0.0
Prop In Lane	0.79		0.03	0.13		0.20	0.16		0.26	0.56		0.00
Lane Grp Cap(c), veh/h	979	0	0	1277	0	0	307	0	0	319	0	0
V/C Ratio(X)	0.75	0.00	0.00	0.25	0.00	0.00	0.51	0.00	0.00	0.44	0.00	0.00
Avail Cap(c_a), veh/h	979	0	0	1277	0	0	583	0	0	559	0	0
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	3.3	0.0	0.0	24.5	0.0	0.0	24.3	0.0	0.0
Incr Delay (d2), s/veh	4.9	0.0	0.0	0.5	0.0	0.0	1.3	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	2.1	0.0	0.0	2.5	0.0	0.0	2.3	0.0	0.0
LnGrp Delay(d),s/veh	4.9	0.0	0.0	3.7	0.0	0.0	25.8	0.0	0.0	25.2	0.0	0.0
LnGrp LOS	A			A			C			C		
Approach Vol, veh/h		736			323			156			140	
Approach Delay, s/veh		4.9			3.7			25.8			25.2	
Approach LOS		A			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		12.9		47.1		12.9		47.1
Change Period (Y+Rc), s		* 4.7		5.1		* 4.7		5.1
Max Green Setting (Gmax), s		* 18		32.2		* 18		32.2
Max Q Clear Time (g_c+I1), s		6.9		2.0		6.4		5.9
Green Ext Time (p_c), s		1.3		10.3		1.3		9.8

Intersection Summary	
HCM 2010 Ctrl Delay	9.1
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1595	1079	170	3089	0	0	0	0	120	0	234
Future Volume (veh/h)	0	1595	1079	170	3089	0	0	0	0	120	0	234
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	1602	1261	185	3358	0				130	0	0
Adj No. of Lanes	0	2	2	2	2	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2269	1929	731	3058	0				193	0	86
Arrive On Green	0.00	0.61	0.61	0.42	1.00	0.00				0.05	0.00	0.00
Sat Flow, veh/h	0	3725	3167	3442	3632	0				3548	0	1583
Grp Volume(v), veh/h	0	1602	1261	185	3358	0				130	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	35.4	31.0	4.2	103.7	0.0				4.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	35.4	31.0	4.2	103.7	0.0				4.3	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2269	1929	731	3058	0				193	0	86
V/C Ratio(X)	0.00	0.71	0.65	0.25	1.10	0.00				0.67	0.00	0.00
Avail Cap(c_a), veh/h	0	2269	1929	731	3058	0				571	0	255
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.58	0.58	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	16.1	15.2	28.4	0.0	0.0				55.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.9	1.7	0.1	47.7	0.0				4.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	18.6	14.0	2.0	20.3	0.0				2.2	0.0	0.0
LnGrp Delay(d),s/veh	0.0	18.0	17.0	28.5	47.7	0.0				59.8	0.0	0.0
LnGrp LOS		B	B	C	F					F		
Approach Vol, veh/h		2863			3543						130	
Approach Delay, s/veh		17.5			46.7						59.8	
Approach LOS		B			D						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			30.6	78.2		11.2		108.8
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			13.1	* 73		19.3		90.9
Max Q Clear Time (g_c+I1), s			6.2	37.4		6.3		105.7
Green Ext Time (p_c), s			6.6	27.1		0.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	1785	0	0	1265	75	1229	0	672	0	0	0
Future Volume (veh/h)	137	1785	0	0	1265	75	1229	0	672	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	149	1940	0	0	1375	82	1336	0	0			
Adj No. of Lanes	1	2	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	175	1867	0	0	2430	145	1386	0	619			
Arrive On Green	0.20	1.00	0.00	0.00	0.39	0.39	0.39	0.00	0.00			
Sat Flow, veh/h	1774	3632	0	0	6493	371	3548	0	1583			
Grp Volume(v), veh/h	149	1940	0	0	1060	397	1336	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1602	1797	1774	0	1583			
Q Serve(g_s), s	9.7	0.0	0.0	0.0	20.7	20.8	44.2	0.0	0.0			
Cycle Q Clear(g_c), s	9.7	0.0	0.0	0.0	20.7	20.8	44.2	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.21	1.00		1.00			
Lane Grp Cap(c), veh/h	175	1867	0	0	1874	701	1386	0	619			
V/C Ratio(X)	0.85	1.04	0.00	0.00	0.57	0.57	0.96	0.00	0.00			
Avail Cap(c_a), veh/h	271	1867	0	0	1874	701	1399	0	624			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.55	0.55	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	47.3	0.0	0.0	0.0	28.7	28.7	35.7	0.0	0.0			
Incr Delay (d2), s/veh	8.5	26.8	0.0	0.0	1.2	3.3	16.1	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.1	6.9	0.0	0.0	9.3	10.9	24.6	0.0	0.0			
LnGrp Delay(d),s/veh	55.8	26.8	0.0	0.0	29.9	32.0	51.9	0.0	0.0			
LnGrp LOS	F	F			C	C	D					
Approach Vol, veh/h		2089			1457			1336				
Approach Delay, s/veh		28.8			30.5			51.9				
Approach LOS		C			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		51.6		68.4			16.5	51.9
Change Period (Y+Rc), s		* 4.7		5.1			* 4.7	5.1
Max Green Setting (Gmax), s		* 47		62.9			* 18	39.9
Max Q Clear Time (g_c+I1), s		46.2		2.0			11.7	22.8
Green Ext Time (p_c), s		0.7		52.7			0.2	16.3

Intersection Summary	
HCM 2010 Ctrl Delay	35.6
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	572	457	116	956	20	256	15	159	21	40	11
Future Volume (veh/h)	4	572	457	116	956	20	256	15	159	21	40	11
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	4	622	497	126	1039	22	278	16	173	23	43	12
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	9	753	640	330	1103	938	286	11	475	67	102	19
Arrive On Green	0.01	0.40	0.40	0.12	0.40	0.40	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	619	36	1583	0	341	62
Grp Volume(v), veh/h	4	622	497	126	1039	22	294	0	173	78	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	655	0	1583	402	0	0
Q Serve(g_s), s	0.2	20.9	19.1	4.6	37.6	0.6	0.0	0.0	6.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	20.9	19.1	4.6	37.6	0.6	21.0	0.0	6.0	21.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.95		1.00	0.29		0.15
Lane Grp Cap(c), veh/h	9	753	640	330	1103	938	297	0	475	187	0	0
V/C Ratio(X)	0.42	0.83	0.78	0.38	0.94	0.02	0.99	0.00	0.36	0.42	0.00	0.00
Avail Cap(c_a), veh/h	127	753	640	330	1103	938	297	0	475	187	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.82	0.82	0.82	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.7	18.6	18.1	26.9	20.0	8.8	28.0	0.0	19.3	19.8	0.0	0.0
Incr Delay (d2), s/veh	27.1	10.1	9.0	0.6	14.1	0.0	49.7	0.0	0.5	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	12.8	9.9	2.3	23.6	0.3	9.7	0.0	2.7	1.2	0.0	0.0
LnGrp Delay(d),s/veh	61.8	28.7	27.1	27.5	34.0	8.8	77.7	0.0	19.7	21.3	0.0	0.0
LnGrp LOS	E	C	C	C	C	A	E		B	C		
Approach Vol, veh/h		1123			1187			467			78	
Approach Delay, s/veh		28.1			32.9			56.2			21.3	
Approach LOS		C			C			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		25.6	18.2	33.4		25.6	5.0	46.7
Change Period (Y+Rc), s		4.6	5.1	* 5.1		4.6	4.6	5.1
Max Green Setting (Gmax), s		21.0	6.4	* 28		21.0	5.0	29.7
Max Q Clear Time (g_c+I1), s		23.0	6.6	22.9		23.0	2.2	39.6
Green Ext Time (p_c), s		0.0	0.0	2.8		0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.5
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	390	338	41	370	7	685	42	70	8	22	68
Future Volume (veh/h)	36	390	338	41	370	7	685	42	70	8	22	68
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	39	424	367	45	402	8	745	46	76	9	24	74
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	535	455	114	597	508	100	0	690	65	141	690
Arrive On Green	0.08	0.57	0.57	0.06	0.32	0.32	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	0	0	1583	0	323	1583
Grp Volume(v), veh/h	39	424	367	45	402	8	791	0	76	33	0	74
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	0	0	1583	323	0	1583
Q Serve(g_s), s	1.5	12.5	12.9	1.7	13.1	0.2	0.0	0.0	2.0	0.0	0.0	1.9
Cycle Q Clear(g_c), s	1.5	12.5	12.9	1.7	13.1	0.2	30.5	0.0	2.0	30.5	0.0	1.9
Prop In Lane	1.00		1.00	1.00		1.00	0.94		1.00	0.27		1.00
Lane Grp Cap(c), veh/h	67	535	455	114	597	508	100	0	690	206	0	690
V/C Ratio(X)	0.58	0.79	0.81	0.39	0.67	0.02	7.92	0.00	0.11	0.16	0.00	0.11
Avail Cap(c_a), veh/h	127	535	455	127	597	508	100	0	690	206	0	690
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	0.69	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.8	13.3	13.4	31.4	20.6	16.2	35.0	0.0	11.7	15.9	0.0	11.7
Incr Delay (d2), s/veh	5.3	8.2	10.3	2.2	6.0	0.1	3134.7	0.0	0.1	0.4	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	7.3	6.6	0.9	7.7	0.1	88.9	0.0	0.9	0.4	0.0	0.8
LnGrp Delay(d),s/veh	37.1	21.5	23.6	33.6	26.6	16.3	3169.7	0.0	11.8	16.2	0.0	11.8
LnGrp LOS	D	C	C	C	C	B	F		B	B		B
Approach Vol, veh/h		830			455			867			107	
Approach Delay, s/veh		23.1			27.1			2892.9			13.1	
Approach LOS		C			C			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		35.2	9.6	25.2		35.2	7.3	27.5
Change Period (Y+Rc), s		* 4.7	5.1	* 5.1		* 4.7	4.6	5.1
Max Green Setting (Gmax), s		* 31	5.0	* 20		* 31	5.0	20.1
Max Q Clear Time (g_c+I1), s		32.5	3.7	14.9		32.5	3.5	15.1
Green Ext Time (p_c), s		0.0	0.0	1.9		0.0	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	1124.9
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	7.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	26	347	112	7	454	143
Future Vol, veh/h	26	347	112	7	454	143
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	377	122	8	493	155

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1268	126	0	0	129	0
Stage 1	126	-	-	-	-	-
Stage 2	1142	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	186	924	-	-	1457	-
Stage 1	900	-	-	-	-	-
Stage 2	304	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	117	924	-	-	1457	-
Mov Cap-2 Maneuver	117	-	-	-	-	-
Stage 1	900	-	-	-	-	-
Stage 2	192	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.1	0	6.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	993	1457	-
HCM Lane V/C Ratio	-	-	0.408	0.339	-
HCM Control Delay (s)	-	-	11.1	8.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	2	1.5	-

Intersection	
Int Delay, s/veh	112.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	554	50	60	234	204	193
Future Vol, veh/h	554	50	60	234	204	193
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	Free
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	602	54	65	254	222	210

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	607	-	222	0	-	0
Stage 1	222	-	-	-	-	-
Stage 2	385	-	-	-	-	-
Critical Hdwy	6.42	-	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	2.218	-	-	-
Pot Cap-1 Maneuver	~ 460	0	1347	-	-	0
Stage 1	815	0	-	-	-	0
Stage 2	688	0	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	~ 434	-	1347	-	-	-
Mov Cap-2 Maneuver	~ 434	-	-	-	-	-
Stage 1	815	-	-	-	-	-
Stage 2	649	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	213.5	1.6	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	1347	-	434	-	-
HCM Lane V/C Ratio	0.048	-	1.387	-	-
HCM Control Delay (s)	7.8	0	213.5	0	-
HCM Lane LOS	A	A	F	A	-
HCM 95th %tile Q(veh)	0.2	-	28.8	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	10.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	372	16	73	290	30	101
Future Vol, veh/h	372	16	73	290	30	101
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	404	17	79	315	33	110

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	254	79	0	-	79	0
Stage 1	79	-	-	-	-	-
Stage 2	175	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	735	981	-	0	1519	-
Stage 1	944	-	-	0	-	-
Stage 2	855	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	718	981	-	-	1519	-
Mov Cap-2 Maneuver	718	-	-	-	-	-
Stage 1	944	-	-	-	-	-
Stage 2	835	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.1	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	WBLn1	SBL	SBT
Capacity (veh/h)	-	741	1519	-
HCM Lane V/C Ratio	-	0.569	0.021	-
HCM Control Delay (s)	-	16.1	7.4	0
HCM Lane LOS	-	C	A	A
HCM 95th %tile Q(veh)	-	3.6	0.1	-

Intersection	
Int Delay, s/veh	12.2

Movement	SET	SER	NWL	NWT	NEL	NER
Traffic Vol, veh/h	262	13	190	223	120	547
Future Vol, veh/h	262	13	190	223	120	547
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	285	14	207	242	130	595

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	299	0	947	292
Stage 1	-	-	-	-	292	-
Stage 2	-	-	-	-	655	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1262	-	290	747
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	517	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1262	-	235	747
Mov Cap-2 Maneuver	-	-	-	-	235	-
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	419	-

Approach	SE	NW	NE
HCM Control Delay, s	0	3.9	22.4
HCM LOS			C

Minor Lane/Major Mvmt	NEL n1	NWL	NWT	SET	SER
Capacity (veh/h)	911	1262	-	-	-
HCM Lane V/C Ratio	0.796	0.164	-	-	-
HCM Control Delay (s)	22.4	8.4	0	-	-
HCM Lane LOS	C	A	A	-	-
HCM 95th %tile Q(veh)	8.6	0.6	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	389	19	15	638	116	13	15	41	96	31	349
Future Volume (veh/h)	230	389	19	15	638	116	13	15	41	96	31	349
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	250	423	21	16	693	0	14	16	45	104	34	379
Adj No. of Lanes	1	1	0	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	280	1159	58	71	1015	862	44	35	282	53	8	282
Arrive On Green	0.16	0.66	0.66	0.08	1.00	0.00	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	1760	87	1774	1863	1583	0	199	1583	0	43	1583
Grp Volume(v), veh/h	250	0	444	16	693	0	30	0	45	138	0	379
Grp Sat Flow(s),veh/h/ln	1774	0	1847	1774	1863	1583	199	0	1583	43	0	1583
Q Serve(g_s), s	16.6	0.0	13.0	1.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0	21.4
Cycle Q Clear(g_c), s	16.6	0.0	13.0	1.0	0.0	0.0	21.4	0.0	2.9	21.4	0.0	21.4
Prop In Lane	1.00		0.05	1.00		1.00	0.47		1.00	0.75		1.00
Lane Grp Cap(c), veh/h	280	0	1216	71	1015	862	79	0	282	60	0	282
V/C Ratio(X)	0.89	0.00	0.37	0.23	0.68	0.00	0.38	0.00	0.16	2.29	0.00	1.34
Avail Cap(c_a), veh/h	361	0	1216	78	1015	862	79	0	282	60	0	282
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.99	0.99	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.5	0.0	9.2	53.5	0.0	0.0	42.7	0.0	41.7	57.3	0.0	49.3
Incr Delay (d2), s/veh	19.7	0.0	0.8	1.6	3.7	0.0	2.9	0.0	0.3	630.0	0.0	175.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	0.0	6.8	0.5	1.0	0.0	0.9	0.0	1.3	12.5	0.0	23.2
LnGrp Delay(d),s/veh	69.3	0.0	10.1	55.0	3.7	0.0	45.6	0.0	42.0	687.3	0.0	225.2
LnGrp LOS	F		B	F	A		D		D	F		F
Approach Vol, veh/h		694			709			75			517	
Approach Delay, s/veh		31.4			4.9			43.4			348.5	
Approach LOS		C			A			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		26.0	9.9	84.1		26.0	23.5	70.5
Change Period (Y+Rc), s		4.6	5.1	* 5.1		4.6	4.6	5.1
Max Green Setting (Gmax), s		21.4	5.3	* 79		21.4	24.4	59.9
Max Q Clear Time (g_c+I1), s		23.4	3.0	15.0		23.4	18.6	2.0
Green Ext Time (p_c), s		0.0	0.0	3.2		0.0	0.4	5.9

Intersection Summary	
HCM 2010 Ctrl Delay	104.6
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	327	119	53	9	104	39	30	48	27	101	60	645
Future Volume (veh/h)	327	119	53	9	104	39	30	48	27	101	60	645
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	355	129	58	10	113	42	33	52	29	110	65	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	706	247	102	96	866	307	127	145	67	239	101	0
Arrive On Green	0.23	0.23	0.23	0.69	0.69	0.69	0.15	0.15	0.15	0.15	0.15	0.00
Sat Flow, veh/h	884	359	149	48	1262	447	332	965	443	936	669	0
Grp Volume(v), veh/h	542	0	0	165	0	0	114	0	0	175	0	0
Grp Sat Flow(s),veh/h/ln	1392	0	0	1757	0	0	1740	0	0	1605	0	0
Q Serve(g_s), s	18.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0
Cycle Q Clear(g_c), s	20.4	0.0	0.0	1.9	0.0	0.0	3.5	0.0	0.0	6.0	0.0	0.0
Prop In Lane	0.65		0.11	0.06		0.25	0.29		0.25	0.63		0.00
Lane Grp Cap(c), veh/h	1054	0	0	1269	0	0	339	0	0	339	0	0
V/C Ratio(X)	0.51	0.00	0.00	0.13	0.00	0.00	0.34	0.00	0.00	0.52	0.00	0.00
Avail Cap(c_a), veh/h	1054	0	0	1269	0	0	579	0	0	560	0	0
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.9	0.0	0.0	3.3	0.0	0.0	23.1	0.0	0.0	24.0	0.0	0.0
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.2	0.0	0.0	0.6	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	0.0	0.0	1.0	0.0	0.0	1.8	0.0	0.0	2.8	0.0	0.0
LnGrp Delay(d),s/veh	16.6	0.0	0.0	3.5	0.0	0.0	23.7	0.0	0.0	25.2	0.0	0.0
LnGrp LOS	B			A			C			C		
Approach Vol, veh/h		542			165			114			175	
Approach Delay, s/veh		16.6			3.5			23.7			25.2	
Approach LOS		B			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		13.7		46.3		13.7		46.3
Change Period (Y+Rc), s		* 4.7		5.1		* 4.7		5.1
Max Green Setting (Gmax), s		* 18		32.2		* 18		32.2
Max Q Clear Time (g_c+I1), s		5.5		22.4		8.0		3.9
Green Ext Time (p_c), s		1.3		3.4		1.2		5.5

Intersection Summary	
HCM 2010 Ctrl Delay	16.8
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	943	1140	468	2120	0	0	0	0	33	0	118
Future Volume (veh/h)	0	943	1140	468	2120	0	0	0	0	33	0	118
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	1025	1239	509	2304	0				36	0	0
Adj No. of Lanes	0	2	2	2	2	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1578	1342	1188	2959	0				124	0	55
Arrive On Green	0.00	0.42	0.42	0.46	1.00	0.00				0.04	0.00	0.00
Sat Flow, veh/h	0	3725	3167	3442	3632	0				3548	0	1583
Grp Volume(v), veh/h	0	1025	1239	509	2304	0				36	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	16.6	28.2	7.6	0.0	0.0				0.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	16.6	28.2	7.6	0.0	0.0				0.8	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1578	1342	1188	2959	0				124	0	55
V/C Ratio(X)	0.00	0.65	0.92	0.43	0.78	0.00				0.29	0.00	0.00
Avail Cap(c_a), veh/h	0	1578	1342	1188	2959	0				840	0	375
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.38	0.38	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	17.4	20.7	15.5	0.0	0.0				35.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.1	12.0	0.1	0.8	0.0				1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.0	14.5	3.6	0.3	0.0				0.4	0.0	0.0
LnGrp Delay(d),s/veh	0.0	19.5	32.7	15.6	0.8	0.0				37.0	0.0	0.0
LnGrp LOS		B	C	B	A					D		
Approach Vol, veh/h		2264			2813						36	
Approach Delay, s/veh		26.7			3.5						37.0	
Approach LOS		C			A						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			31.3	37.3		7.4		68.6
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			11.3	* 32		18.0		48.2
Max Q Clear Time (g_c+I1), s			9.6	30.2		2.8		2.0
Green Ext Time (p_c), s			1.4	1.8		0.1		37.3

Intersection Summary	
HCM 2010 Ctrl Delay	14.0
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	947	0	0	2358	135	684	2	396	0	0	0
Future Volume (veh/h)	91	947	0	0	2358	135	684	2	396	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	99	1029	0	0	2563	147	744	0	0			
Adj No. of Lanes	1	2	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	185	2231	0	0	2869	164	854	0	381			
Arrive On Green	0.10	0.63	0.00	0.00	0.46	0.46	0.24	0.00	0.00			
Sat Flow, veh/h	1774	3632	0	0	6509	357	3548	0	1583			
Grp Volume(v), veh/h	99	1029	0	0	1969	741	744	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1602	1800	1774	0	1583			
Q Serve(g_s), s	4.0	11.5	0.0	0.0	28.5	28.8	15.3	0.0	0.0			
Cycle Q Clear(g_c), s	4.0	11.5	0.0	0.0	28.5	28.8	15.3	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.20	1.00		1.00			
Lane Grp Cap(c), veh/h	185	2231	0	0	2207	826	854	0	381			
V/C Ratio(X)	0.54	0.46	0.00	0.00	0.89	0.90	0.87	0.00	0.00			
Avail Cap(c_a), veh/h	185	2231	0	0	2207	826	948	0	423			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.65	0.65	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	32.3	7.3	0.0	0.0	18.8	18.9	27.7	0.0	0.0			
Incr Delay (d2), s/veh	2.0	0.4	0.0	0.0	6.0	14.4	8.3	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.1	5.7	0.0	0.0	13.6	17.5	8.4	0.0	0.0			
LnGrp Delay(d),s/veh	34.3	7.8	0.0	0.0	24.8	33.3	36.0	0.0	0.0			
LnGrp LOS	C	A			C	C	D					
Approach Vol, veh/h		1128			2710			744				
Approach Delay, s/veh		10.1			27.2			36.0				
Approach LOS		B			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		23.0		53.0			13.0	40.0
Change Period (Y+Rc), s		* 4.7		5.1			5.1	* 5.1
Max Green Setting (Gmax), s		* 20		45.9			6.3	* 35
Max Q Clear Time (g_c+I1), s		17.3		13.5			6.0	30.8
Green Ext Time (p_c), s		1.0		9.4			0.2	3.9

Intersection Summary	
HCM 2010 Ctrl Delay	24.4
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	521	363	149	540	14	186	18	186	13	20	8
Future Volume (veh/h)	7	521	363	149	540	14	186	18	186	13	20	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	8	566	395	162	587	15	202	20	202	14	22	9
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	18	743	631	231	979	832	265	17	437	62	82	21
Arrive On Green	0.01	0.40	0.40	0.13	0.53	0.53	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	632	63	1583	0	297	74
Grp Volume(v), veh/h	8	566	395	162	587	15	222	0	202	45	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	694	0	1583	372	0	0
Q Serve(g_s), s	0.3	19.9	15.2	6.6	16.6	0.3	0.0	0.0	8.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	19.9	15.2	6.6	16.6	0.3	21.0	0.0	8.0	21.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.91		1.00	0.31		0.20
Lane Grp Cap(c), veh/h	18	743	631	231	979	832	282	0	437	165	0	0
V/C Ratio(X)	0.44	0.76	0.63	0.70	0.60	0.02	0.79	0.00	0.46	0.27	0.00	0.00
Avail Cap(c_a), veh/h	117	743	631	243	979	832	282	0	437	165	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	37.4	19.7	18.3	31.6	12.5	8.6	28.9	0.0	22.8	22.2	0.0	0.0
Incr Delay (d2), s/veh	15.9	7.3	4.6	7.6	2.5	0.0	13.6	0.0	0.8	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	11.7	7.4	3.7	9.2	0.2	5.7	0.0	3.6	0.7	0.0	0.0
LnGrp Delay(d),s/veh	53.3	27.0	22.9	39.3	15.0	8.7	42.6	0.0	23.6	23.1	0.0	0.0
LnGrp LOS	D	C	C	D	B	A	D		C	C		
Approach Vol, veh/h		969			764			424			45	
Approach Delay, s/veh		25.6			20.0			33.5			23.1	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		25.6	15.0	35.4		25.6	5.4	45.0
Change Period (Y+Rc), s		4.6	5.1	* 5.1		4.6	4.6	5.1
Max Green Setting (Gmax), s		21.0	10.4	* 30		21.0	5.0	35.7
Max Q Clear Time (g_c+I1), s		23.0	8.6	21.9		23.0	2.3	18.6
Green Ext Time (p_c), s		0.0	0.2	3.4		0.0	0.0	4.2

Intersection Summary	
HCM 2010 Ctrl Delay	25.1
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	185	467	50	389	7	251	26	19	3	19	69
Future Volume (veh/h)	38	185	467	50	389	7	251	26	19	3	19	69
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	41	201	508	54	423	8	273	28	21	3	21	75
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	831	706	79	757	644	90	0	506	53	275	506
Arrive On Green	0.13	0.74	0.74	0.04	0.41	0.41	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	0	0	1583	0	861	1583
Grp Volume(v), veh/h	41	201	508	54	423	8	301	0	21	24	0	75
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	0	0	1583	861	0	1583
Q Serve(g_s), s	1.6	2.6	13.4	2.3	13.3	0.2	0.0	0.0	0.7	0.0	0.0	2.6
Cycle Q Clear(g_c), s	1.6	2.6	13.4	2.3	13.3	0.2	24.3	0.0	0.7	24.3	0.0	2.6
Prop In Lane	1.00		1.00	1.00		1.00	0.91		1.00	0.12		1.00
Lane Grp Cap(c), veh/h	138	831	706	79	757	644	90	0	506	329	0	506
V/C Ratio(X)	0.30	0.24	0.72	0.68	0.56	0.01	3.33	0.00	0.04	0.07	0.00	0.15
Avail Cap(c_a), veh/h	149	831	706	154	757	644	90	0	506	329	0	506
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.77	0.77	0.77	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.2	5.7	7.1	35.8	17.3	13.4	38.0	0.0	17.8	18.9	0.0	18.5
Incr Delay (d2), s/veh	0.9	0.5	4.8	9.8	3.0	0.0	1077.2	0.0	0.0	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.4	6.5	1.3	7.4	0.1	28.9	0.0	0.3	0.4	0.0	1.1
LnGrp Delay(d),s/veh	32.1	6.2	11.9	45.5	20.3	13.5	1115.2	0.0	17.9	19.0	0.0	18.6
LnGrp LOS	C	A	B	D	C	B	F		B	B		B
Approach Vol, veh/h		750			485			322			99	
Approach Delay, s/veh		11.5			23.0			1043.7			18.7	
Approach LOS		B			C			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		29.0	8.0	39.0		29.0	11.0	36.0
Change Period (Y+Rc), s		* 4.7	4.6	5.1		* 4.7	5.1	* 5.1
Max Green Setting (Gmax), s		* 24	6.6	30.7		* 24	6.4	* 31
Max Q Clear Time (g_c+I1), s		26.3	4.3	15.4		26.3	3.6	15.3
Green Ext Time (p_c), s		0.0	0.0	3.0		0.0	0.8	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	216.0
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	7.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	14	294	103	1	423	106
Future Vol, veh/h	14	294	103	1	423	106
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	320	112	1	460	115

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1147	112	0	0	113	0
Stage 1	112	-	-	-	-	-
Stage 2	1035	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	220	941	-	-	1476	-
Stage 1	913	-	-	-	-	-
Stage 2	342	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	147	941	-	-	1476	-
Mov Cap-2 Maneuver	147	-	-	-	-	-
Stage 1	913	-	-	-	-	-
Stage 2	228	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.5	0	6.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	986	1476	-
HCM Lane V/C Ratio	-	-	0.34	0.312	-
HCM Control Delay (s)	-	-	10.5	8.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.5	1.3	-

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	133	50	152	204	314	227
Future Vol, veh/h	133	50	152	204	314	227
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	Free
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	145	54	165	222	341	247

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	893	-	341	0	-	0
Stage 1	341	-	-	-	-	-
Stage 2	552	-	-	-	-	-
Critical Hdwy	6.42	-	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	2.218	-	-	-
Pot Cap-1 Maneuver	312	0	1218	-	-	0
Stage 1	720	0	-	-	-	0
Stage 2	577	0	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	264	-	1218	-	-	-
Mov Cap-2 Maneuver	264	-	-	-	-	-
Stage 1	720	-	-	-	-	-
Stage 2	488	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	34	3.6	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	1218	-	264	-	-
HCM Lane V/C Ratio	0.136	-	0.548	-	-
HCM Control Delay (s)	8.4	0	34	0	-
HCM Lane LOS	A	A	D	A	-
HCM 95th %tile Q(veh)	0.5	-	3	-	-

Intersection	
Int Delay, s/veh	8.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	282	19	62	830	31	50
Future Vol, veh/h	282	19	62	830	31	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	307	21	67	902	34	54

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	189	67	0	-	67	0
Stage 1	67	-	-	-	-	-
Stage 2	122	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	800	997	-	0	1535	-
Stage 1	956	-	-	0	-	-
Stage 2	903	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	782	997	-	-	1535	-
Mov Cap-2 Maneuver	782	-	-	-	-	-
Stage 1	956	-	-	-	-	-
Stage 2	882	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.1	0	2.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	SBL	SBT
Capacity (veh/h)	-	835	1535	-
HCM Lane V/C Ratio	-	0.392	0.022	-
HCM Control Delay (s)	-	12.1	7.4	0
HCM Lane LOS	-	B	A	A
HCM 95th %tile Q(veh)	-	1.9	0.1	-

Intersection	
Int Delay, s/veh	39

Movement	SET	SER	NWL	NWT	NEL	NER
Traffic Vol, veh/h	511	2	230	451	95	240
Future Vol, veh/h	511	2	230	451	95	240
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	555	2	250	490	103	261

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	558	0	1547	557
Stage 1	-	-	-	-	557	-
Stage 2	-	-	-	-	990	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1013	-	126	530
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	360	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1013	-	~ 83	530
Mov Cap-2 Maneuver	-	-	-	-	~ 83	-
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	238	-

Approach	SE	NW	NE
HCM Control Delay, s	0	3.3	171.2
HCM LOS			F

Minor Lane/Major Mvmt	NEL n1	NWL	NWT	SET	SER
Capacity (veh/h)	293	1013	-	-	-
HCM Lane V/C Ratio	1.243	0.247	-	-	-
HCM Control Delay (s)	171.2	9.7	0	-	-
HCM Lane LOS	F	A	A	-	-
HCM 95th %tile Q(veh)	16.9	1	-	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	538	560	10	22	546	275	5	15	64	49	13	253
Future Volume (veh/h)	538	560	10	22	546	275	5	15	64	49	13	253
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	585	609	11	24	593	0	5	16	70	53	14	275
Adj No. of Lanes	1	1	0	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	611	1245	22	80	721	613	37	91	236	54	8	236
Arrive On Green	0.34	0.68	0.68	0.09	0.77	0.00	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1774	1824	33	1774	1863	1583	0	608	1583	0	55	1583
Grp Volume(v), veh/h	585	0	620	24	593	0	21	0	70	67	0	275
Grp Sat Flow(s),veh/h/ln	1774	0	1857	1774	1863	1583	608	0	1583	55	0	1583
Q Serve(g_s), s	38.7	0.0	19.1	1.5	23.7	0.0	0.0	0.0	4.7	0.0	0.0	17.9
Cycle Q Clear(g_c), s	38.7	0.0	19.1	1.5	23.7	0.0	17.9	0.0	4.7	17.9	0.0	17.9
Prop In Lane	1.00		0.02	1.00		1.00	0.24		1.00	0.79		1.00
Lane Grp Cap(c), veh/h	611	0	1267	80	721	613	128	0	236	62	0	236
V/C Ratio(X)	0.96	0.00	0.49	0.30	0.82	0.00	0.16	0.00	0.30	1.08	0.00	1.16
Avail Cap(c_a), veh/h	642	0	1267	87	721	613	128	0	236	62	0	236
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.93	0.93	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.5	0.0	9.1	52.8	11.0	0.0	44.5	0.0	45.4	57.7	0.0	51.0
Incr Delay (d2), s/veh	24.8	0.0	1.4	1.9	9.6	0.0	0.6	0.0	0.7	138.8	0.0	110.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.1	0.0	10.1	0.8	13.4	0.0	0.6	0.0	2.1	4.4	0.0	15.0
LnGrp Delay(d),s/veh	63.3	0.0	10.4	54.8	20.6	0.0	45.1	0.0	46.1	198.3	0.0	161.2
LnGrp LOS	E		B	D	C		D		D	F		F
Approach Vol, veh/h		1205			617			91			342	
Approach Delay, s/veh		36.1			21.9			45.9			168.5	
Approach LOS		D			C			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		22.5	10.5	87.0		22.5	45.9	51.6
Change Period (Y+Rc), s		4.6	5.1	* 5.1		4.6	4.6	5.1
Max Green Setting (Gmax), s		17.9	5.9	* 82		17.9	43.4	44.4
Max Q Clear Time (g_c+I1), s		19.9	3.5	21.1		19.9	40.7	25.7
Green Ext Time (p_c), s		0.0	0.9	5.0		0.0	0.6	3.9

Intersection Summary	
HCM 2010 Ctrl Delay	52.7
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	535	120	22	38	201	59	23	84	37	73	56	628
Future Volume (veh/h)	535	120	22	38	201	59	23	84	37	73	56	628
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	582	130	24	41	218	64	25	91	40	79	61	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	797	154	28	172	866	240	94	153	61	204	114	0
Arrive On Green	1.00	1.00	1.00	0.70	0.70	0.70	0.14	0.14	0.14	0.14	0.14	0.00
Sat Flow, veh/h	983	220	41	149	1235	342	176	1123	448	813	841	0
Grp Volume(v), veh/h	736	0	0	323	0	0	156	0	0	140	0	0
Grp Sat Flow(s),veh/h/ln	1244	0	0	1726	0	0	1747	0	0	1654	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	3.9	0.0	0.0	4.9	0.0	0.0	4.4	0.0	0.0
Prop In Lane	0.79		0.03	0.13		0.20	0.16		0.26	0.56		0.00
Lane Grp Cap(c), veh/h	979	0	0	1277	0	0	307	0	0	319	0	0
V/C Ratio(X)	0.75	0.00	0.00	0.25	0.00	0.00	0.51	0.00	0.00	0.44	0.00	0.00
Avail Cap(c_a), veh/h	979	0	0	1277	0	0	583	0	0	559	0	0
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	3.3	0.0	0.0	24.5	0.0	0.0	24.3	0.0	0.0
Incr Delay (d2), s/veh	4.9	0.0	0.0	0.5	0.0	0.0	1.3	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	2.1	0.0	0.0	2.5	0.0	0.0	2.3	0.0	0.0
LnGrp Delay(d),s/veh	4.9	0.0	0.0	3.7	0.0	0.0	25.8	0.0	0.0	25.2	0.0	0.0
LnGrp LOS	A			A			C			C		
Approach Vol, veh/h		736			323			156			140	
Approach Delay, s/veh		4.9			3.7			25.8			25.2	
Approach LOS		A			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		12.9		47.1		12.9		47.1
Change Period (Y+Rc), s		* 4.7		5.1		* 4.7		5.1
Max Green Setting (Gmax), s		* 18		32.2		* 18		32.2
Max Q Clear Time (g_c+I1), s		6.9		2.0		6.4		5.9
Green Ext Time (p_c), s		1.3		10.3		1.3		9.8

Intersection Summary	
HCM 2010 Ctrl Delay	9.1
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1568	1079	163	3070	0	0	0	0	102	0	234
Future Volume (veh/h)	0	1568	1079	163	3070	0	0	0	0	102	0	234
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	1590	1249	177	3337	0				111	0	0
Adj No. of Lanes	0	2	2	2	2	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2269	1929	752	3080	0				171	0	76
Arrive On Green	0.00	0.61	0.61	0.44	1.00	0.00				0.05	0.00	0.00
Sat Flow, veh/h	0	3725	3167	3442	3632	0				3548	0	1583
Grp Volume(v), veh/h	0	1590	1249	177	3337	0				111	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	34.9	30.5	3.9	104.4	0.0				3.7	0.0	0.0
Cycle Q Clear(g_c), s	0.0	34.9	30.5	3.9	104.4	0.0				3.7	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2269	1929	752	3080	0				171	0	76
V/C Ratio(X)	0.00	0.70	0.65	0.24	1.08	0.00				0.65	0.00	0.00
Avail Cap(c_a), veh/h	0	2269	1929	752	3080	0				571	0	255
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.59	0.59	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	16.0	15.1	27.5	0.0	0.0				56.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.8	1.7	0.1	41.7	0.0				4.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	18.5	13.6	1.8	17.8	0.0				1.9	0.0	0.0
LnGrp Delay(d),s/veh	0.0	17.8	16.8	27.6	41.7	0.0				60.2	0.0	0.0
LnGrp LOS		B	B	C	F					F		
Approach Vol, veh/h		2839			3514						111	
Approach Delay, s/veh		17.4			41.0						60.2	
Approach LOS		B			D						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			31.3	78.2		10.5		109.5
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			13.1	* 73		19.3		90.9
Max Q Clear Time (g_c+I1), s			5.9	36.9		5.7		106.4
Green Ext Time (p_c), s			6.9	27.1		0.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	30.9
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	1740	0	0	1240	62	1229	0	663	0	0	0
Future Volume (veh/h)	137	1740	0	0	1240	62	1229	0	663	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	149	1891	0	0	1348	67	1336	0	0			
Adj No. of Lanes	1	2	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	175	1867	0	0	2456	122	1386	0	619			
Arrive On Green	0.20	1.00	0.00	0.00	0.39	0.39	0.39	0.00	0.00			
Sat Flow, veh/h	1774	3632	0	0	6562	313	3548	0	1583			
Grp Volume(v), veh/h	149	1891	0	0	1028	387	1336	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1602	1808	1774	0	1583			
Q Serve(g_s), s	9.7	0.0	0.0	0.0	19.9	20.0	44.2	0.0	0.0			
Cycle Q Clear(g_c), s	9.7	0.0	0.0	0.0	19.9	20.0	44.2	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.17	1.00		1.00			
Lane Grp Cap(c), veh/h	175	1867	0	0	1874	705	1386	0	619			
V/C Ratio(X)	0.85	1.01	0.00	0.00	0.55	0.55	0.96	0.00	0.00			
Avail Cap(c_a), veh/h	271	1867	0	0	1874	705	1399	0	624			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.56	0.56	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	47.3	0.0	0.0	0.0	28.4	28.4	35.7	0.0	0.0			
Incr Delay (d2), s/veh	8.7	18.8	0.0	0.0	1.2	3.1	16.1	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.1	4.9	0.0	0.0	9.0	10.6	24.6	0.0	0.0			
LnGrp Delay(d),s/veh	56.0	18.8	0.0	0.0	29.6	31.5	51.9	0.0	0.0			
LnGrp LOS	F	F			C	C	D					
Approach Vol, veh/h		2040			1415			1336				
Approach Delay, s/veh		21.5			30.1			51.9				
Approach LOS		C			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		51.6		68.4			16.5	51.9
Change Period (Y+Rc), s		* 4.7		5.1			* 4.7	5.1
Max Green Setting (Gmax), s		* 47		62.9			* 18	39.9
Max Q Clear Time (g_c+I1), s		46.2		2.0			11.7	22.0
Green Ext Time (p_c), s		0.7		51.6			0.2	17.0

Intersection Summary	
HCM 2010 Ctrl Delay	32.5
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	540	305	116	713	20	238	15	159	21	40	11
Future Volume (veh/h)	4	540	305	116	713	20	238	15	159	21	40	11
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	4	587	332	126	775	22	259	16	173	23	43	12
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	9	753	640	398	1174	998	285	11	475	67	102	19
Arrive On Green	0.01	0.40	0.40	0.07	0.21	0.21	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	619	38	1583	0	341	62
Grp Volume(v), veh/h	4	587	332	126	775	22	275	0	173	78	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	657	0	1583	402	0	0
Q Serve(g_s), s	0.2	19.2	11.1	4.7	26.7	0.8	0.0	0.0	6.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	19.2	11.1	4.7	26.7	0.8	21.0	0.0	6.0	21.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.94		1.00	0.29		0.15
Lane Grp Cap(c), veh/h	9	753	640	398	1174	998	297	0	475	187	0	0
V/C Ratio(X)	0.42	0.78	0.52	0.32	0.66	0.02	0.93	0.00	0.36	0.42	0.00	0.00
Avail Cap(c_a), veh/h	127	753	640	398	1174	998	297	0	475	187	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.86	0.86	0.86	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.7	18.1	15.7	27.3	20.8	10.6	27.5	0.0	19.3	19.8	0.0	0.0
Incr Delay (d2), s/veh	27.1	7.8	3.0	0.4	2.5	0.0	33.5	0.0	0.5	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	11.4	5.3	2.4	14.6	0.3	8.0	0.0	2.7	1.2	0.0	0.0
LnGrp Delay(d),s/veh	61.8	26.0	18.7	27.7	23.4	10.6	61.0	0.0	19.7	21.3	0.0	0.0
LnGrp LOS	E	C	B	C	C	B	E		B	C		
Approach Vol, veh/h		923			923			448			78	
Approach Delay, s/veh		23.5			23.6			45.0			21.3	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		25.6	21.0	33.4		25.6	5.0	49.5
Change Period (Y+Rc), s		4.6	5.1	* 5.1		4.6	4.6	5.1
Max Green Setting (Gmax), s		21.0	6.4	* 28		21.0	5.0	29.7
Max Q Clear Time (g_c+I1), s		23.0	6.7	21.2		23.0	2.2	28.7
Green Ext Time (p_c), s		0.0	0.0	3.0		0.0	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	27.6
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	371	325	41	343	7	469	42	70	8	22	68
Future Volume (veh/h)	36	371	325	41	343	7	469	42	70	8	22	68
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	39	403	353	45	373	8	510	46	76	9	24	74
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	535	455	114	597	508	99	0	690	65	141	690
Arrive On Green	0.08	0.57	0.57	0.06	0.32	0.32	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	0	0	1583	0	323	1583
Grp Volume(v), veh/h	39	403	353	45	373	8	556	0	76	33	0	74
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	0	0	1583	323	0	1583
Q Serve(g_s), s	1.5	11.4	12.0	1.7	11.9	0.2	0.0	0.0	2.0	0.0	0.0	1.9
Cycle Q Clear(g_c), s	1.5	11.4	12.0	1.7	11.9	0.2	30.5	0.0	2.0	30.5	0.0	1.9
Prop In Lane	1.00		1.00	1.00		1.00	0.92		1.00	0.27		1.00
Lane Grp Cap(c), veh/h	67	535	455	114	597	508	99	0	690	206	0	690
V/C Ratio(X)	0.58	0.75	0.78	0.39	0.62	0.02	5.64	0.00	0.11	0.16	0.00	0.11
Avail Cap(c_a), veh/h	127	535	455	127	597	508	99	0	690	206	0	690
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.75	0.75	0.75	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.8	13.0	13.2	31.4	20.2	16.2	35.0	0.0	11.7	15.9	0.0	11.7
Incr Delay (d2), s/veh	5.8	7.2	9.4	2.2	4.9	0.1	2109.4	0.0	0.1	0.4	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	6.7	6.3	0.9	6.9	0.1	59.7	0.0	0.9	0.4	0.0	0.8
LnGrp Delay(d),s/veh	37.6	20.3	22.6	33.6	25.1	16.3	2144.4	0.0	11.8	16.2	0.0	11.8
LnGrp LOS	D	C	C	C	C	B	F		B	B		B
Approach Vol, veh/h		795			426			632			107	
Approach Delay, s/veh		22.1			25.8			1888.0			13.1	
Approach LOS		C			C			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		35.2	9.6	25.2		35.2	7.3	27.5
Change Period (Y+Rc), s		* 4.7	5.1	* 5.1		* 4.7	4.6	5.1
Max Green Setting (Gmax), s		* 31	5.0	* 20		* 31	5.0	20.1
Max Q Clear Time (g_c+I1), s		32.5	3.7	14.0		32.5	3.5	13.9
Green Ext Time (p_c), s		0.0	0.0	2.0		0.0	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	624.1
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	6.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	26	329	112	7	302	143
Future Vol, veh/h	26	329	112	7	302	143
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	358	122	8	328	155

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	938	126	0	0	129	0
Stage 1	126	-	-	-	-	-
Stage 2	812	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	293	924	-	-	1457	-
Stage 1	900	-	-	-	-	-
Stage 2	437	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	221	924	-	-	1457	-
Mov Cap-2 Maneuver	221	-	-	-	-	-
Stage 1	900	-	-	-	-	-
Stage 2	329	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	5.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	997	1457	-
HCM Lane V/C Ratio	-	-	0.387	0.225	-
HCM Control Delay (s)	-	-	10.9	8.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.8	0.9	-

Intersection	
Int Delay, s/veh	18.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	338	50	60	234	204	180
Future Vol, veh/h	338	50	60	234	204	180
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	Free
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	367	54	65	254	222	196

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	607	-	222	0	-	0
Stage 1	222	-	-	-	-	-
Stage 2	385	-	-	-	-	-
Critical Hdwy	6.42	-	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	2.218	-	-	-
Pot Cap-1 Maneuver	460	0	1347	-	-	0
Stage 1	815	0	-	-	-	0
Stage 2	688	0	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	434	-	1347	-	-	-
Mov Cap-2 Maneuver	434	-	-	-	-	-
Stage 1	815	-	-	-	-	-
Stage 2	649	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	44.7	1.6	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	1347	-	434	-	-
HCM Lane V/C Ratio	0.048	-	0.847	-	-
HCM Control Delay (s)	7.8	0	44.7	0	-
HCM Lane LOS	A	A	E	A	-
HCM 95th %tile Q(veh)	0.2	-	8.3	-	-

Intersection	
Int Delay, s/veh	10.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	372	16	73	315	30	101
Future Vol, veh/h	372	16	73	315	30	101
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	404	17	79	342	33	110

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	254	79	0	-	79	0
Stage 1	79	-	-	-	-	-
Stage 2	175	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	735	981	-	0	1519	-
Stage 1	944	-	-	0	-	-
Stage 2	855	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	718	981	-	-	1519	-
Mov Cap-2 Maneuver	718	-	-	-	-	-
Stage 1	944	-	-	-	-	-
Stage 2	835	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.1	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	WBLn1	SBL	SBT
Capacity (veh/h)	-	741	1519	-
HCM Lane V/C Ratio	-	0.569	0.021	-
HCM Control Delay (s)	-	16.1	7.4	0
HCM Lane LOS	-	C	A	A
HCM 95th %tile Q(veh)	-	3.6	0.1	-

Intersection	
Int Delay, s/veh	14.9

Movement	SET	SER	NWL	NWT	NEL	NER
Traffic Vol, veh/h	262	13	190	223	120	585
Future Vol, veh/h	262	13	190	223	120	585
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	285	14	207	242	130	636

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	299	0	947	292
Stage 1	-	-	-	-	292	-
Stage 2	-	-	-	-	655	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1262	-	290	747
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	517	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1262	-	235	747
Mov Cap-2 Maneuver	-	-	-	-	235	-
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	419	-

Approach	SE	NW	NE
HCM Control Delay, s	0	3.9	27.1
HCM LOS			D

Minor Lane/Major Mvmt	NEL n1	NWL	NWT	SET	SER
Capacity (veh/h)	900	1262	-	-	-
HCM Lane V/C Ratio	0.851	0.164	-	-	-
HCM Control Delay (s)	27.1	8.4	0	-	-
HCM Lane LOS	D	A	A	-	-
HCM 95th %tile Q(veh)	10.5	0.6	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	255	389	19	15	676	116	13	15	41	96	31	349
Future Volume (veh/h)	255	389	19	15	676	116	13	15	41	96	31	349
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	277	423	21	16	735	0	14	16	45	104	34	379
Adj No. of Lanes	1	1	0	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	306	1159	58	71	987	839	44	35	282	53	8	282
Arrive On Green	0.17	0.66	0.66	0.08	1.00	0.00	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	1760	87	1774	1863	1583	0	199	1583	0	43	1583
Grp Volume(v), veh/h	277	0	444	16	735	0	30	0	45	138	0	379
Grp Sat Flow(s),veh/h/ln	1774	0	1847	1774	1863	1583	199	0	1583	43	0	1583
Q Serve(g_s), s	18.4	0.0	13.0	1.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0	21.4
Cycle Q Clear(g_c), s	18.4	0.0	13.0	1.0	0.0	0.0	21.4	0.0	2.9	21.4	0.0	21.4
Prop In Lane	1.00		0.05	1.00		1.00	0.47		1.00	0.75		1.00
Lane Grp Cap(c), veh/h	306	0	1216	71	987	839	79	0	282	60	0	282
V/C Ratio(X)	0.91	0.00	0.37	0.23	0.74	0.00	0.38	0.00	0.16	2.29	0.00	1.34
Avail Cap(c_a), veh/h	361	0	1216	78	987	839	79	0	282	60	0	282
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.99	0.99	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.7	0.0	9.2	53.5	0.0	0.0	42.7	0.0	41.7	57.3	0.0	49.3
Incr Delay (d2), s/veh	23.2	0.0	0.8	1.6	5.0	0.0	2.9	0.0	0.3	630.0	0.0	175.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.0	0.0	6.8	0.5	1.4	0.0	0.9	0.0	1.3	12.5	0.0	23.2
LnGrp Delay(d),s/veh	71.9	0.0	10.1	55.0	5.0	0.0	45.6	0.0	42.0	687.3	0.0	225.2
LnGrp LOS	F		B	F	A		D		D	F		F
Approach Vol, veh/h		721			751			75			517	
Approach Delay, s/veh		33.8			6.1			43.4			348.5	
Approach LOS		C			A			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		26.0	9.9	84.1		26.0	25.3	68.7
Change Period (Y+Rc), s		4.6	5.1	* 5.1		4.6	4.6	5.1
Max Green Setting (Gmax), s		21.4	5.3	* 79		21.4	24.4	59.9
Max Q Clear Time (g_c+I1), s		23.4	3.0	15.0		23.4	20.4	2.0
Green Ext Time (p_c), s		0.0	0.2	3.2		0.0	0.3	6.5

Intersection Summary	
HCM 2010 Ctrl Delay	102.9
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	327	119	53	9	104	39	30	48	27	101	60	683
Future Volume (veh/h)	327	119	53	9	104	39	30	48	27	101	60	683
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	355	129	58	10	113	42	33	52	29	110	65	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	706	247	102	96	866	307	127	145	67	239	101	0
Arrive On Green	0.23	0.23	0.23	0.69	0.69	0.69	0.15	0.15	0.15	0.15	0.15	0.00
Sat Flow, veh/h	884	359	149	48	1262	447	332	965	443	936	669	0
Grp Volume(v), veh/h	542	0	0	165	0	0	114	0	0	175	0	0
Grp Sat Flow(s),veh/h/ln	1392	0	0	1757	0	0	1740	0	0	1605	0	0
Q Serve(g_s), s	18.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0
Cycle Q Clear(g_c), s	20.4	0.0	0.0	1.9	0.0	0.0	3.5	0.0	0.0	6.0	0.0	0.0
Prop In Lane	0.65		0.11	0.06		0.25	0.29		0.25	0.63		0.00
Lane Grp Cap(c), veh/h	1054	0	0	1269	0	0	339	0	0	339	0	0
V/C Ratio(X)	0.51	0.00	0.00	0.13	0.00	0.00	0.34	0.00	0.00	0.52	0.00	0.00
Avail Cap(c_a), veh/h	1054	0	0	1269	0	0	579	0	0	560	0	0
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.9	0.0	0.0	3.3	0.0	0.0	23.1	0.0	0.0	24.0	0.0	0.0
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.2	0.0	0.0	0.6	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	0.0	0.0	1.0	0.0	0.0	1.8	0.0	0.0	2.8	0.0	0.0
LnGrp Delay(d),s/veh	16.6	0.0	0.0	3.5	0.0	0.0	23.7	0.0	0.0	25.2	0.0	0.0
LnGrp LOS	B			A			C			C		
Approach Vol, veh/h		542			165			114			175	
Approach Delay, s/veh		16.6			3.5			23.7			25.2	
Approach LOS		B			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		13.7		46.3		13.7		46.3
Change Period (Y+Rc), s		* 4.7		5.1		* 4.7		5.1
Max Green Setting (Gmax), s		* 18		32.2		* 18		32.2
Max Q Clear Time (g_c+I1), s		5.5		22.4		8.0		3.9
Green Ext Time (p_c), s		1.3		3.4		1.2		5.5

Intersection Summary	
HCM 2010 Ctrl Delay	16.8
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	943	1140	469	2123	0	0	0	0	34	0	118
Future Volume (veh/h)	0	943	1140	469	2123	0	0	0	0	34	0	118
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	1025	1239	510	2308	0				37	0	0
Adj No. of Lanes	0	2	2	2	2	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1578	1342	1186	2957	0				127	0	56
Arrive On Green	0.00	0.42	0.42	0.46	1.00	0.00				0.04	0.00	0.00
Sat Flow, veh/h	0	3725	3167	3442	3632	0				3548	0	1583
Grp Volume(v), veh/h	0	1025	1239	510	2308	0				37	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	16.6	28.2	7.6	0.0	0.0				0.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	16.6	28.2	7.6	0.0	0.0				0.8	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1578	1342	1186	2957	0				127	0	56
V/C Ratio(X)	0.00	0.65	0.92	0.43	0.78	0.00				0.29	0.00	0.00
Avail Cap(c_a), veh/h	0	1578	1342	1186	2957	0				840	0	375
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.38	0.38	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	17.4	20.7	15.5	0.0	0.0				35.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.1	12.0	0.1	0.8	0.0				1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.0	14.5	3.6	0.3	0.0				0.4	0.0	0.0
LnGrp Delay(d),s/veh	0.0	19.5	32.7	15.6	0.8	0.0				37.0	0.0	0.0
LnGrp LOS		B	C	B	A					D		
Approach Vol, veh/h		2264			2818						37	
Approach Delay, s/veh		26.7			3.5						37.0	
Approach LOS		C			A						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			31.3	37.3		7.4		68.6
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			11.3	* 32		18.0		48.2
Max Q Clear Time (g_c+I1), s			9.6	30.2		2.8		2.0
Green Ext Time (p_c), s			1.4	1.8		0.1		37.3

Intersection Summary	
HCM 2010 Ctrl Delay	14.0
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	948	0	0	2361	137	684	2	396	0	0	0
Future Volume (veh/h)	91	948	0	0	2361	137	684	2	396	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	99	1030	0	0	2566	149	744	0	0			
Adj No. of Lanes	1	2	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	185	2231	0	0	2867	166	854	0	381			
Arrive On Green	0.10	0.63	0.00	0.00	0.46	0.46	0.24	0.00	0.00			
Sat Flow, veh/h	1774	3632	0	0	6505	361	3548	0	1583			
Grp Volume(v), veh/h	99	1030	0	0	1973	742	744	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1602	1799	1774	0	1583			
Q Serve(g_s), s	4.0	11.5	0.0	0.0	28.6	28.9	15.3	0.0	0.0			
Cycle Q Clear(g_c), s	4.0	11.5	0.0	0.0	28.6	28.9	15.3	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.20	1.00		1.00			
Lane Grp Cap(c), veh/h	185	2231	0	0	2207	826	854	0	381			
V/C Ratio(X)	0.54	0.46	0.00	0.00	0.89	0.90	0.87	0.00	0.00			
Avail Cap(c_a), veh/h	185	2231	0	0	2207	826	948	0	423			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.65	0.65	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	32.3	7.3	0.0	0.0	18.9	18.9	27.7	0.0	0.0			
Incr Delay (d2), s/veh	2.0	0.4	0.0	0.0	6.1	14.6	8.3	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.1	5.7	0.0	0.0	13.8	17.6	8.4	0.0	0.0			
LnGrp Delay(d),s/veh	34.3	7.8	0.0	0.0	24.9	33.5	36.0	0.0	0.0			
LnGrp LOS	C	A			C	C	D					
Approach Vol, veh/h		1129			2715			744				
Approach Delay, s/veh		10.1			27.3			36.0				
Approach LOS		B			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		23.0		53.0			13.0	40.0
Change Period (Y+Rc), s		* 4.7		5.1			5.1	* 5.1
Max Green Setting (Gmax), s		* 20		45.9			6.3	* 35
Max Q Clear Time (g_c+I1), s		17.3		13.5			6.0	30.9
Green Ext Time (p_c), s		1.0		9.4			0.2	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	24.5
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	525	374	149	545	14	187	18	186	13	20	8
Future Volume (veh/h)	7	525	374	149	545	14	187	18	186	13	20	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	8	571	407	162	592	15	203	20	202	14	22	9
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	18	743	631	231	979	832	265	17	437	62	82	21
Arrive On Green	0.01	0.40	0.40	0.09	0.35	0.35	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	632	62	1583	0	297	74
Grp Volume(v), veh/h	8	571	407	162	592	15	223	0	202	45	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	694	0	1583	372	0	0
Q Serve(g_s), s	0.3	20.2	15.8	6.7	19.9	0.5	0.0	0.0	8.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	20.2	15.8	6.7	19.9	0.5	21.0	0.0	8.0	21.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.91		1.00	0.31		0.20
Lane Grp Cap(c), veh/h	18	743	631	231	979	832	282	0	437	165	0	0
V/C Ratio(X)	0.44	0.77	0.64	0.70	0.61	0.02	0.79	0.00	0.46	0.27	0.00	0.00
Avail Cap(c_a), veh/h	117	743	631	243	979	832	282	0	437	165	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	37.4	19.8	18.5	33.2	18.1	11.8	29.0	0.0	22.8	22.2	0.0	0.0
Incr Delay (d2), s/veh	15.9	7.5	5.0	7.6	2.6	0.0	14.0	0.0	0.8	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	11.9	7.8	3.8	10.9	0.2	5.7	0.0	3.6	0.7	0.0	0.0
LnGrp Delay(d),s/veh	53.3	27.3	23.5	40.9	20.7	11.9	43.0	0.0	23.6	23.1	0.0	0.0
LnGrp LOS	D	C	C	D	C	B	D		C	C		
Approach Vol, veh/h		986			769			425			45	
Approach Delay, s/veh		26.0			24.8			33.7			23.1	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		25.6	15.0	35.4		25.6	5.4	45.0
Change Period (Y+Rc), s		4.6	5.1	* 5.1		4.6	4.6	5.1
Max Green Setting (Gmax), s		21.0	10.4	* 30		21.0	5.0	35.7
Max Q Clear Time (g_c+I1), s		23.0	8.7	22.2		23.0	2.3	21.9
Green Ext Time (p_c), s		0.0	0.1	3.4		0.0	0.0	3.9

Intersection Summary	
HCM 2010 Ctrl Delay	27.0
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	186	470	50	389	7	255	26	19	3	19	69
Future Volume (veh/h)	38	186	470	50	389	7	255	26	19	3	19	69
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	41	202	511	54	423	8	277	28	21	3	21	75
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	831	706	79	757	644	90	0	506	53	275	506
Arrive On Green	0.13	0.74	0.74	0.04	0.41	0.41	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	0	0	1583	0	861	1583
Grp Volume(v), veh/h	41	202	511	54	423	8	305	0	21	24	0	75
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	0	0	1583	861	0	1583
Q Serve(g_s), s	1.6	2.6	13.6	2.3	13.3	0.2	0.0	0.0	0.7	0.0	0.0	2.6
Cycle Q Clear(g_c), s	1.6	2.6	13.6	2.3	13.3	0.2	24.3	0.0	0.7	24.3	0.0	2.6
Prop In Lane	1.00		1.00	1.00		1.00	0.91		1.00	0.12		1.00
Lane Grp Cap(c), veh/h	138	831	706	79	757	644	90	0	506	329	0	506
V/C Ratio(X)	0.30	0.24	0.72	0.68	0.56	0.01	3.37	0.00	0.04	0.07	0.00	0.15
Avail Cap(c_a), veh/h	149	831	706	154	757	644	90	0	506	329	0	506
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.76	0.76	0.76	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.2	5.7	7.1	35.8	17.3	13.4	38.0	0.0	17.8	18.9	0.0	18.5
Incr Delay (d2), s/veh	0.9	0.5	4.9	9.8	3.0	0.0	1096.0	0.0	0.0	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.4	6.5	1.3	7.4	0.1	29.4	0.0	0.3	0.4	0.0	1.1
LnGrp Delay(d),s/veh	32.1	6.2	12.0	45.5	20.3	13.5	1134.0	0.0	17.9	19.0	0.0	18.6
LnGrp LOS	C	A	B	D	C	B	F		B	B		B
Approach Vol, veh/h		754			485			326			99	
Approach Delay, s/veh		11.5			23.0			1062.1			18.7	
Approach LOS		B			C			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		29.0	8.0	39.0		29.0	11.0	36.0
Change Period (Y+Rc), s		* 4.7	4.6	5.1		* 4.7	5.1	* 5.1
Max Green Setting (Gmax), s		* 24	6.6	30.7		* 24	6.4	* 31
Max Q Clear Time (g_c+I1), s		26.3	4.3	15.6		26.3	3.6	15.3
Green Ext Time (p_c), s		0.0	0.0	3.0		0.0	0.8	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	221.1
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	7.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	14	295	103	1	434	106
Future Vol, veh/h	14	295	103	1	434	106
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	321	112	1	472	115

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1171	112	0	0	113	0
Stage 1	112	-	-	-	-	-
Stage 2	1059	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	213	941	-	-	1476	-
Stage 1	913	-	-	-	-	-
Stage 2	333	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	140	941	-	-	1476	-
Mov Cap-2 Maneuver	140	-	-	-	-	-
Stage 1	913	-	-	-	-	-
Stage 2	219	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.5	0	6.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	986	1476	-
HCM Lane V/C Ratio	-	-	0.341	0.32	-
HCM Control Delay (s)	-	-	10.5	8.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.5	1.4	-

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	136	50	152	205	316	229
Future Vol, veh/h	136	50	152	205	316	229
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	Free
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	148	54	165	223	343	249

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	896	-	343	0	-	0
Stage 1	343	-	-	-	-	-
Stage 2	553	-	-	-	-	-
Critical Hdwy	6.42	-	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	2.218	-	-	-
Pot Cap-1 Maneuver	311	0	1216	-	-	0
Stage 1	719	0	-	-	-	0
Stage 2	576	0	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	263	-	1216	-	-	-
Mov Cap-2 Maneuver	263	-	-	-	-	-
Stage 1	719	-	-	-	-	-
Stage 2	487	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	34.9	3.6	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	1216	-	263	-	-
HCM Lane V/C Ratio	0.136	-	0.562	-	-
HCM Control Delay (s)	8.4	0	34.9	0	-
HCM Lane LOS	A	A	D	A	-
HCM 95th %tile Q(veh)	0.5	-	3.2	-	-

Intersection	
Int Delay, s/veh	8.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	282	19	62	835	31	50
Future Vol, veh/h	282	19	62	835	31	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	307	21	67	908	34	54

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	189	67	0	-	67	0
Stage 1	67	-	-	-	-	-
Stage 2	122	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	800	997	-	0	1535	-
Stage 1	956	-	-	0	-	-
Stage 2	903	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	782	997	-	-	1535	-
Mov Cap-2 Maneuver	782	-	-	-	-	-
Stage 1	956	-	-	-	-	-
Stage 2	882	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.1	0	2.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	SBL	SBT
Capacity (veh/h)	-	835	1535	-
HCM Lane V/C Ratio	-	0.392	0.022	-
HCM Control Delay (s)	-	12.1	7.4	0
HCM Lane LOS	-	B	A	A
HCM 95th %tile Q(veh)	-	1.9	0.1	-

Intersection	
Int Delay, s/veh	39.4

Movement	SET	SER	NWL	NWT	NEL	NER
Traffic Vol, veh/h	511	2	230	451	95	242
Future Vol, veh/h	511	2	230	451	95	242
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	555	2	250	490	103	263

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	558	0	1547	557
Stage 1	-	-	-	-	557	-
Stage 2	-	-	-	-	990	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1013	-	126	530
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	360	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1013	-	~ 83	530
Mov Cap-2 Maneuver	-	-	-	-	~ 83	-
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	238	-

Approach	SE	NW	NE
HCM Control Delay, s	0	3.3	172.2
HCM LOS			F

Minor Lane/Major Mvmt	NEL n1	NWL	NWT	SET	SER
Capacity (veh/h)	294	1013	-	-	-
HCM Lane V/C Ratio	1.246	0.247	-	-	-
HCM Control Delay (s)	172.2	9.7	0	-	-
HCM Lane LOS	F	A	A	-	-
HCM 95th %tile Q(veh)	17.1	1	-	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	543	560	10	22	548	275	5	15	64	49	13	253
Future Volume (veh/h)	543	560	10	22	548	275	5	15	64	49	13	253
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	590	609	11	24	596	0	5	16	70	53	14	275
Adj No. of Lanes	1	1	0	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	615	1245	22	80	717	609	37	91	236	54	8	236
Arrive On Green	0.35	0.68	0.68	0.09	0.77	0.00	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1774	1824	33	1774	1863	1583	0	608	1583	0	55	1583
Grp Volume(v), veh/h	590	0	620	24	596	0	21	0	70	67	0	275
Grp Sat Flow(s),veh/h/ln	1774	0	1857	1774	1863	1583	608	0	1583	55	0	1583
Q Serve(g_s), s	39.1	0.0	19.1	1.5	24.6	0.0	0.0	0.0	4.7	0.0	0.0	17.9
Cycle Q Clear(g_c), s	39.1	0.0	19.1	1.5	24.6	0.0	17.9	0.0	4.7	17.9	0.0	17.9
Prop In Lane	1.00		0.02	1.00		1.00	0.24		1.00	0.79		1.00
Lane Grp Cap(c), veh/h	615	0	1267	80	717	609	128	0	236	62	0	236
V/C Ratio(X)	0.96	0.00	0.49	0.30	0.83	0.00	0.16	0.00	0.30	1.08	0.00	1.16
Avail Cap(c_a), veh/h	642	0	1267	87	717	609	128	0	236	62	0	236
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.93	0.93	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.3	0.0	9.1	52.8	11.3	0.0	44.5	0.0	45.4	57.7	0.0	51.0
Incr Delay (d2), s/veh	25.2	0.0	1.4	1.9	10.2	0.0	0.6	0.0	0.7	138.8	0.0	110.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.3	0.0	10.1	0.8	13.9	0.0	0.6	0.0	2.1	4.4	0.0	15.0
LnGrp Delay(d),s/veh	63.5	0.0	10.4	54.8	21.5	0.0	45.1	0.0	46.1	198.3	0.0	161.2
LnGrp LOS	E		B	D	C		D		D	F		F
Approach Vol, veh/h		1210			620			91			342	
Approach Delay, s/veh		36.3			22.8			45.9			168.5	
Approach LOS		D			C			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		22.5	10.5	87.0		22.5	46.2	51.3
Change Period (Y+Rc), s		4.6	5.1	* 5.1		4.6	4.6	5.1
Max Green Setting (Gmax), s		17.9	5.9	* 82		17.9	43.4	44.4
Max Q Clear Time (g_c+I1), s		19.9	3.5	21.1		19.9	41.1	26.6
Green Ext Time (p_c), s		0.0	0.9	5.0		0.0	0.6	3.9

Intersection Summary	
HCM 2010 Ctrl Delay	53.0
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	535	120	22	38	201	59	23	84	37	73	56	630
Future Volume (veh/h)	535	120	22	38	201	59	23	84	37	73	56	630
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	582	130	24	41	218	64	25	91	40	79	61	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	797	154	28	172	866	240	94	153	61	204	114	0
Arrive On Green	1.00	1.00	1.00	0.70	0.70	0.70	0.14	0.14	0.14	0.14	0.14	0.00
Sat Flow, veh/h	983	220	41	149	1235	342	176	1123	448	813	841	0
Grp Volume(v), veh/h	736	0	0	323	0	0	156	0	0	140	0	0
Grp Sat Flow(s),veh/h/ln	1244	0	0	1726	0	0	1747	0	0	1654	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	3.9	0.0	0.0	4.9	0.0	0.0	4.4	0.0	0.0
Prop In Lane	0.79		0.03	0.13		0.20	0.16		0.26	0.56		0.00
Lane Grp Cap(c), veh/h	979	0	0	1277	0	0	307	0	0	319	0	0
V/C Ratio(X)	0.75	0.00	0.00	0.25	0.00	0.00	0.51	0.00	0.00	0.44	0.00	0.00
Avail Cap(c_a), veh/h	979	0	0	1277	0	0	583	0	0	559	0	0
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	3.3	0.0	0.0	24.5	0.0	0.0	24.3	0.0	0.0
Incr Delay (d2), s/veh	4.9	0.0	0.0	0.5	0.0	0.0	1.3	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	2.1	0.0	0.0	2.5	0.0	0.0	2.3	0.0	0.0
LnGrp Delay(d),s/veh	4.9	0.0	0.0	3.7	0.0	0.0	25.8	0.0	0.0	25.2	0.0	0.0
LnGrp LOS	A			A			C			C		
Approach Vol, veh/h		736			323			156			140	
Approach Delay, s/veh		4.9			3.7			25.8			25.2	
Approach LOS		A			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		12.9		47.1		12.9		47.1
Change Period (Y+Rc), s		* 4.7		5.1		* 4.7		5.1
Max Green Setting (Gmax), s		* 18		32.2		* 18		32.2
Max Q Clear Time (g_c+I1), s		6.9		2.0		6.4		5.9
Green Ext Time (p_c), s		1.3		10.3		1.3		9.8

Intersection Summary	
HCM 2010 Ctrl Delay	9.1
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1571	1079	164	3072	0	0	0	0	103	0	234
Future Volume (veh/h)	0	1571	1079	164	3072	0	0	0	0	103	0	234
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	1591	1251	178	3339	0				112	0	0
Adj No. of Lanes	0	2	2	2	2	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2269	1929	751	3078	0				172	0	77
Arrive On Green	0.00	0.61	0.61	0.44	1.00	0.00				0.05	0.00	0.00
Sat Flow, veh/h	0	3725	3167	3442	3632	0				3548	0	1583
Grp Volume(v), veh/h	0	1591	1251	178	3339	0				112	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	35.0	30.6	3.9	0.0	0.0				3.7	0.0	0.0
Cycle Q Clear(g_c), s	0.0	35.0	30.6	3.9	0.0	0.0				3.7	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2269	1929	751	3078	0				172	0	77
V/C Ratio(X)	0.00	0.70	0.65	0.24	1.08	0.00				0.65	0.00	0.00
Avail Cap(c_a), veh/h	0	2269	1929	751	3078	0				571	0	255
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.59	0.59	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	16.0	15.2	27.5	0.0	0.0				56.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.8	1.7	0.1	42.1	0.0				4.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	18.5	13.7	1.8	18.0	0.0				1.9	0.0	0.0
LnGrp Delay(d),s/veh	0.0	17.8	16.9	27.6	42.1	0.0				60.2	0.0	0.0
LnGrp LOS		B	B	C	F					F		
Approach Vol, veh/h		2842			3517						112	
Approach Delay, s/veh		17.4			41.4						60.2	
Approach LOS		B			D						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			31.3	78.2		10.5		109.5
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			13.1	* 73		19.3		90.9
Max Q Clear Time (g_c+I1), s			5.9	37.0		5.7		2.0
Green Ext Time (p_c), s			6.8	27.1		0.2		85.0

Intersection Summary	
HCM 2010 Ctrl Delay	31.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	1744	0	0	1242	63	1229	0	664	0	0	0
Future Volume (veh/h)	137	1744	0	0	1242	63	1229	0	664	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	149	1896	0	0	1350	68	1336	0	0			
Adj No. of Lanes	1	2	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	175	1867	0	0	2455	123	1386	0	619			
Arrive On Green	0.20	1.00	0.00	0.00	0.39	0.39	0.39	0.00	0.00			
Sat Flow, veh/h	1774	3632	0	0	6557	317	3548	0	1583			
Grp Volume(v), veh/h	149	1896	0	0	1030	388	1336	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1602	1807	1774	0	1583			
Q Serve(g_s), s	9.7	0.0	0.0	0.0	20.0	20.0	44.2	0.0	0.0			
Cycle Q Clear(g_c), s	9.7	0.0	0.0	0.0	20.0	20.0	44.2	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.18	1.00		1.00			
Lane Grp Cap(c), veh/h	175	1867	0	0	1874	704	1386	0	619			
V/C Ratio(X)	0.85	1.02	0.00	0.00	0.55	0.55	0.96	0.00	0.00			
Avail Cap(c_a), veh/h	271	1867	0	0	1874	704	1399	0	624			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.56	0.56	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	47.3	0.0	0.0	0.0	28.4	28.4	35.7	0.0	0.0			
Incr Delay (d2), s/veh	8.7	19.5	0.0	0.0	1.2	3.1	16.1	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.1	5.1	0.0	0.0	9.1	10.6	24.6	0.0	0.0			
LnGrp Delay(d),s/veh	56.0	19.5	0.0	0.0	29.6	31.5	51.9	0.0	0.0			
LnGrp LOS	F	F			C	C	D					
Approach Vol, veh/h		2045			1418			1336				
Approach Delay, s/veh		22.2			30.1			51.9				
Approach LOS		C			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		51.6		68.4			16.5	51.9
Change Period (Y+Rc), s		* 4.7		5.1			* 4.7	5.1
Max Green Setting (Gmax), s		* 47		62.9			* 18	39.9
Max Q Clear Time (g_c+I1), s		46.2		2.0			11.7	22.0
Green Ext Time (p_c), s		0.7		51.7			0.2	16.9

Intersection Summary	
HCM 2010 Ctrl Delay	32.8
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	543	312	116	726	20	239	15	159	21	40	11
Future Volume (veh/h)	4	543	312	116	726	20	239	15	159	21	40	11
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	4	590	339	126	789	22	260	16	173	23	43	12
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	9	753	640	399	1175	999	285	11	475	67	102	19
Arrive On Green	0.01	0.40	0.40	0.07	0.21	0.21	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	619	38	1583	0	341	62
Grp Volume(v), veh/h	4	590	339	126	789	22	276	0	173	78	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	657	0	1583	402	0	0
Q Serve(g_s), s	0.2	19.3	11.4	4.7	27.3	0.8	0.0	0.0	6.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	19.3	11.4	4.7	27.3	0.8	21.0	0.0	6.0	21.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.94		1.00	0.29		0.15
Lane Grp Cap(c), veh/h	9	753	640	399	1175	999	297	0	475	187	0	0
V/C Ratio(X)	0.42	0.78	0.53	0.32	0.67	0.02	0.93	0.00	0.36	0.42	0.00	0.00
Avail Cap(c_a), veh/h	127	753	640	399	1175	999	297	0	475	187	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.85	0.85	0.85	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.7	18.2	15.8	27.3	21.0	10.5	27.5	0.0	19.3	19.8	0.0	0.0
Incr Delay (d2), s/veh	27.1	8.0	3.1	0.4	2.6	0.0	34.2	0.0	0.5	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	11.5	5.5	2.4	15.0	0.3	8.1	0.0	2.7	1.2	0.0	0.0
LnGrp Delay(d),s/veh	61.8	26.2	18.9	27.7	23.7	10.6	61.7	0.0	19.7	21.3	0.0	0.0
LnGrp LOS	E	C	B	C	C	B	E		B	C		
Approach Vol, veh/h		933			937			449			78	
Approach Delay, s/veh		23.7			23.9			45.6			21.3	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		25.6	21.1	33.4		25.6	5.0	49.5
Change Period (Y+Rc), s		4.6	5.1	* 5.1		4.6	4.6	5.1
Max Green Setting (Gmax), s		21.0	6.4	* 28		21.0	5.0	29.7
Max Q Clear Time (g_c+I1), s		23.0	6.7	21.3		23.0	2.2	29.3
Green Ext Time (p_c), s		0.0	0.0	3.0		0.0	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	27.8
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	373	326	41	346	7	480	42	70	8	22	68
Future Volume (veh/h)	36	373	326	41	346	7	480	42	70	8	22	68
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	39	405	354	45	376	8	522	46	76	9	24	74
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	535	455	114	597	508	99	0	690	65	141	690
Arrive On Green	0.08	0.57	0.57	0.06	0.32	0.32	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	0	0	1583	0	323	1583
Grp Volume(v), veh/h	39	405	354	45	376	8	568	0	76	33	0	74
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	0	0	1583	323	0	1583
Q Serve(g_s), s	1.5	11.5	12.1	1.7	12.0	0.2	0.0	0.0	2.0	0.0	0.0	1.9
Cycle Q Clear(g_c), s	1.5	11.5	12.1	1.7	12.0	0.2	30.5	0.0	2.0	30.5	0.0	1.9
Prop In Lane	1.00		1.00	1.00		1.00	0.92		1.00	0.27		1.00
Lane Grp Cap(c), veh/h	67	535	455	114	597	508	99	0	690	206	0	690
V/C Ratio(X)	0.58	0.76	0.78	0.39	0.63	0.02	5.76	0.00	0.11	0.16	0.00	0.11
Avail Cap(c_a), veh/h	127	535	455	127	597	508	99	0	690	206	0	690
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.74	0.74	0.74	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.8	13.1	13.2	31.4	20.2	16.2	35.0	0.0	11.7	15.9	0.0	11.7
Incr Delay (d2), s/veh	5.7	7.3	9.5	2.2	5.0	0.12	161.7	0.0	0.1	0.4	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	6.7	6.3	0.9	7.0	0.1	61.2	0.0	0.9	0.4	0.0	0.8
LnGrp Delay(d),s/veh	37.5	20.4	22.6	33.6	25.2	16.3	2196.7	0.0	11.8	16.2	0.0	11.8
LnGrp LOS	D	C	C	C	C	B	F		B	B		B
Approach Vol, veh/h		798			429			644			107	
Approach Delay, s/veh		22.2			25.9			1938.9			13.1	
Approach LOS		C			C			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		35.2	9.6	25.2		35.2	7.3	27.5
Change Period (Y+Rc), s		* 4.7	5.1	* 5.1		* 4.7	4.6	5.1
Max Green Setting (Gmax), s		* 31	5.0	* 20		* 31	5.0	20.1
Max Q Clear Time (g_c+I1), s		32.5	3.7	14.1		32.5	3.5	14.0
Green Ext Time (p_c), s		0.0	0.0	2.0		0.0	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	646.6
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	6.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	26	330	112	7	309	143
Future Vol, veh/h	26	330	112	7	309	143
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	359	122	8	336	155

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	953	126	0	0	129	0
Stage 1	126	-	-	-	-	-
Stage 2	827	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	287	924	-	-	1457	-
Stage 1	900	-	-	-	-	-
Stage 2	430	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	215	924	-	-	1457	-
Mov Cap-2 Maneuver	215	-	-	-	-	-
Stage 1	900	-	-	-	-	-
Stage 2	322	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	5.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	997	1457	-
HCM Lane V/C Ratio	-	-	0.388	0.231	-
HCM Control Delay (s)	-	-	10.9	8.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.9	0.9	-

Intersection	
Int Delay, s/veh	20.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	349	50	60	234	204	181
Future Vol, veh/h	349	50	60	234	204	181
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	Free
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	379	54	65	254	222	197

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	607	-	222	0	-	0
Stage 1	222	-	-	-	-	-
Stage 2	385	-	-	-	-	-
Critical Hdwy	6.42	-	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	2.218	-	-	-
Pot Cap-1 Maneuver	460	0	1347	-	-	0
Stage 1	815	0	-	-	-	0
Stage 2	688	0	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	434	-	1347	-	-	-
Mov Cap-2 Maneuver	434	-	-	-	-	-
Stage 1	815	-	-	-	-	-
Stage 2	649	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	48.7	1.6	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	1347	-	434	-	-
HCM Lane V/C Ratio	0.048	-	0.874	-	-
HCM Control Delay (s)	7.8	0	48.7	0	-
HCM Lane LOS	A	A	E	A	-
HCM 95th %tile Q(veh)	0.2	-	9	-	-

Intersection	
Int Delay, s/veh	10.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	372	16	73	318	30	101
Future Vol, veh/h	372	16	73	318	30	101
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	404	17	79	346	33	110

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	254	79	0	-	79	0
Stage 1	79	-	-	-	-	-
Stage 2	175	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	735	981	-	0	1519	-
Stage 1	944	-	-	0	-	-
Stage 2	855	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	718	981	-	-	1519	-
Mov Cap-2 Maneuver	718	-	-	-	-	-
Stage 1	944	-	-	-	-	-
Stage 2	835	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.1	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	WBLn1	SBL	SBT
Capacity (veh/h)	-	741	1519	-
HCM Lane V/C Ratio	-	0.569	0.021	-
HCM Control Delay (s)	-	16.1	7.4	0
HCM Lane LOS	-	C	A	A
HCM 95th %tile Q(veh)	-	3.6	0.1	-

Intersection	
Int Delay, s/veh	15.2

Movement	SET	SER	NWL	NWT	NEL	NER
Traffic Vol, veh/h	262	13	190	223	120	589
Future Vol, veh/h	262	13	190	223	120	589
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	285	14	207	242	130	640

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	299	0	947	292
Stage 1	-	-	-	-	292	-
Stage 2	-	-	-	-	655	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1262	-	290	747
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	517	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1262	-	235	747
Mov Cap-2 Maneuver	-	-	-	-	235	-
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	419	-

Approach	SE	NW	NE
HCM Control Delay, s	0	3.9	27.6
HCM LOS			D

Minor Lane/Major Mvmt	NEL n1	NWL	NWT	SET	SER
Capacity (veh/h)	899	1262	-	-	-
HCM Lane V/C Ratio	0.857	0.164	-	-	-
HCM Control Delay (s)	27.6	8.4	0	-	-
HCM Lane LOS	D	A	A	-	-
HCM 95th %tile Q(veh)	10.8	0.6	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	258	389	19	15	680	116	13	15	41	96	31	349
Future Volume (veh/h)	258	389	19	15	680	116	13	15	41	96	31	349
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	280	423	21	16	739	0	14	16	45	104	34	379
Adj No. of Lanes	1	1	0	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	309	1159	58	71	984	837	44	35	282	53	8	282
Arrive On Green	0.17	0.66	0.66	0.08	1.00	0.00	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	1760	87	1774	1863	1583	0	199	1583	0	43	1583
Grp Volume(v), veh/h	280	0	444	16	739	0	30	0	45	138	0	379
Grp Sat Flow(s),veh/h/ln	1774	0	1847	1774	1863	1583	199	0	1583	43	0	1583
Q Serve(g_s), s	18.6	0.0	13.0	1.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0	21.4
Cycle Q Clear(g_c), s	18.6	0.0	13.0	1.0	0.0	0.0	21.4	0.0	2.9	21.4	0.0	21.4
Prop In Lane	1.00		0.05	1.00		1.00	0.47		1.00	0.75		1.00
Lane Grp Cap(c), veh/h	309	0	1216	71	984	837	79	0	282	60	0	282
V/C Ratio(X)	0.91	0.00	0.37	0.23	0.75	0.00	0.38	0.00	0.16	2.29	0.00	1.34
Avail Cap(c_a), veh/h	361	0	1216	78	984	837	79	0	282	60	0	282
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.99	0.99	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.6	0.0	9.2	53.5	0.0	0.0	42.7	0.0	41.7	57.3	0.0	49.3
Incr Delay (d2), s/veh	23.6	0.0	0.8	1.6	5.2	0.0	2.9	0.0	0.3	630.0	0.0	175.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.1	0.0	6.8	0.5	1.4	0.0	0.9	0.0	1.3	12.5	0.0	23.2
LnGrp Delay(d),s/veh	72.2	0.0	10.1	55.0	5.2	0.0	45.6	0.0	42.0	687.3	0.0	225.2
LnGrp LOS	F		B	F	A		D		D	F		F
Approach Vol, veh/h		724			755			75			517	
Approach Delay, s/veh		34.1			6.3			43.4			348.5	
Approach LOS		C			A			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		26.0	9.9	84.1		26.0	25.5	68.5
Change Period (Y+Rc), s		4.6	5.1	* 5.1		4.6	4.6	5.1
Max Green Setting (Gmax), s		21.4	5.3	* 79		21.4	24.4	59.9
Max Q Clear Time (g_c+I1), s		23.4	3.0	15.0		23.4	20.6	2.0
Green Ext Time (p_c), s		0.0	0.4	3.2		0.0	0.3	6.6

Intersection Summary	
HCM 2010 Ctrl Delay	102.8
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	327	119	53	9	104	39	30	48	27	101	60	687
Future Volume (veh/h)	327	119	53	9	104	39	30	48	27	101	60	687
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	355	129	58	10	113	42	33	52	29	110	65	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	706	247	102	96	866	307	127	145	67	239	101	0
Arrive On Green	0.23	0.23	0.23	0.69	0.69	0.69	0.15	0.15	0.15	0.15	0.15	0.00
Sat Flow, veh/h	884	359	149	48	1262	447	332	965	443	936	669	0
Grp Volume(v), veh/h	542	0	0	165	0	0	114	0	0	175	0	0
Grp Sat Flow(s),veh/h/ln	1392	0	0	1757	0	0	1740	0	0	1605	0	0
Q Serve(g_s), s	18.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0
Cycle Q Clear(g_c), s	20.4	0.0	0.0	1.9	0.0	0.0	3.5	0.0	0.0	6.0	0.0	0.0
Prop In Lane	0.65		0.11	0.06		0.25	0.29		0.25	0.63		0.00
Lane Grp Cap(c), veh/h	1054	0	0	1269	0	0	339	0	0	339	0	0
V/C Ratio(X)	0.51	0.00	0.00	0.13	0.00	0.00	0.34	0.00	0.00	0.52	0.00	0.00
Avail Cap(c_a), veh/h	1054	0	0	1269	0	0	579	0	0	560	0	0
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.9	0.0	0.0	3.3	0.0	0.0	23.1	0.0	0.0	24.0	0.0	0.0
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.2	0.0	0.0	0.6	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	0.0	0.0	1.0	0.0	0.0	1.8	0.0	0.0	2.8	0.0	0.0
LnGrp Delay(d),s/veh	16.6	0.0	0.0	3.5	0.0	0.0	23.7	0.0	0.0	25.2	0.0	0.0
LnGrp LOS	B			A			C			C		
Approach Vol, veh/h		542			165			114			175	
Approach Delay, s/veh		16.6			3.5			23.7			25.2	
Approach LOS		B			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		13.7		46.3		13.7		46.3
Change Period (Y+Rc), s		* 4.7		5.1		* 4.7		5.1
Max Green Setting (Gmax), s		* 18		32.2		* 18		32.2
Max Q Clear Time (g_c+I1), s		5.5		22.4		8.0		3.9
Green Ext Time (p_c), s		1.3		3.4		1.2		5.5

Intersection Summary	
HCM 2010 Ctrl Delay	16.8
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2119	714	191	2269	0	0	0	0	126	0	491
Future Volume (veh/h)	0	2119	714	191	2269	0	0	0	0	126	0	491
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	2312	770	208	2466	0				137	0	0
Adj No. of Lanes	0	3	1	2	3	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2738	776	972	4216	0				220	0	98
Arrive On Green	0.00	0.49	0.49	0.56	1.00	0.00				0.06	0.00	0.00
Sat Flow, veh/h	0	5588	1583	3442	5253	0				3548	0	1583
Grp Volume(v), veh/h	0	2312	770	208	2466	0				137	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1695	0				1774	0	1583
Q Serve(g_s), s	0.0	32.4	43.5	2.7	0.0	0.0				3.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	32.4	43.5	2.7	0.0	0.0				3.4	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2738	776	972	4216	0				220	0	98
V/C Ratio(X)	0.00	0.84	0.99	0.21	0.58	0.00				0.62	0.00	0.00
Avail Cap(c_a), veh/h	0	2738	776	972	4216	0				997	0	445
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.24	0.24	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	20.0	22.8	14.6	0.0	0.0				41.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.4	30.5	0.0	0.1	0.0				2.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	17.3	25.4	1.3	0.1	0.0				1.7	0.0	0.0
LnGrp Delay(d),s/veh	0.0	23.4	53.3	14.7	0.1	0.0				44.0	0.0	0.0
LnGrp LOS		C	D	B	A					D		
Approach Vol, veh/h		3082			2674						137	
Approach Delay, s/veh		30.9			1.3						44.0	
Approach LOS		C			A						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			30.5	49.2		10.3		79.7
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			6.1	* 44		25.3		54.9
Max Q Clear Time (g_c+I1), s			4.7	45.5		5.4		2.0
Green Ext Time (p_c), s			1.1	0.0		0.4		39.4

Intersection Summary	
HCM 2010 Ctrl Delay	17.7
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	229	1776	0	0	1601	136	1045	0	561	0	0	0
Future Volume (veh/h)	229	1776	0	0	1601	136	1045	0	561	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	249	1930	0	0	1740	148	1136	0	0			
Adj No. of Lanes	1	3	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	274	2758	0	0	2034	173	1238	0	552			
Arrive On Green	0.31	1.00	0.00	0.00	0.34	0.34	0.35	0.00	0.00			
Sat Flow, veh/h	1774	5253	0	0	6323	516	3548	0	1583			
Grp Volume(v), veh/h	249	1930	0	0	1379	509	1136	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1695	0	0	1602	1772	1774	0	1583			
Q Serve(g_s), s	12.1	0.0	0.0	0.0	24.1	24.1	27.6	0.0	0.0			
Cycle Q Clear(g_c), s	12.1	0.0	0.0	0.0	24.1	24.1	27.6	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.29	1.00		1.00			
Lane Grp Cap(c), veh/h	274	2758	0	0	1613	595	1238	0	552			
V/C Ratio(X)	0.91	0.70	0.00	0.00	0.86	0.86	0.92	0.00	0.00			
Avail Cap(c_a), veh/h	274	2758	0	0	1613	595	1313	0	586			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	30.5	0.0	0.0	0.0	27.9	27.9	28.1	0.0	0.0			
Incr Delay (d2), s/veh	4.7	0.1	0.0	0.0	6.0	14.6	10.1	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.2	0.0	0.0	0.0	11.5	14.1	15.1	0.0	0.0			
LnGrp Delay(d),s/veh	35.2	0.1	0.0	0.0	33.9	42.5	38.1	0.0	0.0			
LnGrp LOS	D	A			C	D	D					
Approach Vol, veh/h		2179			1888			1136				
Approach Delay, s/veh		4.2			36.2			38.1				
Approach LOS		A			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		36.1		53.9			18.6	35.3
Change Period (Y+Rc), s		* 4.7		5.1			* 4.7	5.1
Max Green Setting (Gmax), s		* 33		46.9			* 14	28.3
Max Q Clear Time (g_c+I1), s		29.6		2.0			14.1	26.1
Green Ext Time (p_c), s		1.8		41.7			0.0	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	23.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1346	767	407	914	0	0	0	0	122	0	280
Future Volume (veh/h)	0	1346	767	407	914	0	0	0	0	122	0	280
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	1463	834	442	993	0				133	0	304
Adj No. of Lanes	0	3	1	1	2	0				0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2305	718	470	2705	0				241	0	378
Arrive On Green	0.00	0.91	0.91	0.35	1.00	0.00				0.14	0.00	0.14
Sat Flow, veh/h	0	5253	1583	1774	3632	0				1774	0	2787
Grp Volume(v), veh/h	0	1463	834	442	993	0				133	0	304
Grp Sat Flow(s),veh/h/ln	0	1695	1583	1774	1770	0				1774	0	1393
Q Serve(g_s), s	0.0	6.3	45.3	24.1	0.0	0.0				7.0	0.0	10.6
Cycle Q Clear(g_c), s	0.0	6.3	45.3	24.1	0.0	0.0				7.0	0.0	10.6
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2305	718	470	2705	0				241	0	378
V/C Ratio(X)	0.00	0.63	1.16	0.94	0.37	0.00				0.55	0.00	0.80
Avail Cap(c_a), veh/h	0	2305	718	504	2705	0				319	0	502
HCM Platoon Ratio	1.00	2.00	2.00	1.33	1.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.68	0.68	0.85	0.85	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	2.8	4.7	31.6	0.0	0.0				40.4	0.0	41.9
Incr Delay (d2), s/veh	0.0	0.9	83.5	22.5	0.3	0.0				2.0	0.0	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.6	32.6	14.7	0.1	0.0				3.6	0.0	4.4
LnGrp Delay(d),s/veh	0.0	3.8	88.2	54.1	0.3	0.0				42.4	0.0	48.9
LnGrp LOS		A	F	D	A					D		D
Approach Vol, veh/h		2297			1435						437	
Approach Delay, s/veh		34.4			16.9						46.9	
Approach LOS		C			B						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			31.1	50.7		18.2		81.8
Change Period (Y+Rc), s			4.6	5.4		4.6		5.4
Max Green Setting (Gmax), s			28.4	39.0		18.0		72.0
Max Q Clear Time (g_c+I1), s			26.1	47.3		12.6		2.0
Green Ext Time (p_c), s			0.4	0.0		1.0		51.5

Intersection Summary	
HCM 2010 Ctrl Delay	29.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	533	324	0	0	261	88	688	0	134	0	0	0
Future Volume (veh/h)	533	324	0	0	261	88	688	0	134	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	579	352	0	0	284	96	748	0	146			
Adj No. of Lanes	2	2	0	0	2	1	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	1337	2295	0	0	729	326	892	0	398			
Arrive On Green	0.13	0.21	0.00	0.00	0.07	0.07	0.25	0.00	0.25			
Sat Flow, veh/h	3442	3632	0	0	3632	1583	3548	0	1583			
Grp Volume(v), veh/h	579	352	0	0	284	96	748	0	146			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1583	1774	0	1583			
Q Serve(g_s), s	15.5	8.1	0.0	0.0	7.7	5.8	20.0	0.0	7.6			
Cycle Q Clear(g_c), s	15.5	8.1	0.0	0.0	7.7	5.8	20.0	0.0	7.6			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1337	2295	0	0	729	326	892	0	398			
V/C Ratio(X)	0.43	0.15	0.00	0.00	0.39	0.29	0.84	0.00	0.37			
Avail Cap(c_a), veh/h	1337	2295	0	0	729	326	1327	0	592			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.63	0.63	0.00	0.00	0.99	0.99	1.00	0.00	1.00			
Uniform Delay (d), s/veh	33.4	17.0	0.0	0.0	40.6	39.7	35.5	0.0	30.9			
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	1.6	2.3	3.2	0.0	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	7.4	4.0	0.0	0.0	3.9	2.7	10.2	0.0	3.4			
LnGrp Delay(d),s/veh	33.6	17.1	0.0	0.0	42.1	42.0	38.7	0.0	31.4			
LnGrp LOS	C	B			D	D	D		C			
Approach Vol, veh/h		931			380			894				
Approach Delay, s/veh		27.3			42.1			37.5				
Approach LOS		C			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		29.7		70.3			44.3	26.0
Change Period (Y+Rc), s		4.6		5.4			5.4	* 5.4
Max Green Setting (Gmax), s		37.4		52.6			27.4	* 21
Max Q Clear Time (g_c+I1), s		22.0		10.1			17.5	9.7
Green Ext Time (p_c), s		3.1		5.1			3.3	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	34.0
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	48	411	310	5	22	73
Future Volume (veh/h)	48	411	310	5	22	73
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	52	447	341	0	24	79
Adj No. of Lanes	1	2	2	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	121	1752	1989	1555	420	357
Arrive On Green	0.07	0.07	0.56	0.00	0.23	0.23
Sat Flow, veh/h	1774	2787	3548	1863	1863	1583
Grp Volume(v), veh/h	52	447	341	0	24	79
Grp Sat Flow(s),veh/h/ln	1774	1393	1774	1863	1863	1583
Q Serve(g_s), s	2.7	0.0	4.5	0.0	1.0	3.9
Cycle Q Clear(g_c), s	2.7	0.0	4.5	0.0	1.0	3.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	121	1752	1989	1555	420	357
V/C Ratio(X)	0.43	0.26	0.17	0.00	0.06	0.22
Avail Cap(c_a), veh/h	414	2212	1989	1555	472	401
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	7.9	10.3	0.0	29.2	30.3
Incr Delay (d2), s/veh	2.4	0.1	0.0	0.0	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	5.9	2.2	0.0	0.5	1.7
LnGrp Delay(d),s/veh	45.3	8.0	10.3	0.0	29.2	30.6
LnGrp LOS	D	A	B		C	C
Approach Vol, veh/h	499			341	103	
Approach Delay, s/veh	11.8			10.3	30.3	
Approach LOS	B			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		84.8		11.2	58.5	26.3		
Change Period (Y+Rc), s		* 4.7		4.6	* 4.7	* 4.7		
Max Green Setting (Gmax), s		* 64		22.4	* 35	* 24		
Max Q Clear Time (g_c+I1), s		0.0		4.7	6.5	5.9		
Green Ext Time (p_c), s		0.0		1.9	1.2	0.3		

Intersection Summary	
HCM 2010 Ctrl Delay	13.3
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	262	134	2	0	143	22	3	7	0	58	15	328
Future Volume (veh/h)	262	134	2	0	143	22	3	7	0	58	15	328
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	285	146	2	0	155	24	3	8	0	63	16	357
Adj No. of Lanes	2	1	0	1	1	0	0	1	0	0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	803	1390	19	2	744	115	7	18	0	113	29	871
Arrive On Green	0.08	0.25	0.25	0.00	0.47	0.47	0.01	0.01	0.00	0.08	0.08	0.08
Sat Flow, veh/h	3442	1833	25	1774	1576	244	501	1337	0	1429	363	2787
Grp Volume(v), veh/h	285	0	148	0	0	179	11	0	0	79	0	357
Grp Sat Flow(s),veh/h/ln	1721	0	1858	1774	0	1820	1838	0	0	1791	0	1393
Q Serve(g_s), s	7.5	0.0	5.9	0.0	0.0	5.5	0.6	0.0	0.0	4.1	0.0	0.0
Cycle Q Clear(g_c), s	7.5	0.0	5.9	0.0	0.0	5.5	0.6	0.0	0.0	4.1	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.13	0.27		0.00	0.80		1.00
Lane Grp Cap(c), veh/h	803	0	1410	2	0	859	24	0	0	142	0	871
V/C Ratio(X)	0.35	0.00	0.10	0.00	0.00	0.21	0.45	0.00	0.00	0.56	0.00	0.41
Avail Cap(c_a), veh/h	803	0	1410	92	0	859	345	0	0	343	0	1184
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.00	0.96	0.00	0.00	1.00	1.00	0.00	0.00	0.99	0.00	0.99
Uniform Delay (d), s/veh	37.4	0.0	10.9	0.0	0.0	14.8	47.0	0.0	0.0	42.6	0.0	26.0
Incr Delay (d2), s/veh	0.3	0.0	0.1	0.0	0.0	0.1	12.5	0.0	0.0	3.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	3.1	0.0	0.0	2.8	0.4	0.0	0.0	2.2	0.0	3.8
LnGrp Delay(d),s/veh	37.7	0.0	11.0	0.0	0.0	15.0	59.6	0.0	0.0	45.9	0.0	26.3
LnGrp LOS	D		B			B	F			D		C
Approach Vol, veh/h		433			179			11			436	
Approach Delay, s/veh		28.6			15.0			59.6			29.9	
Approach LOS		C			B			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		5.9	0.0	77.9		12.2	27.5	50.4
Change Period (Y+Rc), s		4.6	4.6	5.1		4.6	5.1	* 5.1
Max Green Setting (Gmax), s		18.0	5.0	35.7		18.4	21.8	* 19
Max Q Clear Time (g_c+I1), s		2.6	0.0	7.9		6.1	9.5	7.5
Green Ext Time (p_c), s		0.0	0.0	1.9		1.5	1.5	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	27.1
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	514	670	113	467	0	0	0	0	33	0	336
Future Volume (veh/h)	0	514	670	113	467	0	0	0	0	33	0	336
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	559	728	123	508	0				36	0	365
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1655	741	238	2319	0				432	0	386
Arrive On Green	0.00	0.31	0.31	0.27	1.00	0.00				0.24	0.00	0.24
Sat Flow, veh/h	0	3632	1583	1774	3632	0				1774	0	1583
Grp Volume(v), veh/h	0	559	728	123	508	0				36	0	365
Grp Sat Flow(s),veh/h/ln	0	1770	1583	1774	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	11.6	43.8	5.7	0.0	0.0				1.5	0.0	21.8
Cycle Q Clear(g_c), s	0.0	11.6	43.8	5.7	0.0	0.0				1.5	0.0	21.8
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1655	741	238	2319	0				432	0	386
V/C Ratio(X)	0.00	0.34	0.98	0.52	0.22	0.00				0.08	0.00	0.95
Avail Cap(c_a), veh/h	0	1655	741	248	2319	0				432	0	386
HCM Platoon Ratio	1.00	0.67	0.67	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.91	0.91	0.95	0.95	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	21.5	32.6	32.4	0.0	0.0				28.0	0.0	35.7
Incr Delay (d2), s/veh	0.0	0.5	27.7	1.6	0.2	0.0				0.1	0.0	32.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.8	24.8	2.8	0.1	0.0				0.7	0.0	13.0
LnGrp Delay(d),s/veh	0.0	22.0	60.3	34.1	0.2	0.0				28.1	0.0	67.8
LnGrp LOS		C	F	C	A					C		F
Approach Vol, veh/h		1287			631						401	
Approach Delay, s/veh		43.7			6.8						64.2	
Approach LOS		D			A						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			18.0	50.0		28.0		68.0
Change Period (Y+Rc), s			5.1	* 5.1		4.6		5.1
Max Green Setting (Gmax), s			13.4	* 45		23.4		62.9
Max Q Clear Time (g_c+I1), s			7.7	45.8		23.8		2.0
Green Ext Time (p_c), s			1.9	0.0		0.0		4.3

Intersection Summary	
HCM 2010 Ctrl Delay	37.2
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2839	952	245	3008	0	0	0	0	181	0	655
Future Volume (veh/h)	0	2839	952	245	3008	0	0	0	0	181	0	655
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	3093	1030	266	3270	0				197	0	0
Adj No. of Lanes	0	3	1	2	3	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2943	834	1027	4373	0				259	0	115
Arrive On Green	0.00	0.53	0.53	0.60	1.00	0.00				0.07	0.00	0.00
Sat Flow, veh/h	0	5588	1583	3442	5253	0				3548	0	1583
Grp Volume(v), veh/h	0	3093	1030	266	3270	0				197	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1695	0				1774	0	1583
Q Serve(g_s), s	0.0	76.9	76.9	5.4	0.0	0.0				8.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	76.9	76.9	5.4	0.0	0.0				8.0	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2943	834	1027	4373	0				259	0	115
V/C Ratio(X)	0.00	1.05	1.24	0.26	0.75	0.00				0.76	0.00	0.00
Avail Cap(c_a), veh/h	0	2943	834	1027	4373	0				1101	0	491
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	34.5	34.5	21.7	0.0	0.0				66.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	31.9	116.1	0.0	0.1	0.0				4.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	47.9	60.3	2.5	0.0	0.0				4.1	0.0	0.0
LnGrp Delay(d),s/veh	0.0	66.5	150.7	21.8	0.1	0.0				71.0	0.0	0.0
LnGrp LOS		F	F	C	A					F		
Approach Vol, veh/h		4123			3536						197	
Approach Delay, s/veh		87.5			1.7						71.0	
Approach LOS		F			A						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			48.7	82.0		15.3		130.7
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			9.3	* 77		45.3		90.9
Max Q Clear Time (g_c+I1), s			7.4	78.9		10.0		2.0
Green Ext Time (p_c), s			1.5	0.0		0.7		80.6

Intersection Summary	
HCM 2010 Ctrl Delay	48.5
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	305	2395	0	0	2107	164	1393	0	753	0	0	0
Future Volume (veh/h)	305	2395	0	0	2107	164	1393	0	753	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	332	2603	0	0	2290	178	1514	0	0			
Adj No. of Lanes	1	3	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	271	2678	0	0	2089	162	1441	0	643			
Arrive On Green	0.31	1.00	0.00	0.00	0.34	0.34	0.41	0.00	0.00			
Sat Flow, veh/h	1774	5253	0	0	6372	474	3548	0	1583			
Grp Volume(v), veh/h	332	2603	0	0	1800	668	1514	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1695	0	0	1602	1779	1774	0	1583			
Q Serve(g_s), s	22.3	0.0	0.0	0.0	49.9	49.9	59.3	0.0	0.0			
Cycle Q Clear(g_c), s	22.3	0.0	0.0	0.0	49.9	49.9	59.3	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.27	1.00		1.00			
Lane Grp Cap(c), veh/h	271	2678	0	0	1643	608	1441	0	643			
V/C Ratio(X)	1.23	0.97	0.00	0.00	1.10	1.10	1.05	0.00	0.00			
Avail Cap(c_a), veh/h	271	2678	0	0	1643	608	1441	0	643			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	50.7	0.0	0.0	0.0	48.0	48.1	43.3	0.0	0.0			
Incr Delay (d2), s/veh	104.5	1.8	0.0	0.0	53.2	66.6	38.2	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	18.7	0.5	0.0	0.0	30.1	35.7	36.7	0.0	0.0			
LnGrp Delay(d),s/veh	155.2	1.8	0.0	0.0	101.2	114.7	81.6	0.0	0.0			
LnGrp LOS	F	A			F	F	F					
Approach Vol, veh/h		2935			2468			1514				
Approach Delay, s/veh		19.2			104.9			81.6				
Approach LOS		B			F			F				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		64.0		82.0			27.0	55.0
Change Period (Y+Rc), s		* 4.7		5.1			* 4.7	5.1
Max Green Setting (Gmax), s		* 59		76.9			* 22	49.9
Max Q Clear Time (g_c+I1), s		61.3		2.0			24.3	51.9
Green Ext Time (p_c), s		0.0		73.7			0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	63.4
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1721	948	542	1313	0	0	0	0	163	0	401
Future Volume (veh/h)	0	1721	948	542	1313	0	0	0	0	163	0	401
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	1871	1030	589	1427	0				177	0	436
Adj No. of Lanes	0	3	1	1	2	0				0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2204	686	523	2713	0				266	0	418
Arrive On Green	0.00	0.87	0.87	0.29	0.77	0.00				0.15	0.00	0.15
Sat Flow, veh/h	0	5253	1583	1774	3632	0				1774	0	2787
Grp Volume(v), veh/h	0	1871	1030	589	1427	0				177	0	436
Grp Sat Flow(s),veh/h/ln	0	1695	1583	1774	1770	0				1774	0	1393
Q Serve(g_s), s	0.0	22.3	52.0	35.4	18.9	0.0				11.3	0.0	18.0
Cycle Q Clear(g_c), s	0.0	22.3	52.0	35.4	18.9	0.0				11.3	0.0	18.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2204	686	523	2713	0				266	0	418
V/C Ratio(X)	0.00	0.85	1.50	1.13	0.53	0.00				0.67	0.00	1.04
Avail Cap(c_a), veh/h	0	2204	686	523	2713	0				266	0	418
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.47	0.47	0.64	0.64	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.0	8.0	42.3	5.5	0.0				48.2	0.0	51.0
Incr Delay (d2), s/veh	0.0	2.1	229.2	72.0	0.5	0.0				6.1	0.0	55.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.8	63.9	27.8	9.3	0.0				6.0	0.0	10.1
LnGrp Delay(d),s/veh	0.0	8.1	237.2	114.3	5.9	0.0				54.3	0.0	106.7
LnGrp LOS		A	F	F	A					D		F
Approach Vol, veh/h		2901			2016						613	
Approach Delay, s/veh		89.4			37.6						91.6	
Approach LOS		F			D						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			40.0	57.4		22.6		97.4
Change Period (Y+Rc), s			4.6	5.4		4.6		5.4
Max Green Setting (Gmax), s			35.4	52.0		18.0		92.0
Max Q Clear Time (g_c+I1), s			37.4	54.0		20.0		20.9
Green Ext Time (p_c), s			0.0	0.0		0.0		66.0

Intersection Summary	
HCM 2010 Ctrl Delay	70.8
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	674	395	0	0	354	117	1005	0	179	0	0	0
Future Volume (veh/h)	674	395	0	0	354	117	1005	0	179	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	733	429	0	0	385	127	1092	0	195			
Adj No. of Lanes	2	2	0	0	2	1	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	1216	2017	0	0	608	272	1230	0	549			
Arrive On Green	0.12	0.19	0.00	0.00	0.06	0.06	0.35	0.00	0.35			
Sat Flow, veh/h	3442	3632	0	0	3632	1583	3548	0	1583			
Grp Volume(v), veh/h	733	429	0	0	385	127	1092	0	195			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1583	1774	0	1583			
Q Serve(g_s), s	24.3	12.3	0.0	0.0	12.8	9.3	34.9	0.0	11.0			
Cycle Q Clear(g_c), s	24.3	12.3	0.0	0.0	12.8	9.3	34.9	0.0	11.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1216	2017	0	0	608	272	1230	0	549			
V/C Ratio(X)	0.60	0.21	0.00	0.00	0.63	0.47	0.89	0.00	0.36			
Avail Cap(c_a), veh/h	1216	2017	0	0	608	272	1520	0	678			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.41	0.41	0.00	0.00	0.99	0.99	1.00	0.00	1.00			
Uniform Delay (d), s/veh	45.0	25.9	0.0	0.0	52.9	51.3	37.0	0.0	29.2			
Incr Delay (d2), s/veh	0.3	0.1	0.0	0.0	4.9	5.6	5.8	0.0	0.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	11.6	6.1	0.0	0.0	6.7	4.5	18.0	0.0	4.9			
LnGrp Delay(d),s/veh	45.4	26.0	0.0	0.0	57.8	56.9	42.8	0.0	29.6			
LnGrp LOS	D	C			E	F	D		C			
Approach Vol, veh/h		1162			512			1287				
Approach Delay, s/veh		38.2			57.6			40.8				
Approach LOS		D			E			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		46.2		73.8			47.8	26.0
Change Period (Y+Rc), s		4.6		5.4			5.4	* 5.4
Max Green Setting (Gmax), s		51.4		58.6			33.4	* 21
Max Q Clear Time (g_c+I1), s		36.9		14.3			26.3	14.8
Green Ext Time (p_c), s		4.8		6.8			3.3	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	42.7
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	92	477	510	18	23	60
Future Volume (veh/h)	92	477	510	18	23	60
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	100	518	568	0	25	65
Adj No. of Lanes	1	2	2	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	171	1868	2036	1510	353	300
Arrive On Green	0.10	0.10	0.57	0.00	0.19	0.19
Sat Flow, veh/h	1774	2787	3548	1863	1863	1583
Grp Volume(v), veh/h	100	518	568	0	25	65
Grp Sat Flow(s),veh/h/ln	1774	1393	1774	1863	1863	1583
Q Serve(g_s), s	5.4	0.0	8.1	0.0	1.1	3.5
Cycle Q Clear(g_c), s	5.4	0.0	8.1	0.0	1.1	3.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	171	1868	2036	1510	353	300
V/C Ratio(X)	0.58	0.28	0.28	0.00	0.07	0.22
Avail Cap(c_a), veh/h	415	2251	2036	1510	397	337
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.97	0.00	1.00	1.00
Uniform Delay (d), s/veh	43.3	6.7	10.8	0.0	33.3	34.2
Incr Delay (d2), s/veh	3.1	0.1	0.1	0.0	0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	7.1	4.0	0.0	0.6	1.5
LnGrp Delay(d),s/veh	46.4	6.8	10.9	0.0	33.4	34.6
LnGrp LOS	D	A	B		C	C
Approach Vol, veh/h	618			568	90	
Approach Delay, s/veh	13.2			10.9	34.2	
Approach LOS	B			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		85.7		14.3	62.1	23.7		
Change Period (Y+Rc), s		* 4.7		4.6	* 4.7	* 4.7		
Max Green Setting (Gmax), s		* 67		23.4	* 41	* 21		
Max Q Clear Time (g_c+I1), s		0.0		7.4	10.1	5.5		
Green Ext Time (p_c), s		0.0		2.3	2.2	0.2		

Intersection Summary	
HCM 2010 Ctrl Delay	13.6
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	479	180	2	1	225	49	5	18	0	75	15	425
Future Volume (veh/h)	479	180	2	1	225	49	5	18	0	75	15	425
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	521	196	2	1	245	53	5	20	0	82	16	462
Adj No. of Lanes	2	1	0	1	1	0	0	1	0	0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	874	1275	13	2	646	140	9	37	0	137	27	963
Arrive On Green	0.42	1.00	1.00	0.00	0.44	0.44	0.03	0.03	0.00	0.09	0.09	0.09
Sat Flow, veh/h	3442	1841	19	1774	1485	321	369	1475	0	1496	292	2787
Grp Volume(v), veh/h	521	0	198	1	0	298	25	0	0	98	0	462
Grp Sat Flow(s),veh/h/ln	1721	0	1859	1774	0	1806	1844	0	0	1788	0	1393
Q Serve(g_s), s	11.7	0.0	0.0	0.1	0.0	11.2	1.3	0.0	0.0	5.3	0.0	0.0
Cycle Q Clear(g_c), s	11.7	0.0	0.0	0.1	0.0	11.2	1.3	0.0	0.0	5.3	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.18	0.20		0.00	0.84		1.00
Lane Grp Cap(c), veh/h	874	0	1288	2	0	786	46	0	0	164	0	963
V/C Ratio(X)	0.60	0.00	0.15	0.41	0.00	0.38	0.54	0.00	0.00	0.60	0.00	0.48
Avail Cap(c_a), veh/h	874	0	1288	89	0	786	332	0	0	322	0	1209
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.00	0.91	1.00	0.00	1.00	1.00	0.00	0.00	0.99	0.00	0.99
Uniform Delay (d), s/veh	24.9	0.0	0.0	49.9	0.0	19.1	48.2	0.0	0.0	43.6	0.0	25.7
Incr Delay (d2), s/veh	1.0	0.0	0.2	84.8	0.0	0.3	9.5	0.0	0.0	3.4	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	0.1	0.1	0.0	5.6	0.8	0.0	0.0	2.8	0.0	5.0
LnGrp Delay(d),s/veh	25.9	0.0	0.2	134.7	0.0	19.4	57.7	0.0	0.0	47.0	0.0	26.0
LnGrp LOS	C		A	F		B	F			D		C
Approach Vol, veh/h		719			299			25			560	
Approach Delay, s/veh		18.8			19.8			57.7			29.7	
Approach LOS		B			B			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		7.1	4.7	74.4		13.8	30.5	48.6
Change Period (Y+Rc), s		4.6	4.6	5.1		4.6	5.1	* 5.1
Max Green Setting (Gmax), s		18.0	5.0	40.1		18.0	22.2	* 23
Max Q Clear Time (g_c+I1), s		3.3	2.1	2.0		7.3	13.7	13.2
Green Ext Time (p_c), s		0.0	0.0	3.3		1.9	2.1	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	23.4
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	685	878	151	645	0	0	0	0	44	0	448
Future Volume (veh/h)	0	685	878	151	645	0	0	0	0	44	0	448
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	745	954	164	701	0				48	0	487
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1653	739	229	2290	0				454	0	405
Arrive On Green	0.00	0.78	0.78	0.26	1.00	0.00				0.26	0.00	0.26
Sat Flow, veh/h	0	3632	1583	1774	3632	0				1774	0	1583
Grp Volume(v), veh/h	0	745	954	164	701	0				48	0	487
Grp Sat Flow(s),veh/h/ln	0	1770	1583	1774	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	7.1	46.7	8.4	0.0	0.0				2.1	0.0	25.6
Cycle Q Clear(g_c), s	0.0	7.1	46.7	8.4	0.0	0.0				2.1	0.0	25.6
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1653	739	229	2290	0				454	0	405
V/C Ratio(X)	0.00	0.45	1.29	0.72	0.31	0.00				0.11	0.00	1.20
Avail Cap(c_a), veh/h	0	1653	739	238	2290	0				454	0	405
HCM Platoon Ratio	1.00	1.67	1.67	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.88	0.88	0.89	0.89	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.7	11.0	35.4	0.0	0.0				28.4	0.0	37.2
Incr Delay (d2), s/veh	0.0	0.8	139.5	8.6	0.3	0.0				0.1	0.0	112.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.4	47.8	4.6	0.1	0.0				1.0	0.0	23.8
LnGrp Delay(d),s/veh	0.0	7.4	150.5	44.0	0.3	0.0				28.5	0.0	149.3
LnGrp LOS		A	F	D	A					C		F
Approach Vol, veh/h		1699			865						535	
Approach Delay, s/veh		87.7			8.6						138.5	
Approach LOS		F			A						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			18.0	51.8		30.2		69.8
Change Period (Y+Rc), s			5.1	* 5.1		4.6		5.1
Max Green Setting (Gmax), s			13.4	* 47		25.6		64.7
Max Q Clear Time (g_c+I1), s			10.4	48.7		27.6		2.0
Green Ext Time (p_c), s			1.5	0.0		0.0		6.4

Intersection Summary	
HCM 2010 Ctrl Delay	74.4
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2128	714	187	2271	0	0	0	0	125	0	491
Future Volume (veh/h)	0	2128	714	187	2271	0	0	0	0	125	0	491
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	2319	772	203	2468	0				136	0	0
Adj No. of Lanes	0	3	1	2	3	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2738	776	973	4217	0				219	0	98
Arrive On Green	0.00	0.49	0.49	0.57	1.00	0.00				0.06	0.00	0.00
Sat Flow, veh/h	0	5588	1583	3442	5253	0				3548	0	1583
Grp Volume(v), veh/h	0	2319	772	203	2468	0				136	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1695	0				1774	0	1583
Q Serve(g_s), s	0.0	32.6	43.7	2.6	0.0	0.0				3.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	32.6	43.7	2.6	0.0	0.0				3.4	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2738	776	973	4217	0				219	0	98
V/C Ratio(X)	0.00	0.85	1.00	0.21	0.59	0.00				0.62	0.00	0.00
Avail Cap(c_a), veh/h	0	2738	776	973	4217	0				997	0	445
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.25	0.25	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	20.0	22.8	14.6	0.0	0.0				41.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.5	31.1	0.0	0.1	0.0				2.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	17.4	25.6	1.2	0.1	0.0				1.7	0.0	0.0
LnGrp Delay(d),s/veh	0.0	23.5	54.0	14.6	0.1	0.0				44.0	0.0	0.0
LnGrp LOS		C	D	B	A					D		
Approach Vol, veh/h		3091			2671						136	
Approach Delay, s/veh		31.1			1.2						44.0	
Approach LOS		C			A						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			30.5	49.2		10.3		79.7
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			6.1	* 44		25.3		54.9
Max Q Clear Time (g_c+I1), s			4.6	45.7		5.4		2.0
Green Ext Time (p_c), s			1.1	0.0		0.4		39.4

Intersection Summary	
HCM 2010 Ctrl Delay	17.9
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	1786	0	0	1601	128	1044	0	563	0	0	0
Future Volume (veh/h)	230	1786	0	0	1601	128	1044	0	563	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	250	1941	0	0	1740	139	1135	0	0			
Adj No. of Lanes	1	3	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	274	2759	0	0	2047	164	1237	0	552			
Arrive On Green	0.31	1.00	0.00	0.00	0.34	0.34	0.35	0.00	0.00			
Sat Flow, veh/h	1774	5253	0	0	6357	487	3548	0	1583			
Grp Volume(v), veh/h	250	1941	0	0	1372	507	1135	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1695	0	0	1602	1777	1774	0	1583			
Q Serve(g_s), s	12.2	0.0	0.0	0.0	23.9	23.9	27.6	0.0	0.0			
Cycle Q Clear(g_c), s	12.2	0.0	0.0	0.0	23.9	23.9	27.6	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.27	1.00		1.00			
Lane Grp Cap(c), veh/h	274	2759	0	0	1614	597	1237	0	552			
V/C Ratio(X)	0.91	0.70	0.00	0.00	0.85	0.85	0.92	0.00	0.00			
Avail Cap(c_a), veh/h	274	2759	0	0	1614	597	1313	0	586			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	30.5	0.0	0.0	0.0	27.8	27.8	28.1	0.0	0.0			
Incr Delay (d2), s/veh	4.7	0.1	0.0	0.0	5.8	14.1	10.0	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.2	0.0	0.0	0.0	11.4	14.0	15.1	0.0	0.0			
LnGrp Delay(d),s/veh	35.3	0.1	0.0	0.0	33.6	41.9	38.1	0.0	0.0			
LnGrp LOS	D	A			C	D	D					
Approach Vol, veh/h		2191			1879			1135				
Approach Delay, s/veh		4.1			35.8			38.1				
Approach LOS		A			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		36.1		53.9			18.6	35.3
Change Period (Y+Rc), s		* 4.7		5.1			* 4.7	5.1
Max Green Setting (Gmax), s		* 33		46.9			* 14	28.3
Max Q Clear Time (g_c+I1), s		29.6		2.0			14.2	25.9
Green Ext Time (p_c), s		1.8		41.7			0.0	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	23.0
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2406	683	203	2468	68	68	534
v/c Ratio	1.03	0.67	0.88	0.80	0.17	0.18	1.05
Control Delay	49.4	5.0	55.0	10.6	25.7	25.7	83.2
Queue Delay	0.0	0.0	0.0	8.4	0.0	0.0	0.0
Total Delay	49.4	5.0	55.0	19.0	25.7	25.7	83.2
Queue Length 50th (ft)	~570	0	59	180	30	30	~297
Queue Length 95th (ft)	#674	66	m64	m198	65	65	#496
Internal Link Dist (ft)	1867			161		261	
Turn Bay Length (ft)							
Base Capacity (vph)	2345	1015	232	3101	472	378	507
Starvation Cap Reductn	0	0	0	624	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.67	0.88	1.00	0.14	0.18	1.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	250	1941	1879	567	568	612
v/c Ratio	0.92	0.73	0.94	0.91	0.91	0.96
Control Delay	72.3	10.6	40.1	48.7	49.0	53.0
Queue Delay	27.9	3.5	0.1	15.8	16.2	0.0
Total Delay	100.2	14.0	40.2	64.6	65.1	53.0
Queue Length 50th (ft)	0	131	297	316	317	299
Queue Length 95th (ft)	m0	m128	#378	#532	#532	#525
Internal Link Dist (ft)		161	3355		754	
Turn Bay Length (ft)						
Base Capacity (vph)	273	2649	2006	621	621	637
Starvation Cap Reductn	33	599	0	0	0	0
Spillback Cap Reductn	0	0	3	60	60	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.95	0.94	1.01	1.01	0.96

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1447	780	463	990	129	287
v/c Ratio	0.72	0.84	0.94	0.39	no cap	0.39
Control Delay	17.4	12.9	57.4	1.7		6.0
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	17.4	12.9	57.4	1.7	Error	6.0
Queue Length 50th (ft)	209	46	252	25	~172	0
Queue Length 95th (ft)	m146	m#101	#463	30	#290	38
Internal Link Dist (ft)	790			642	1579	
Turn Bay Length (ft)			300			500
Base Capacity (vph)	2015	929	502	2548	1	737
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.84	0.92	0.39	129.00	0.39

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	561	325	277	98	375	375	153
v/c Ratio	0.60	0.17	0.38	0.24	0.60	0.60	0.22
Control Delay	10.7	4.4	32.9	5.3	30.1	30.1	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.7	4.4	32.9	5.3	30.1	30.1	4.4
Queue Length 50th (ft)	28	11	80	0	200	200	0
Queue Length 95th (ft)	56	m21	53	17	302	302	40
Internal Link Dist (ft)		642	297			1010	
Turn Bay Length (ft)	300				400		400
Base Capacity (vph)	940	1861	729	403	628	628	687
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.17	0.38	0.24	0.60	0.60	0.22

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1331	718	426	911	0	0	0	0	119	0	264
Future Volume (veh/h)	0	1331	718	426	911	0	0	0	0	119	0	264
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	1447	780	463	990	0				129	0	287
Adj No. of Lanes	0	3	1	1	2	0				0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2282	711	489	2726	0				230	0	362
Arrive On Green	0.00	0.90	0.90	0.37	1.00	0.00				0.13	0.00	0.13
Sat Flow, veh/h	0	5253	1583	1774	3632	0				1774	0	2787
Grp Volume(v), veh/h	0	1447	780	463	990	0				129	0	287
Grp Sat Flow(s),veh/h/ln	0	1695	1583	1774	1770	0				1774	0	1393
Q Serve(g_s), s	0.0	6.8	44.9	25.3	0.0	0.0				6.8	0.0	10.0
Cycle Q Clear(g_c), s	0.0	6.8	44.9	25.3	0.0	0.0				6.8	0.0	10.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2282	711	489	2726	0				230	0	362
V/C Ratio(X)	0.00	0.63	1.10	0.95	0.36	0.00				0.56	0.00	0.79
Avail Cap(c_a), veh/h	0	2282	711	504	2726	0				319	0	502
HCM Platoon Ratio	1.00	2.00	2.00	1.33	1.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.71	0.71	0.85	0.85	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	3.2	5.1	31.0	0.0	0.0				40.8	0.0	42.2
Incr Delay (d2), s/veh	0.0	1.0	59.0	24.4	0.3	0.0				2.1	0.0	5.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.9	27.8	15.7	0.1	0.0				3.5	0.0	4.1
LnGrp Delay(d),s/veh	0.0	4.1	64.1	55.4	0.3	0.0				42.9	0.0	48.1
LnGrp LOS		A	F	E	A					D		D
Approach Vol, veh/h		2227			1453						416	
Approach Delay, s/veh		25.2			17.9						46.5	
Approach LOS		C			B						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			32.1	50.3		17.6		82.4
Change Period (Y+Rc), s			4.6	5.4		4.6		5.4
Max Green Setting (Gmax), s			28.4	39.0		18.0		72.0
Max Q Clear Time (g_c+I1), s			27.3	46.9		12.0		2.0
Green Ext Time (p_c), s			0.2	0.0		1.0		50.2

Intersection Summary	
HCM 2010 Ctrl Delay	24.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	516	299	0	0	255	90	690	0	141	0	0	0
Future Volume (veh/h)	516	299	0	0	255	90	690	0	141	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	561	325	0	0	277	98	750	0	153			
Adj No. of Lanes	2	2	0	0	2	1	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	1335	2293	0	0	729	326	895	0	399			
Arrive On Green	0.13	0.21	0.00	0.00	0.07	0.07	0.25	0.00	0.25			
Sat Flow, veh/h	3442	3632	0	0	3632	1583	3548	0	1583			
Grp Volume(v), veh/h	561	325	0	0	277	98	750	0	153			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1583	1774	0	1583			
Q Serve(g_s), s	15.0	7.4	0.0	0.0	7.5	5.9	20.0	0.0	8.0			
Cycle Q Clear(g_c), s	15.0	7.4	0.0	0.0	7.5	5.9	20.0	0.0	8.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1335	2293	0	0	729	326	895	0	399			
V/C Ratio(X)	0.42	0.14	0.00	0.00	0.38	0.30	0.84	0.00	0.38			
Avail Cap(c_a), veh/h	1335	2293	0	0	729	326	1327	0	592			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.63	0.63	0.00	0.00	0.99	0.99	1.00	0.00	1.00			
Uniform Delay (d), s/veh	33.2	16.8	0.0	0.0	40.5	39.7	35.5	0.0	30.9			
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	1.5	2.3	3.2	0.0	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	7.2	3.7	0.0	0.0	3.8	2.8	10.2	0.0	3.6			
LnGrp Delay(d),s/veh	33.4	16.9	0.0	0.0	42.0	42.1	38.6	0.0	31.6			
LnGrp LOS	C	B			D	D	D		C			
Approach Vol, veh/h		886			375			903				
Approach Delay, s/veh		27.3			42.0			37.4				
Approach LOS		C			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		29.8		70.2			44.2	26.0
Change Period (Y+Rc), s		4.6		5.4			5.4	* 5.4
Max Green Setting (Gmax), s		37.4		52.6			27.4	* 21
Max Q Clear Time (g_c+I1), s		22.0		9.4			17.0	9.5
Green Ext Time (p_c), s		3.2		4.7			3.2	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	34.1
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	52	447	169	168	25	79
v/c Ratio	0.34	0.18	0.13	0.13	0.18	0.42
Control Delay	46.7	0.4	1.3	1.3	44.0	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.7	0.4	1.3	1.3	44.0	16.9
Queue Length 50th (ft)	30	0	10	9	15	0
Queue Length 95th (ft)	66	7	7	7	39	43
Internal Link Dist (ft)	501			396	912	
Turn Bay Length (ft)	200	200	200			100
Base Capacity (vph)	413	2460	1256	1260	471	459
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.18	0.13	0.13	0.05	0.17

Intersection Summary

Lane Group	EBL	EBT	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	279	149	181	11	80	359
v/c Ratio	0.14	0.10	0.65	0.09	0.45	0.17
Control Delay	1.5	0.3	47.3	43.6	48.8	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.5	0.3	47.3	43.6	48.8	0.7
Queue Length 50th (ft)	2	1	101	6	47	0
Queue Length 95th (ft)	36	3	161	24	90	14
Internal Link Dist (ft)		628	769	803	396	
Turn Bay Length (ft)	225					180
Base Capacity (vph)	2054	1499	368	344	343	2095
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.10	0.49	0.03	0.23	0.17

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	552	725	123	511	36	363
v/c Ratio	0.31	0.63	0.50	0.21	no cap	0.59
Control Delay	7.1	5.6	46.1	4.5		7.7
Queue Delay	0.0	0.7	0.0	0.0		0.0
Total Delay	7.1	6.3	46.1	4.5	Error	7.7
Queue Length 50th (ft)	36	67	74	41	~46	0
Queue Length 95th (ft)	46	114	132	49	#110	71
Internal Link Dist (ft)	469			628	1158	
Turn Bay Length (ft)			225			200
Base Capacity (vph)	1787	1158	247	2450	1	660
Starvation Cap Reductn	0	167	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.73	0.50	0.21	36.00	0.55

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	48	411	305	5	23	73
Future Volume (veh/h)	48	411	305	5	23	73
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	52	447	336	0	25	79
Adj No. of Lanes	1	2	2	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	121	1752	1988	1555	420	357
Arrive On Green	0.07	0.07	0.56	0.00	0.23	0.23
Sat Flow, veh/h	1774	2787	3548	1863	1863	1583
Grp Volume(v), veh/h	52	447	336	0	25	79
Grp Sat Flow(s),veh/h/ln	1774	1393	1774	1863	1863	1583
Q Serve(g_s), s	2.7	0.0	4.4	0.0	1.0	3.9
Cycle Q Clear(g_c), s	2.7	0.0	4.4	0.0	1.0	3.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	121	1752	1988	1555	420	357
V/C Ratio(X)	0.43	0.26	0.17	0.00	0.06	0.22
Avail Cap(c_a), veh/h	414	2212	1988	1555	472	401
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	7.9	10.2	0.0	29.2	30.3
Incr Delay (d2), s/veh	2.4	0.1	0.0	0.0	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	5.9	2.2	0.0	0.5	1.7
LnGrp Delay(d),s/veh	45.3	8.0	10.3	0.0	29.2	30.6
LnGrp LOS	D	A	B		C	C
Approach Vol, veh/h	499			336	104	
Approach Delay, s/veh	11.9			10.3	30.3	
Approach LOS	B			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		84.8		11.2	58.5	26.3		
Change Period (Y+Rc), s		* 4.7		4.6	* 4.7	* 4.7		
Max Green Setting (Gmax), s		* 64		22.4	* 35	* 24		
Max Q Clear Time (g_c+I1), s		0.0		4.7	6.4	5.9		
Green Ext Time (p_c), s		0.0		1.9	1.2	0.3		

Intersection Summary	
HCM 2010 Ctrl Delay	13.3
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	257	135	2	0	145	21	3	7	0	58	16	330
Future Volume (veh/h)	257	135	2	0	145	21	3	7	0	58	16	330
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	279	147	2	0	158	23	3	8	0	63	17	359
Adj No. of Lanes	2	1	0	1	1	0	0	1	0	0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	801	1390	19	2	751	109	7	18	0	113	30	871
Arrive On Green	0.08	0.25	0.25	0.00	0.47	0.47	0.01	0.01	0.00	0.08	0.08	0.08
Sat Flow, veh/h	3442	1833	25	1774	1590	232	501	1337	0	1411	381	2787
Grp Volume(v), veh/h	279	0	149	0	0	181	11	0	0	80	0	359
Grp Sat Flow(s),veh/h/ln	1721	0	1858	1774	0	1822	1838	0	0	1792	0	1393
Q Serve(g_s), s	7.4	0.0	5.9	0.0	0.0	5.6	0.6	0.0	0.0	4.1	0.0	0.0
Cycle Q Clear(g_c), s	7.4	0.0	5.9	0.0	0.0	5.6	0.6	0.0	0.0	4.1	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.13	0.27		0.00	0.79		1.00
Lane Grp Cap(c), veh/h	801	0	1408	2	0	860	24	0	0	143	0	871
V/C Ratio(X)	0.35	0.00	0.11	0.00	0.00	0.21	0.45	0.00	0.00	0.56	0.00	0.41
Avail Cap(c_a), veh/h	801	0	1408	92	0	860	345	0	0	344	0	1182
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.00	0.96	0.00	0.00	1.00	1.00	0.00	0.00	0.99	0.00	0.99
Uniform Delay (d), s/veh	37.4	0.0	10.9	0.0	0.0	14.8	47.0	0.0	0.0	42.5	0.0	26.0
Incr Delay (d2), s/veh	0.2	0.0	0.1	0.0	0.0	0.1	12.5	0.0	0.0	3.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	3.1	0.0	0.0	2.8	0.4	0.0	0.0	2.2	0.0	3.8
LnGrp Delay(d),s/veh	37.7	0.0	11.1	0.0	0.0	15.0	59.6	0.0	0.0	45.9	0.0	26.4
LnGrp LOS	D		B			B	E			D		C
Approach Vol, veh/h		428			181			11			439	
Approach Delay, s/veh		28.4			15.0			59.6			29.9	
Approach LOS		C			B			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		5.9	0.0	77.9		12.3	27.4	50.4
Change Period (Y+Rc), s		4.6	4.6	5.1		4.6	5.1	* 5.1
Max Green Setting (Gmax), s		18.0	5.0	35.7		18.4	21.8	* 19
Max Q Clear Time (g_c+I1), s		2.6	0.0	7.9		6.1	9.4	7.6
Green Ext Time (p_c), s		0.0	0.0	1.9		1.5	1.5	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	27.1
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	508	667	113	470	0	0	0	0	33	0	334
Future Volume (veh/h)	0	508	667	113	470	0	0	0	0	33	0	334
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	552	725	123	511	0				36	0	363
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1655	741	238	2319	0				432	0	386
Arrive On Green	0.00	0.31	0.31	0.27	1.00	0.00				0.24	0.00	0.24
Sat Flow, veh/h	0	3632	1583	1774	3632	0				1774	0	1583
Grp Volume(v), veh/h	0	552	725	123	511	0				36	0	363
Grp Sat Flow(s),veh/h/ln	0	1770	1583	1774	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	11.5	43.5	5.7	0.0	0.0				1.5	0.0	21.6
Cycle Q Clear(g_c), s	0.0	11.5	43.5	5.7	0.0	0.0				1.5	0.0	21.6
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1655	741	238	2319	0				432	0	386
V/C Ratio(X)	0.00	0.33	0.98	0.52	0.22	0.00				0.08	0.00	0.94
Avail Cap(c_a), veh/h	0	1655	741	248	2319	0				432	0	386
HCM Platoon Ratio	1.00	0.67	0.67	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.91	0.91	0.95	0.95	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	21.5	32.5	32.4	0.0	0.0				28.0	0.0	35.6
Incr Delay (d2), s/veh	0.0	0.5	26.8	1.6	0.2	0.0				0.1	0.0	31.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.7	24.6	2.8	0.1	0.0				0.7	0.0	12.7
LnGrp Delay(d),s/veh	0.0	22.0	59.3	34.1	0.2	0.0				28.1	0.0	66.6
LnGrp LOS		C	E	C	A					C		E
Approach Vol, veh/h		1277			634						399	
Approach Delay, s/veh		43.2			6.8						63.1	
Approach LOS		D			A						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			18.0	50.0		28.0		68.0
Change Period (Y+Rc), s			5.1	* 5.1		4.6		5.1
Max Green Setting (Gmax), s			13.4	* 45		23.4		62.9
Max Q Clear Time (g_c+I1), s			7.7	45.5		23.6		2.0
Green Ext Time (p_c), s			1.9	0.0		0.0		4.3

Intersection Summary	
HCM 2010 Ctrl Delay	36.6
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2841	952	245	3018	0	0	0	0	171	0	655
Future Volume (veh/h)	0	2841	952	245	3018	0	0	0	0	171	0	655
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	3094	1031	266	3280	0				186	0	0
Adj No. of Lanes	0	3	1	2	3	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2943	834	1038	4390	0				247	0	110
Arrive On Green	0.00	0.53	0.53	0.60	1.00	0.00				0.07	0.00	0.00
Sat Flow, veh/h	0	5588	1583	3442	5253	0				3548	0	1583
Grp Volume(v), veh/h	0	3094	1031	266	3280	0				186	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1695	0				1774	0	1583
Q Serve(g_s), s	0.0	76.9	76.9	5.3	0.0	0.0				7.5	0.0	0.0
Cycle Q Clear(g_c), s	0.0	76.9	76.9	5.3	0.0	0.0				7.5	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2943	834	1038	4390	0				247	0	110
V/C Ratio(X)	0.00	1.05	1.24	0.26	0.75	0.00				0.75	0.00	0.00
Avail Cap(c_a), veh/h	0	2943	834	1038	4390	0				1101	0	491
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	34.5	34.5	21.3	0.0	0.0				66.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	32.1	116.6	0.0	0.1	0.0				4.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	48.0	60.4	2.5	0.0	0.0				3.9	0.0	0.0
LnGrp Delay(d),s/veh	0.0	66.6	151.2	21.3	0.1	0.0				71.3	0.0	0.0
LnGrp LOS		F	F	C	A					E		
Approach Vol, veh/h		4125			3546						186	
Approach Delay, s/veh		87.7			1.7						71.3	
Approach LOS		F			A						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			49.1	82.0		14.9		131.1
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			9.3	* 77		45.3		90.9
Max Q Clear Time (g_c+I1), s			7.3	78.9		9.5		2.0
Green Ext Time (p_c), s			1.6	0.0		0.6		80.8

Intersection Summary	
HCM 2010 Ctrl Delay	48.5
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	306	2388	0	0	2120	161	1392	0	753	0	0	0
Future Volume (veh/h)	306	2388	0	0	2120	161	1392	0	753	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	333	2596	0	0	2304	175	1513	0	0			
Adj No. of Lanes	1	3	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	271	2678	0	0	2093	159	1441	0	643			
Arrive On Green	0.31	1.00	0.00	0.00	0.34	0.34	0.41	0.00	0.00			
Sat Flow, veh/h	1774	5253	0	0	6384	464	3548	0	1583			
Grp Volume(v), veh/h	333	2596	0	0	1807	672	1513	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1695	0	0	1602	1781	1774	0	1583			
Q Serve(g_s), s	22.3	0.0	0.0	0.0	49.9	49.9	59.3	0.0	0.0			
Cycle Q Clear(g_c), s	22.3	0.0	0.0	0.0	49.9	49.9	59.3	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.26	1.00		1.00			
Lane Grp Cap(c), veh/h	271	2678	0	0	1643	609	1441	0	643			
V/C Ratio(X)	1.23	0.97	0.00	0.00	1.10	1.10	1.05	0.00	0.00			
Avail Cap(c_a), veh/h	271	2678	0	0	1643	609	1441	0	643			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	50.7	0.0	0.0	0.0	48.0	48.1	43.3	0.0	0.0			
Incr Delay (d2), s/veh	106.1	1.7	0.0	0.0	55.0	68.2	38.0	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	18.8	0.4	0.0	0.0	30.4	36.1	36.6	0.0	0.0			
LnGrp Delay(d),s/veh	156.8	1.7	0.0	0.0	103.0	116.3	81.3	0.0	0.0			
LnGrp LOS	F	A			F	F	F					
Approach Vol, veh/h		2929			2479			1513				
Approach Delay, s/veh		19.3			106.6			81.3				
Approach LOS		B			F			F				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		64.0		82.0			27.0	55.0
Change Period (Y+Rc), s		* 4.7		5.1			* 4.7	5.1
Max Green Setting (Gmax), s		* 59		76.9			* 22	49.9
Max Q Clear Time (g_c+I1), s		61.3		2.0			24.3	51.9
Green Ext Time (p_c), s		0.0		73.7			0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	64.1
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	3212	911	266	3280	93	93	712
v/c Ratio	1.28	0.97	1.22	1.04	0.18	0.18	1.35
Control Delay	158.6	40.1	151.4	38.1	38.0	38.0	205.4
Queue Delay	0.3	0.0	0.0	27.3	0.2	0.2	0.0
Total Delay	158.8	40.1	151.4	65.4	38.2	38.2	205.4
Queue Length 50th (ft)	~1499	617	~163	~1255	68	68	~851
Queue Length 95th (ft)	#1573	#1058	m#134	m431	117	117	#1101
Internal Link Dist (ft)	1867			161		261	
Turn Bay Length (ft)							
Base Capacity (vph)	2518	937	218	3165	521	521	528
Starvation Cap Reductn	0	0	0	1000	0	0	0
Spillback Cap Reductn	276	0	0	0	130	130	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.43	0.97	1.22	1.52	0.24	0.24	1.35

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	333	2596	2479	756	757	818
v/c Ratio	1.23	0.97	1.14	1.11	1.11	1.22
Control Delay	166.2	7.3	112.7	108.5	109.0	146.0
Queue Delay	5.7	43.0	0.0	4.1	4.1	0.0
Total Delay	171.9	50.2	112.7	112.6	113.1	146.0
Queue Length 50th (ft)	~386	62	~798	~861	~863	~923
Queue Length 95th (ft)	m#246	m49	#867	#1125	#1127	#1181
Internal Link Dist (ft)		161	3355		754	
Turn Bay Length (ft)						
Base Capacity (vph)	270	2678	2173	682	682	673
Starvation Cap Reductn	87	629	0	0	0	0
Spillback Cap Reductn	0	0	2	274	274	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.82	1.27	1.14	1.85	1.86	1.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1909	1021	617	1374	173	391
v/c Ratio	0.87	1.11	1.18	0.51	no cap	0.69
Control Delay	22.1	73.6	132.1	1.7		32.7
Queue Delay	0.0	0.1	0.0	0.3		0.0
Total Delay	22.1	73.7	132.1	2.0	Error	32.7
Queue Length 50th (ft)	450	~719	~572	35	~279	88
Queue Length 95th (ft)	m347	m#967	#795	40	#424	149
Internal Link Dist (ft)	790			642	1579	
Turn Bay Length (ft)			300			500
Base Capacity (vph)	2203	919	522	2713	1	570
Starvation Cap Reductn	0	21	0	613	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.87	1.14	1.18	0.65	173.00	0.69

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	726	436	380	130	521	521	205
v/c Ratio	0.76	0.25	0.63	0.34	0.72	0.72	0.26
Control Delay	16.8	6.2	48.3	6.9	35.5	35.5	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.8	6.2	48.3	6.9	35.5	35.5	3.7
Queue Length 50th (ft)	144	17	145	1	345	345	0
Queue Length 95th (ft)	m181	m35	183	26	489	489	44
Internal Link Dist (ft)		642	297			1010	
Turn Bay Length (ft)	300				400		400
Base Capacity (vph)	955	1728	607	379	720	720	795
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.25	0.63	0.34	0.72	0.72	0.26

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1756	939	568	1264	0	0	0	0	159	0	360
Future Volume (veh/h)	0	1756	939	568	1264	0	0	0	0	159	0	360
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	1909	1021	617	1374	0				173	0	391
Adj No. of Lanes	0	3	1	1	2	0				0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2204	686	523	2713	0				266	0	418
Arrive On Green	0.00	0.87	0.87	0.29	0.77	0.00				0.15	0.00	0.15
Sat Flow, veh/h	0	5253	1583	1774	3632	0				1774	0	2787
Grp Volume(v), veh/h	0	1909	1021	617	1374	0				173	0	391
Grp Sat Flow(s),veh/h/ln	0	1695	1583	1774	1770	0				1774	0	1393
Q Serve(g_s), s	0.0	24.1	52.0	35.4	17.8	0.0				11.0	0.0	16.6
Cycle Q Clear(g_c), s	0.0	24.1	52.0	35.4	17.8	0.0				11.0	0.0	16.6
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2204	686	523	2713	0				266	0	418
V/C Ratio(X)	0.00	0.87	1.49	1.18	0.51	0.00				0.65	0.00	0.94
Avail Cap(c_a), veh/h	0	2204	686	523	2713	0				266	0	418
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.46	0.46	0.67	0.67	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.1	8.0	42.3	5.3	0.0				48.0	0.0	50.4
Incr Delay (d2), s/veh	0.0	2.4	223.3	93.6	0.5	0.0				5.5	0.0	28.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.7	62.8	30.9	8.8	0.0				5.8	0.0	8.1
LnGrp Delay(d),s/veh	0.0	8.5	231.3	135.9	5.8	0.0				53.5	0.0	78.8
LnGrp LOS		A	F	F	A					D		E
Approach Vol, veh/h		2930			1991						564	
Approach Delay, s/veh		86.1			46.1						71.0	
Approach LOS		F			D						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			40.0	57.4		22.6		97.4
Change Period (Y+Rc), s			4.6	5.4		4.6		5.4
Max Green Setting (Gmax), s			35.4	52.0		18.0		92.0
Max Q Clear Time (g_c+I1), s			37.4	54.0		18.6		19.8
Green Ext Time (p_c), s			0.0	0.0		0.0		66.8

Intersection Summary	
HCM 2010 Ctrl Delay	70.1
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	668	401	0	0	350	120	959	0	189	0	0	0
Future Volume (veh/h)	668	401	0	0	350	120	959	0	189	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	726	436	0	0	380	130	1042	0	205			
Adj No. of Lanes	2	2	0	0	2	1	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	1262	2064	0	0	608	272	1183	0	528			
Arrive On Green	0.12	0.19	0.00	0.00	0.06	0.06	0.33	0.00	0.33			
Sat Flow, veh/h	3442	3632	0	0	3632	1583	3548	0	1583			
Grp Volume(v), veh/h	726	436	0	0	380	130	1042	0	205			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1583	1774	0	1583			
Q Serve(g_s), s	23.9	12.4	0.0	0.0	12.6	9.6	33.3	0.0	11.9			
Cycle Q Clear(g_c), s	23.9	12.4	0.0	0.0	12.6	9.6	33.3	0.0	11.9			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1262	2064	0	0	608	272	1183	0	528			
V/C Ratio(X)	0.58	0.21	0.00	0.00	0.63	0.48	0.88	0.00	0.39			
Avail Cap(c_a), veh/h	1262	2064	0	0	608	272	1520	0	678			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.38	0.38	0.00	0.00	0.99	0.99	1.00	0.00	1.00			
Uniform Delay (d), s/veh	43.9	25.2	0.0	0.0	52.8	51.4	37.7	0.0	30.6			
Incr Delay (d2), s/veh	0.2	0.1	0.0	0.0	4.7	5.8	5.2	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	11.5	6.1	0.0	0.0	6.6	4.6	17.1	0.0	5.3			
LnGrp Delay(d),s/veh	44.2	25.3	0.0	0.0	57.6	57.2	42.9	0.0	31.1			
LnGrp LOS	D	C			E	E	D		C			
Approach Vol, veh/h		1162			510			1247				
Approach Delay, s/veh		37.1			57.5			41.0				
Approach LOS		D			E			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		44.6		75.4			49.4	26.0
Change Period (Y+Rc), s		4.6		5.4			5.4	* 5.4
Max Green Setting (Gmax), s		51.4		58.6			33.4	* 21
Max Q Clear Time (g_c+I1), s		35.3		14.4			25.9	14.6
Green Ext Time (p_c), s		4.8		6.8			3.5	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	42.3
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	100	498	283	282	26	65
v/c Ratio	0.52	0.20	0.23	0.23	0.20	0.38
Control Delay	50.7	0.4	1.1	1.1	46.6	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.7	0.4	1.1	1.1	46.6	17.7
Queue Length 50th (ft)	61	0	16	16	16	0
Queue Length 95th (ft)	109	7	5	5	42	41
Internal Link Dist (ft)	501			396	912	
Turn Bay Length (ft)	200	200	200			100
Base Capacity (vph)	414	2480	1231	1238	396	388
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.20	0.23	0.23	0.07	0.17

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	511	200	1	300	25	98	441
v/c Ratio	0.29	0.14	0.01	0.77	0.20	0.51	0.23
Control Delay	4.5	0.6	45.0	48.7	46.9	51.7	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.5	0.6	45.0	48.7	46.9	51.7	1.2
Queue Length 50th (ft)	4	1	1	175	15	61	0
Queue Length 95th (ft)	120	5	6	248	41	108	17
Internal Link Dist (ft)		628		769	803	396	
Turn Bay Length (ft)	225		100				180
Base Capacity (vph)	1748	1404	99	444	331	321	1900
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.14	0.01	0.68	0.08	0.31	0.23

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	737	937	164	682	48	484
v/c Ratio	0.42	0.79	0.69	0.28	no cap	0.85
Control Delay	8.4	11.2	56.3	5.0		30.4
Queue Delay	0.0	3.1	0.0	0.0		0.0
Total Delay	8.4	14.3	56.3	5.0	Error	30.4
Queue Length 50th (ft)	99	457	106	58	~64	125
Queue Length 95th (ft)	80	233	m#187	74	#139	#291
Internal Link Dist (ft)	469			628	1158	
Turn Bay Length (ft)			225			200
Base Capacity (vph)	1769	1191	237	2406	1	611
Starvation Cap Reductn	0	162	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.91	0.69	0.28	48.00	0.79

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	92	458	501	18	24	60
Future Volume (veh/h)	92	458	501	18	24	60
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	100	498	559	0	26	65
Adj No. of Lanes	1	2	2	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	170	1865	2035	1511	355	302
Arrive On Green	0.10	0.10	0.57	0.00	0.19	0.19
Sat Flow, veh/h	1774	2787	3548	1863	1863	1583
Grp Volume(v), veh/h	100	498	559	0	26	65
Grp Sat Flow(s),veh/h/ln	1774	1393	1774	1863	1863	1583
Q Serve(g_s), s	5.4	0.0	8.0	0.0	1.1	3.5
Cycle Q Clear(g_c), s	5.4	0.0	8.0	0.0	1.1	3.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	170	1865	2035	1511	355	302
V/C Ratio(X)	0.59	0.27	0.27	0.00	0.07	0.22
Avail Cap(c_a), veh/h	415	2251	2035	1511	397	337
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.97	0.00	1.00	1.00
Uniform Delay (d), s/veh	43.3	6.7	10.8	0.0	33.2	34.2
Incr Delay (d2), s/veh	3.2	0.1	0.1	0.0	0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	6.9	3.9	0.0	0.6	1.5
LnGrp Delay(d),s/veh	46.6	6.7	10.9	0.0	33.3	34.5
LnGrp LOS	D	A	B		C	C
Approach Vol, veh/h	598			559	91	
Approach Delay, s/veh	13.4			10.9	34.2	
Approach LOS	B			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		85.8		14.2	62.1	23.8		
Change Period (Y+Rc), s		* 4.7		4.6	* 4.7	* 4.7		
Max Green Setting (Gmax), s		* 67		23.4	* 41	* 21		
Max Q Clear Time (g_c+I1), s		0.0		7.4	10.0	5.5		
Green Ext Time (p_c), s		0.0		2.2	2.1	0.2		

Intersection Summary	
HCM 2010 Ctrl Delay	13.8
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	470	182	2	1	227	49	5	18	0	75	15	406
Future Volume (veh/h)	470	182	2	1	227	49	5	18	0	75	15	406
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	511	198	2	1	247	53	5	20	0	82	16	441
Adj No. of Lanes	2	1	0	1	1	0	0	1	0	0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	871	1277	13	2	650	139	9	37	0	136	27	959
Arrive On Green	0.42	1.00	1.00	0.00	0.44	0.44	0.03	0.03	0.00	0.09	0.09	0.09
Sat Flow, veh/h	3442	1841	19	1774	1487	319	369	1475	0	1496	292	2787
Grp Volume(v), veh/h	511	0	200	1	0	300	25	0	0	98	0	441
Grp Sat Flow(s),veh/h/ln	1721	0	1859	1774	0	1806	1844	0	0	1788	0	1393
Q Serve(g_s), s	11.4	0.0	0.0	0.1	0.0	11.2	1.3	0.0	0.0	5.3	0.0	0.0
Cycle Q Clear(g_c), s	11.4	0.0	0.0	0.1	0.0	11.2	1.3	0.0	0.0	5.3	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.18	0.20		0.00	0.84		1.00
Lane Grp Cap(c), veh/h	871	0	1290	2	0	789	46	0	0	163	0	959
V/C Ratio(X)	0.59	0.00	0.16	0.41	0.00	0.38	0.54	0.00	0.00	0.60	0.00	0.46
Avail Cap(c_a), veh/h	871	0	1290	89	0	789	332	0	0	322	0	1207
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.00	0.91	1.00	0.00	1.00	1.00	0.00	0.00	0.99	0.00	0.99
Uniform Delay (d), s/veh	24.8	0.0	0.0	49.9	0.0	19.0	48.2	0.0	0.0	43.7	0.0	25.5
Incr Delay (d2), s/veh	0.9	0.0	0.2	84.8	0.0	0.3	9.5	0.0	0.0	3.5	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	0.1	0.1	0.0	5.6	0.8	0.0	0.0	2.8	0.0	4.7
LnGrp Delay(d),s/veh	25.8	0.0	0.2	134.7	0.0	19.3	57.7	0.0	0.0	47.2	0.0	25.9
LnGrp LOS	C		A	F		B	E			D		C
Approach Vol, veh/h		711			301			25			539	
Approach Delay, s/veh		18.6			19.7			57.7			29.8	
Approach LOS		B			B			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		7.1	4.7	74.5		13.7	30.4	48.8
Change Period (Y+Rc), s		4.6	4.6	5.1		4.6	5.1	* 5.1
Max Green Setting (Gmax), s		18.0	5.0	40.1		18.0	22.2	* 23
Max Q Clear Time (g_c+I1), s		3.3	2.1	2.0		7.3	13.4	13.2
Green Ext Time (p_c), s		0.0	0.0	3.3		1.8	2.2	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	23.2
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	678	862	151	627	0	0	0	0	44	0	445
Future Volume (veh/h)	0	678	862	151	627	0	0	0	0	44	0	445
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	737	937	164	682	0				48	0	484
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1653	739	229	2290	0				454	0	405
Arrive On Green	0.00	0.78	0.78	0.26	1.00	0.00				0.26	0.00	0.26
Sat Flow, veh/h	0	3632	1583	1774	3632	0				1774	0	1583
Grp Volume(v), veh/h	0	737	937	164	682	0				48	0	484
Grp Sat Flow(s),veh/h/ln	0	1770	1583	1774	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	7.0	46.7	8.4	0.0	0.0				2.1	0.0	25.6
Cycle Q Clear(g_c), s	0.0	7.0	46.7	8.4	0.0	0.0				2.1	0.0	25.6
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1653	739	229	2290	0				454	0	405
V/C Ratio(X)	0.00	0.45	1.27	0.72	0.30	0.00				0.11	0.00	1.19
Avail Cap(c_a), veh/h	0	1653	739	238	2290	0				454	0	405
HCM Platoon Ratio	1.00	1.67	1.67	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.87	0.87	0.89	0.89	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.6	11.0	35.4	0.0	0.0				28.4	0.0	37.2
Incr Delay (d2), s/veh	0.0	0.8	129.6	8.6	0.3	0.0				0.1	0.0	109.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.4	45.8	4.6	0.1	0.0				1.0	0.0	23.4
LnGrp Delay(d),s/veh	0.0	7.4	140.6	44.0	0.3	0.0				28.5	0.0	146.4
LnGrp LOS		A	F	D	A					C		F
Approach Vol, veh/h		1674			846						532	
Approach Delay, s/veh		81.9			8.8						135.8	
Approach LOS		F			A						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			18.0	51.8		30.2		69.8
Change Period (Y+Rc), s			5.1	* 5.1		4.6		5.1
Max Green Setting (Gmax), s			13.4	* 47		25.6		64.7
Max Q Clear Time (g_c+I1), s			10.4	48.7		27.6		2.0
Green Ext Time (p_c), s			1.5	0.0		0.0		6.2

Intersection Summary	
HCM 2010 Ctrl Delay	71.0
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2136	712	179	2269	0	0	0	0	116	0	492
Future Volume (veh/h)	0	2136	712	179	2269	0	0	0	0	116	0	492
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	2322	774	195	2466	0				126	0	0
Adj No. of Lanes	0	3	1	2	3	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2738	776	985	4236	0				206	0	92
Arrive On Green	0.00	0.49	0.49	0.57	1.00	0.00				0.06	0.00	0.00
Sat Flow, veh/h	0	5588	1583	3442	5253	0				3548	0	1583
Grp Volume(v), veh/h	0	2322	774	195	2466	0				126	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1695	0				1774	0	1583
Q Serve(g_s), s	0.0	32.6	43.9	2.5	0.0	0.0				3.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	32.6	43.9	2.5	0.0	0.0				3.1	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2738	776	985	4236	0				206	0	92
V/C Ratio(X)	0.00	0.85	1.00	0.20	0.58	0.00				0.61	0.00	0.00
Avail Cap(c_a), veh/h	0	2738	776	985	4236	0				997	0	445
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.26	0.26	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	20.0	22.9	14.3	0.0	0.0				41.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.5	31.7	0.0	0.2	0.0				2.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	17.4	25.8	1.1	0.1	0.0				1.6	0.0	0.0
LnGrp Delay(d),s/veh	0.0	23.5	54.6	14.3	0.2	0.0				44.3	0.0	0.0
LnGrp LOS		C	D	B	A					D		
Approach Vol, veh/h		3096			2661						126	
Approach Delay, s/veh		31.3			1.2						44.3	
Approach LOS		C			A						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			30.9	49.2		9.9		80.1
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			6.1	* 44		25.3		54.9
Max Q Clear Time (g_c+I1), s			4.5	45.9		5.1		2.0
Green Ext Time (p_c), s			1.3	0.0		0.4		39.3

Intersection Summary	
HCM 2010 Ctrl Delay	18.0
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	236	1786	0	0	1600	117	1038	0	574	0	0	0
Future Volume (veh/h)	236	1786	0	0	1600	117	1038	0	574	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	257	1941	0	0	1739	127	1128	0	0			
Adj No. of Lanes	1	3	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	274	2766	0	0	2071	151	1232	0	550			
Arrive On Green	0.31	1.00	0.00	0.00	0.34	0.34	0.35	0.00	0.00			
Sat Flow, veh/h	1774	5253	0	0	6402	448	3548	0	1583			
Grp Volume(v), veh/h	257	1941	0	0	1361	505	1128	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1695	0	0	1602	1784	1774	0	1583			
Q Serve(g_s), s	12.7	0.0	0.0	0.0	23.6	23.6	27.4	0.0	0.0			
Cycle Q Clear(g_c), s	12.7	0.0	0.0	0.0	23.6	23.6	27.4	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.25	1.00		1.00			
Lane Grp Cap(c), veh/h	274	2766	0	0	1621	601	1232	0	550			
V/C Ratio(X)	0.94	0.70	0.00	0.00	0.84	0.84	0.92	0.00	0.00			
Avail Cap(c_a), veh/h	274	2766	0	0	1621	601	1313	0	586			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	30.7	0.0	0.0	0.0	27.6	27.6	28.1	0.0	0.0			
Incr Delay (d2), s/veh	6.5	0.1	0.0	0.0	5.4	13.2	9.8	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.6	0.0	0.0	0.0	11.1	13.7	15.0	0.0	0.0			
LnGrp Delay(d),s/veh	37.2	0.1	0.0	0.0	33.0	40.8	37.9	0.0	0.0			
LnGrp LOS	D	A			C	D	D					
Approach Vol, veh/h		2198			1866			1128				
Approach Delay, s/veh		4.5			35.1			37.9				
Approach LOS		A			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		35.9		54.1			18.6	35.5
Change Period (Y+Rc), s		* 4.7		5.1			* 4.7	5.1
Max Green Setting (Gmax), s		* 33		46.9			* 14	28.3
Max Q Clear Time (g_c+I1), s		29.4		2.0			14.7	25.6
Green Ext Time (p_c), s		1.9		41.7			0.0	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	22.8
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1305	662	421	880	0	0	0	0	128	0	276
Future Volume (veh/h)	0	1305	662	421	880	0	0	0	0	128	0	276
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	1418	720	458	957	0				139	0	300
Adj No. of Lanes	0	3	1	1	2	0				0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2271	707	484	2709	0				239	0	375
Arrive On Green	0.00	0.89	0.89	0.36	1.00	0.00				0.13	0.00	0.13
Sat Flow, veh/h	0	5253	1583	1774	3632	0				1774	0	2787
Grp Volume(v), veh/h	0	1418	720	458	957	0				139	0	300
Grp Sat Flow(s),veh/h/ln	0	1695	1583	1774	1770	0				1774	0	1393
Q Serve(g_s), s	0.0	6.7	44.7	25.0	0.0	0.0				7.4	0.0	10.4
Cycle Q Clear(g_c), s	0.0	6.7	44.7	25.0	0.0	0.0				7.4	0.0	10.4
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2271	707	484	2709	0				239	0	375
V/C Ratio(X)	0.00	0.62	1.02	0.95	0.35	0.00				0.58	0.00	0.80
Avail Cap(c_a), veh/h	0	2271	707	504	2709	0				319	0	502
HCM Platoon Ratio	1.00	2.00	2.00	1.33	1.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.73	0.73	0.87	0.87	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	3.3	5.3	31.1	0.0	0.0				40.6	0.0	42.0
Incr Delay (d2), s/veh	0.0	1.0	33.7	24.2	0.3	0.0				2.2	0.0	6.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.8	22.7	15.5	0.1	0.0				3.7	0.0	4.3
LnGrp Delay(d),s/veh	0.0	4.3	39.0	55.3	0.3	0.0				42.9	0.0	48.6
LnGrp LOS		A	F	F	A					D		D
Approach Vol, veh/h		2138			1415						439	
Approach Delay, s/veh		16.0			18.1						46.8	
Approach LOS		B			B						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			31.9	50.1		18.0		82.0
Change Period (Y+Rc), s			4.6	5.4		4.6		5.4
Max Green Setting (Gmax), s			28.4	39.0		18.0		72.0
Max Q Clear Time (g_c+I1), s			27.0	46.7		12.4		2.0
Green Ext Time (p_c), s			0.3	0.0		1.0		47.8

Intersection Summary	
HCM 2010 Ctrl Delay	20.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	500	286	0	0	247	90	667	0	139	0	0	0
Future Volume (veh/h)	500	286	0	0	247	90	667	0	139	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	543	311	0	0	268	98	725	0	151			
Adj No. of Lanes	2	2	0	0	2	1	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	1360	2318	0	0	729	326	869	0	388			
Arrive On Green	0.13	0.22	0.00	0.00	0.07	0.07	0.24	0.00	0.24			
Sat Flow, veh/h	3442	3632	0	0	3632	1583	3548	0	1583			
Grp Volume(v), veh/h	543	311	0	0	268	98	725	0	151			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1583	1774	0	1583			
Q Serve(g_s), s	14.5	7.1	0.0	0.0	7.2	5.9	19.4	0.0	8.0			
Cycle Q Clear(g_c), s	14.5	7.1	0.0	0.0	7.2	5.9	19.4	0.0	8.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1360	2318	0	0	729	326	869	0	388			
V/C Ratio(X)	0.40	0.13	0.00	0.00	0.37	0.30	0.83	0.00	0.39			
Avail Cap(c_a), veh/h	1360	2318	0	0	729	326	1327	0	592			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.65	0.65	0.00	0.00	0.99	0.99	1.00	0.00	1.00			
Uniform Delay (d), s/veh	32.6	16.3	0.0	0.0	40.4	39.7	35.8	0.0	31.5			
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	1.4	2.3	2.9	0.0	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.9	3.5	0.0	0.0	3.7	2.8	9.8	0.0	3.6			
LnGrp Delay(d),s/veh	32.7	16.4	0.0	0.0	41.8	42.1	38.7	0.0	32.1			
LnGrp LOS	C	B			D	D	D		C			
Approach Vol, veh/h		854			366			876				
Approach Delay, s/veh		26.8			41.9			37.6				
Approach LOS		C			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		29.1		70.9			44.9	26.0
Change Period (Y+Rc), s		4.6		5.4			5.4	* 5.4
Max Green Setting (Gmax), s		37.4		52.6			27.4	* 21
Max Q Clear Time (g_c+I1), s		21.4		9.1			16.5	9.2
Green Ext Time (p_c), s		3.1		4.5			3.2	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	33.9
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	47	399	310	5	22	73
Future Volume (veh/h)	47	399	310	5	22	73
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	51	434	341	0	24	79
Adj No. of Lanes	1	2	2	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	119	1749	1989	1557	422	358
Arrive On Green	0.07	0.07	0.56	0.00	0.23	0.23
Sat Flow, veh/h	1774	2787	3548	1863	1863	1583
Grp Volume(v), veh/h	51	434	341	0	24	79
Grp Sat Flow(s),veh/h/ln	1774	1393	1774	1863	1863	1583
Q Serve(g_s), s	2.7	0.0	4.5	0.0	1.0	3.9
Cycle Q Clear(g_c), s	2.7	0.0	4.5	0.0	1.0	3.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	119	1749	1989	1557	422	358
V/C Ratio(X)	0.43	0.25	0.17	0.00	0.06	0.22
Avail Cap(c_a), veh/h	414	2212	1989	1557	472	401
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	43.0	7.9	10.3	0.0	29.1	30.2
Incr Delay (d2), s/veh	2.4	0.1	0.0	0.0	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	5.7	2.2	0.0	0.5	1.7
LnGrp Delay(d),s/veh	45.4	8.0	10.3	0.0	29.2	30.5
LnGrp LOS	D	A	B		C	C
Approach Vol, veh/h	485			341	103	
Approach Delay, s/veh	11.9			10.3	30.2	
Approach LOS	B			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		84.9		11.1	58.5	26.4		
Change Period (Y+Rc), s		* 4.7		4.6	* 4.7	* 4.7		
Max Green Setting (Gmax), s		* 64		22.4	* 35	* 24		
Max Q Clear Time (g_c+I1), s		0.0		4.7	6.5	5.9		
Green Ext Time (p_c), s		0.0		1.8	1.2	0.3		

Intersection Summary	
HCM 2010 Ctrl Delay	13.3
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	262	135	2	0	144	21	3	7	0	57	16	317
Future Volume (veh/h)	262	135	2	0	144	21	3	7	0	57	16	317
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	285	147	2	0	157	23	3	8	0	62	17	345
Adj No. of Lanes	2	1	0	1	1	0	0	1	0	0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	802	1392	19	2	751	110	7	18	0	111	30	869
Arrive On Green	0.08	0.25	0.25	0.00	0.47	0.47	0.01	0.01	0.00	0.08	0.08	0.08
Sat Flow, veh/h	3442	1833	25	1774	1589	233	501	1337	0	1407	386	2787
Grp Volume(v), veh/h	285	0	149	0	0	180	11	0	0	79	0	345
Grp Sat Flow(s),veh/h/ln	1721	0	1858	1774	0	1822	1838	0	0	1792	0	1393
Q Serve(g_s), s	7.5	0.0	5.9	0.0	0.0	5.5	0.6	0.0	0.0	4.1	0.0	0.0
Cycle Q Clear(g_c), s	7.5	0.0	5.9	0.0	0.0	5.5	0.6	0.0	0.0	4.1	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.13	0.27		0.00	0.78		1.00
Lane Grp Cap(c), veh/h	802	0	1410	2	0	861	24	0	0	141	0	869
V/C Ratio(X)	0.36	0.00	0.11	0.00	0.00	0.21	0.45	0.00	0.00	0.56	0.00	0.40
Avail Cap(c_a), veh/h	802	0	1410	92	0	861	345	0	0	344	0	1184
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.00	0.96	0.00	0.00	1.00	1.00	0.00	0.00	0.99	0.00	0.99
Uniform Delay (d), s/veh	37.5	0.0	10.9	0.0	0.0	14.8	47.0	0.0	0.0	42.6	0.0	25.9
Incr Delay (d2), s/veh	0.3	0.0	0.1	0.0	0.0	0.1	12.5	0.0	0.0	3.4	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	3.1	0.0	0.0	2.8	0.4	0.0	0.0	2.2	0.0	3.6
LnGrp Delay(d),s/veh	37.7	0.0	11.0	0.0	0.0	14.9	59.6	0.0	0.0	46.0	0.0	26.2
LnGrp LOS	D		B			B	F			D		C
Approach Vol, veh/h		434			180			11			424	
Approach Delay, s/veh		28.6			14.9			59.6			29.9	
Approach LOS		C			B			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		5.9	0.0	78.0		12.2	27.5	50.5
Change Period (Y+Rc), s		4.6	4.6	5.1		4.6	5.1	* 5.1
Max Green Setting (Gmax), s		18.0	5.0	35.7		18.4	21.8	* 19
Max Q Clear Time (g_c+I1), s		2.6	0.0	7.9		6.1	9.5	7.5
Green Ext Time (p_c), s		0.0	0.0	1.9		1.5	1.5	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	27.1
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	515	635	115	453	0	0	0	0	35	0	342
Future Volume (veh/h)	0	515	635	115	453	0	0	0	0	35	0	342
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	560	690	125	492	0				38	0	372
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1655	741	238	2319	0				432	0	386
Arrive On Green	0.00	0.31	0.31	0.27	1.00	0.00				0.24	0.00	0.24
Sat Flow, veh/h	0	3632	1583	1774	3632	0				1774	0	1583
Grp Volume(v), veh/h	0	560	690	125	492	0				38	0	372
Grp Sat Flow(s),veh/h/ln	0	1770	1583	1774	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	11.7	40.6	5.8	0.0	0.0				1.6	0.0	22.3
Cycle Q Clear(g_c), s	0.0	11.7	40.6	5.8	0.0	0.0				1.6	0.0	22.3
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1655	741	238	2319	0				432	0	386
V/C Ratio(X)	0.00	0.34	0.93	0.52	0.21	0.00				0.09	0.00	0.96
Avail Cap(c_a), veh/h	0	1655	741	248	2319	0				432	0	386
HCM Platoon Ratio	1.00	0.67	0.67	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.91	0.91	0.95	0.95	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	21.5	31.5	32.5	0.0	0.0				28.1	0.0	35.9
Incr Delay (d2), s/veh	0.0	0.5	18.7	1.8	0.2	0.0				0.1	0.0	36.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.8	21.6	2.9	0.1	0.0				0.8	0.0	13.6
LnGrp Delay(d),s/veh	0.0	22.1	50.2	34.2	0.2	0.0				28.1	0.0	72.2
LnGrp LOS		C	D	C	A					C		F
Approach Vol, veh/h		1250			617						410	
Approach Delay, s/veh		37.6			7.1						68.1	
Approach LOS		D			A						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			18.0	50.0		28.0		68.0
Change Period (Y+Rc), s			5.1	* 5.1		4.6		5.1
Max Green Setting (Gmax), s			13.4	* 45		23.4		62.9
Max Q Clear Time (g_c+I1), s			7.8	42.6		24.3		2.0
Green Ext Time (p_c), s			1.8	1.5		0.0		4.1

Intersection Summary	
HCM 2010 Ctrl Delay	34.8
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2848	950	239	3026	0	0	0	0	155	0	656
Future Volume (veh/h)	0	2848	950	239	3026	0	0	0	0	155	0	656
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	3097	1032	260	3289	0				168	0	0
Adj No. of Lanes	0	3	1	2	3	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2943	834	1057	4418	0				228	0	102
Arrive On Green	0.00	0.53	0.53	0.61	1.00	0.00				0.06	0.00	0.00
Sat Flow, veh/h	0	5588	1583	3442	5253	0				3548	0	1583
Grp Volume(v), veh/h	0	3097	1032	260	3289	0				168	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1695	0				1774	0	1583
Q Serve(g_s), s	0.0	76.9	76.9	5.0	0.0	0.0				6.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	76.9	76.9	5.0	0.0	0.0				6.8	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2943	834	1057	4418	0				228	0	102
V/C Ratio(X)	0.00	1.05	1.24	0.25	0.74	0.00				0.74	0.00	0.00
Avail Cap(c_a), veh/h	0	2943	834	1057	4418	0				1101	0	491
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	34.5	34.5	20.5	0.0	0.0				67.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	32.4	117.1	0.0	0.1	0.0				4.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	48.1	60.5	2.4	0.0	0.0				3.5	0.0	0.0
LnGrp Delay(d),s/veh	0.0	67.0	151.7	20.5	0.1	0.0				71.8	0.0	0.0
LnGrp LOS		F	F	C	A					F		
Approach Vol, veh/h		4129			3549						168	
Approach Delay, s/veh		88.1			1.6						71.8	
Approach LOS		F			A						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			49.9	82.0		14.1		131.9
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			9.3	* 77		45.3		90.9
Max Q Clear Time (g_c+I1), s			7.0	78.9		8.8		2.0
Green Ext Time (p_c), s			1.9	0.0		0.6		80.9

Intersection Summary	
HCM 2010 Ctrl Delay	48.6
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	315	2382	0	0	2133	156	1384	0	766	0	0	0
Future Volume (veh/h)	315	2382	0	0	2133	156	1384	0	766	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	342	2589	0	0	2318	170	1504	0	0			
Adj No. of Lanes	1	3	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	271	2678	0	0	2099	154	1441	0	643			
Arrive On Green	0.31	1.00	0.00	0.00	0.34	0.34	0.41	0.00	0.00			
Sat Flow, veh/h	1774	5253	0	0	6401	449	3548	0	1583			
Grp Volume(v), veh/h	342	2589	0	0	1813	675	1504	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1695	0	0	1602	1783	1774	0	1583			
Q Serve(g_s), s	22.3	0.0	0.0	0.0	49.9	49.9	59.3	0.0	0.0			
Cycle Q Clear(g_c), s	22.3	0.0	0.0	0.0	49.9	49.9	59.3	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.25	1.00		1.00			
Lane Grp Cap(c), veh/h	271	2678	0	0	1643	610	1441	0	643			
V/C Ratio(X)	1.26	0.97	0.00	0.00	1.10	1.11	1.04	0.00	0.00			
Avail Cap(c_a), veh/h	271	2678	0	0	1643	610	1441	0	643			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	50.7	0.0	0.0	0.0	48.0	48.1	43.3	0.0	0.0			
Incr Delay (d2), s/veh	120.8	1.6	0.0	0.0	56.3	69.5	36.0	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	19.9	0.4	0.0	0.0	30.6	36.3	36.2	0.0	0.0			
LnGrp Delay(d),s/veh	171.5	1.6	0.0	0.0	104.4	117.6	79.3	0.0	0.0			
LnGrp LOS	F	A			F	F	F					
Approach Vol, veh/h		2931			2488			1504				
Approach Delay, s/veh		21.4			108.0			79.3				
Approach LOS		C			F			E				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		64.0		82.0			27.0	55.0
Change Period (Y+Rc), s		* 4.7		5.1			* 4.7	5.1
Max Green Setting (Gmax), s		* 59		76.9			* 22	49.9
Max Q Clear Time (g_c+I1), s		61.3		2.0			24.3	51.9
Green Ext Time (p_c), s		0.0		73.7			0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	65.1
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1740	884	561	1173	0	0	0	0	171	0	368
Future Volume (veh/h)	0	1740	884	561	1173	0	0	0	0	171	0	368
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	1891	961	610	1275	0				186	0	400
Adj No. of Lanes	0	3	1	1	2	0				0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2204	686	523	2713	0				266	0	418
Arrive On Green	0.00	0.87	0.87	0.29	0.77	0.00				0.15	0.00	0.15
Sat Flow, veh/h	0	5253	1583	1774	3632	0				1774	0	2787
Grp Volume(v), veh/h	0	1891	961	610	1275	0				186	0	400
Grp Sat Flow(s),veh/h/ln	0	1695	1583	1774	1770	0				1774	0	1393
Q Serve(g_s), s	0.0	23.2	52.0	35.4	15.8	0.0				11.9	0.0	17.1
Cycle Q Clear(g_c), s	0.0	23.2	52.0	35.4	15.8	0.0				11.9	0.0	17.1
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2204	686	523	2713	0				266	0	418
V/C Ratio(X)	0.00	0.86	1.40	1.17	0.47	0.00				0.70	0.00	0.96
Avail Cap(c_a), veh/h	0	2204	686	523	2713	0				266	0	418
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.50	0.50	0.73	0.73	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.1	8.0	42.3	5.1	0.0				48.4	0.0	50.6
Incr Delay (d2), s/veh	0.0	2.4	184.7	89.2	0.4	0.0				7.8	0.0	33.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.3	55.4	30.3	7.8	0.0				6.4	0.0	8.5
LnGrp Delay(d),s/veh	0.0	8.5	192.7	131.5	5.5	0.0				56.3	0.0	83.6
LnGrp LOS		A	F	F	A					F		F
Approach Vol, veh/h		2852			1885						586	
Approach Delay, s/veh		70.6			46.3						74.9	
Approach LOS		E			D						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			40.0	57.4		22.6		97.4
Change Period (Y+Rc), s			4.6	5.4		4.6		5.4
Max Green Setting (Gmax), s			35.4	52.0		18.0		92.0
Max Q Clear Time (g_c+I1), s			37.4	54.0		19.1		17.8
Green Ext Time (p_c), s			0.0	0.0		0.0		66.9

Intersection Summary	
HCM 2010 Ctrl Delay	62.5
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	666	382	0	0	329	120	890	0	185	0	0	0
Future Volume (veh/h)	666	382	0	0	329	120	890	0	185	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	724	415	0	0	358	130	967	0	201			
Adj No. of Lanes	2	2	0	0	2	1	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	1334	2138	0	0	608	272	1109	0	495			
Arrive On Green	0.13	0.20	0.00	0.00	0.06	0.06	0.31	0.00	0.31			
Sat Flow, veh/h	3442	3632	0	0	3632	1583	3548	0	1583			
Grp Volume(v), veh/h	724	415	0	0	358	130	967	0	201			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1583	1774	0	1583			
Q Serve(g_s), s	23.7	11.7	0.0	0.0	11.8	9.6	30.9	0.0	12.0			
Cycle Q Clear(g_c), s	23.7	11.7	0.0	0.0	11.8	9.6	30.9	0.0	12.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1334	2138	0	0	608	272	1109	0	495			
V/C Ratio(X)	0.54	0.19	0.00	0.00	0.59	0.48	0.87	0.00	0.41			
Avail Cap(c_a), veh/h	1334	2138	0	0	608	272	1520	0	678			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.40	0.40	0.00	0.00	0.99	0.99	1.00	0.00	1.00			
Uniform Delay (d), s/veh	42.4	23.7	0.0	0.0	52.5	51.4	39.0	0.0	32.5			
Incr Delay (d2), s/veh	0.2	0.1	0.0	0.0	4.1	5.8	4.4	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	11.3	5.8	0.0	0.0	6.2	4.6	15.9	0.0	5.3			
LnGrp Delay(d),s/veh	42.5	23.8	0.0	0.0	56.6	57.2	43.4	0.0	33.0			
LnGrp LOS	D	C			E	F	D		C			
Approach Vol, veh/h		1139			488			1168				
Approach Delay, s/veh		35.7			56.8			41.6				
Approach LOS		D			E			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		42.1		77.9			51.9	26.0
Change Period (Y+Rc), s		4.6		5.4			5.4	* 5.4
Max Green Setting (Gmax), s		51.4		58.6			33.4	* 21
Max Q Clear Time (g_c+I1), s		32.9		13.7			25.7	13.8
Green Ext Time (p_c), s		4.6		6.6			3.5	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	41.9
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	92	439	510	18	23	60
Future Volume (veh/h)	92	439	510	18	23	60
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	100	477	568	0	25	65
Adj No. of Lanes	1	2	2	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	168	1863	2036	1513	356	303
Arrive On Green	0.09	0.09	0.57	0.00	0.19	0.19
Sat Flow, veh/h	1774	2787	3548	1863	1863	1583
Grp Volume(v), veh/h	100	477	568	0	25	65
Grp Sat Flow(s),veh/h/ln	1774	1393	1774	1863	1863	1583
Q Serve(g_s), s	5.4	0.0	8.1	0.0	1.1	3.5
Cycle Q Clear(g_c), s	5.4	0.0	8.1	0.0	1.1	3.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	168	1863	2036	1513	356	303
V/C Ratio(X)	0.59	0.26	0.28	0.00	0.07	0.21
Avail Cap(c_a), veh/h	415	2251	2036	1513	397	337
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.96	0.00	1.00	1.00
Uniform Delay (d), s/veh	43.4	6.6	10.8	0.0	33.1	34.1
Incr Delay (d2), s/veh	3.3	0.1	0.1	0.0	0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	6.6	4.0	0.0	0.6	1.5
LnGrp Delay(d),s/veh	46.7	6.7	10.9	0.0	33.2	34.4
LnGrp LOS	D	A	B		C	C
Approach Vol, veh/h	577			568	90	
Approach Delay, s/veh	13.6			10.9	34.1	
Approach LOS	B			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		85.9		14.1	62.1	23.8		
Change Period (Y+Rc), s		* 4.7		4.6	* 4.7	* 4.7		
Max Green Setting (Gmax), s		* 67		23.4	* 41	* 21		
Max Q Clear Time (g_c+I1), s		0.0		7.4	10.1	5.5		
Green Ext Time (p_c), s		0.0		2.1	2.2	0.2		

Intersection Summary	
HCM 2010 Ctrl Delay	13.9
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	479	182	2	1	226	48	5	19	0	75	16	388
Future Volume (veh/h)	479	182	2	1	226	48	5	19	0	75	16	388
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	521	198	2	1	246	52	5	21	0	82	17	422
Adj No. of Lanes	2	1	0	1	1	0	0	1	0	0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	874	1276	13	2	650	137	9	38	0	135	28	961
Arrive On Green	0.42	1.00	1.00	0.00	0.44	0.44	0.03	0.03	0.00	0.09	0.09	0.09
Sat Flow, veh/h	3442	1841	19	1774	1492	315	355	1490	0	1482	307	2787
Grp Volume(v), veh/h	521	0	200	1	0	298	26	0	0	99	0	422
Grp Sat Flow(s),veh/h/ln	1721	0	1859	1774	0	1807	1845	0	0	1789	0	1393
Q Serve(g_s), s	11.7	0.0	0.0	0.1	0.0	11.1	1.4	0.0	0.0	5.3	0.0	0.0
Cycle Q Clear(g_c), s	11.7	0.0	0.0	0.1	0.0	11.1	1.4	0.0	0.0	5.3	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.17	0.19		0.00	0.83		1.00
Lane Grp Cap(c), veh/h	874	0	1289	2	0	787	47	0	0	163	0	961
V/C Ratio(X)	0.60	0.00	0.16	0.41	0.00	0.38	0.55	0.00	0.00	0.61	0.00	0.44
Avail Cap(c_a), veh/h	874	0	1289	89	0	787	332	0	0	322	0	1209
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.00	0.91	1.00	0.00	1.00	1.00	0.00	0.00	0.99	0.00	0.99
Uniform Delay (d), s/veh	24.8	0.0	0.0	49.9	0.0	19.1	48.1	0.0	0.0	43.7	0.0	25.3
Incr Delay (d2), s/veh	1.0	0.0	0.2	84.8	0.0	0.3	9.5	0.0	0.0	3.6	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	0.1	0.1	0.0	5.6	0.8	0.0	0.0	2.8	0.0	4.5
LnGrp Delay(d),s/veh	25.9	0.0	0.2	134.7	0.0	19.4	57.6	0.0	0.0	47.3	0.0	25.6
LnGrp LOS	C		A	F		B	F			D		C
Approach Vol, veh/h		721			299			26			521	
Approach Delay, s/veh		18.7			19.8			57.6			29.7	
Approach LOS		B			B			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		7.2	4.7	74.4		13.7	30.5	48.6
Change Period (Y+Rc), s		4.6	4.6	5.1		4.6	5.1	* 5.1
Max Green Setting (Gmax), s		18.0	5.0	40.1		18.0	22.2	* 23
Max Q Clear Time (g_c+I1), s		3.4	2.1	2.0		7.3	13.7	13.1
Green Ext Time (p_c), s		0.0	0.0	3.3		1.8	2.2	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	23.2
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	687	846	153	604	0	0	0	0	46	0	456
Future Volume (veh/h)	0	687	846	153	604	0	0	0	0	46	0	456
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	747	920	166	657	0				50	0	496
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1653	739	229	2290	0				454	0	405
Arrive On Green	0.00	0.78	0.78	0.26	1.00	0.00				0.26	0.00	0.26
Sat Flow, veh/h	0	3632	1583	1774	3632	0				1774	0	1583
Grp Volume(v), veh/h	0	747	920	166	657	0				50	0	496
Grp Sat Flow(s),veh/h/ln	0	1770	1583	1774	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	7.2	46.7	8.5	0.0	0.0				2.2	0.0	25.6
Cycle Q Clear(g_c), s	0.0	7.2	46.7	8.5	0.0	0.0				2.2	0.0	25.6
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1653	739	229	2290	0				454	0	405
V/C Ratio(X)	0.00	0.45	1.24	0.73	0.29	0.00				0.11	0.00	1.22
Avail Cap(c_a), veh/h	0	1653	739	238	2290	0				454	0	405
HCM Platoon Ratio	1.00	1.67	1.67	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.87	0.87	0.89	0.89	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.7	11.0	35.5	0.0	0.0				28.5	0.0	37.2
Incr Delay (d2), s/veh	0.0	0.8	119.8	9.1	0.3	0.0				0.1	0.0	120.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.5	43.8	4.7	0.1	0.0				1.1	0.0	24.8
LnGrp Delay(d),s/veh	0.0	7.4	130.8	44.6	0.3	0.0				28.6	0.0	158.1
LnGrp LOS		A	F	D	A					C		F
Approach Vol, veh/h		1667			823						546	
Approach Delay, s/veh		75.5			9.2						146.2	
Approach LOS		E			A						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			18.0	51.8		30.2		69.8
Change Period (Y+Rc), s			5.1	* 5.1		4.6		5.1
Max Green Setting (Gmax), s			13.4	* 47		25.6		64.7
Max Q Clear Time (g_c+I1), s			10.5	48.7		27.6		2.0
Green Ext Time (p_c), s			1.4	0.0		0.0		5.9

Intersection Summary	
HCM 2010 Ctrl Delay	70.3
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2126	714	183	2266	0	0	0	0	121	0	491
Future Volume (veh/h)	0	2126	714	183	2266	0	0	0	0	121	0	491
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	2317	772	199	2463	0				132	0	0
Adj No. of Lanes	0	3	1	2	3	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2738	776	978	4225	0				214	0	96
Arrive On Green	0.00	0.49	0.49	0.57	1.00	0.00				0.06	0.00	0.00
Sat Flow, veh/h	0	5588	1583	3442	5253	0				3548	0	1583
Grp Volume(v), veh/h	0	2317	772	199	2463	0				132	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1695	0				1774	0	1583
Q Serve(g_s), s	0.0	32.5	43.7	2.5	0.0	0.0				3.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	32.5	43.7	2.5	0.0	0.0				3.3	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2738	776	978	4225	0				214	0	96
V/C Ratio(X)	0.00	0.85	1.00	0.20	0.58	0.00				0.62	0.00	0.00
Avail Cap(c_a), veh/h	0	2738	776	978	4225	0				997	0	445
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.26	0.26	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	20.0	22.8	14.5	0.0	0.0				41.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.4	31.1	0.0	0.2	0.0				2.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	17.4	25.6	1.2	0.1	0.0				1.7	0.0	0.0
LnGrp Delay(d),s/veh	0.0	23.4	54.0	14.5	0.2	0.0				44.1	0.0	0.0
LnGrp LOS		C	D	B	A					D		
Approach Vol, veh/h		3089			2662						132	
Approach Delay, s/veh		31.1			1.2						44.1	
Approach LOS		C			A						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			30.7	49.2		10.1		79.9
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			6.1	* 44		25.3		54.9
Max Q Clear Time (g_c+I1), s			4.5	45.7		5.3		2.0
Green Ext Time (p_c), s			1.2	0.0		0.4		39.3

Intersection Summary	
HCM 2010 Ctrl Delay	17.9
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	229	1781	0	0	1593	122	1043	0	563	0	0	0
Future Volume (veh/h)	229	1781	0	0	1593	122	1043	0	563	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	249	1936	0	0	1732	133	1134	0	0			
Adj No. of Lanes	1	3	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	274	2760	0	0	2055	158	1236	0	552			
Arrive On Green	0.31	1.00	0.00	0.00	0.34	0.34	0.35	0.00	0.00			
Sat Flow, veh/h	1774	5253	0	0	6377	470	3548	0	1583			
Grp Volume(v), veh/h	249	1936	0	0	1361	504	1134	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1695	0	0	1602	1780	1774	0	1583			
Q Serve(g_s), s	12.1	0.0	0.0	0.0	23.6	23.6	27.5	0.0	0.0			
Cycle Q Clear(g_c), s	12.1	0.0	0.0	0.0	23.6	23.6	27.5	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.26	1.00		1.00			
Lane Grp Cap(c), veh/h	274	2760	0	0	1615	598	1236	0	552			
V/C Ratio(X)	0.91	0.70	0.00	0.00	0.84	0.84	0.92	0.00	0.00			
Avail Cap(c_a), veh/h	274	2760	0	0	1615	598	1313	0	586			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	30.5	0.0	0.0	0.0	27.7	27.7	28.1	0.0	0.0			
Incr Delay (d2), s/veh	4.5	0.1	0.0	0.0	5.5	13.5	10.0	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.2	0.0	0.0	0.0	11.3	13.9	15.1	0.0	0.0			
LnGrp Delay(d),s/veh	35.0	0.1	0.0	0.0	33.2	41.2	38.1	0.0	0.0			
LnGrp LOS	D	A			C	D	D					
Approach Vol, veh/h		2185			1865			1134				
Approach Delay, s/veh		4.1			35.4			38.1				
Approach LOS		A			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		36.1		53.9			18.6	35.3
Change Period (Y+Rc), s		* 4.7		5.1			* 4.7	5.1
Max Green Setting (Gmax), s		* 33		46.9			* 14	28.3
Max Q Clear Time (g_c+I1), s		29.5		2.0			14.1	25.6
Green Ext Time (p_c), s		1.8		41.6			0.0	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	22.8
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1289	691	408	876	0	0	0	0	119	0	271
Future Volume (veh/h)	0	1289	691	408	876	0	0	0	0	119	0	271
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	1401	751	443	952	0				129	0	295
Adj No. of Lanes	0	3	1	1	2	0				0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2318	722	471	2716	0				235	0	369
Arrive On Green	0.00	0.91	0.91	0.35	1.00	0.00				0.13	0.00	0.13
Sat Flow, veh/h	0	5253	1583	1774	3632	0				1774	0	2787
Grp Volume(v), veh/h	0	1401	751	443	952	0				129	0	295
Grp Sat Flow(s),veh/h/ln	0	1695	1583	1774	1770	0				1774	0	1393
Q Serve(g_s), s	0.0	5.4	45.6	24.2	0.0	0.0				6.8	0.0	10.3
Cycle Q Clear(g_c), s	0.0	5.4	45.6	24.2	0.0	0.0				6.8	0.0	10.3
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2318	722	471	2716	0				235	0	369
V/C Ratio(X)	0.00	0.60	1.04	0.94	0.35	0.00				0.55	0.00	0.80
Avail Cap(c_a), veh/h	0	2318	722	504	2716	0				319	0	502
HCM Platoon Ratio	1.00	2.00	2.00	1.33	1.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.73	0.73	0.87	0.87	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	2.6	4.4	31.6	0.0	0.0				40.6	0.0	42.1
Incr Delay (d2), s/veh	0.0	0.9	39.6	22.9	0.3	0.0				2.0	0.0	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.2	23.6	14.8	0.1	0.0				3.5	0.0	4.3
LnGrp Delay(d),s/veh	0.0	3.5	44.1	54.5	0.3	0.0				42.6	0.0	48.5
LnGrp LOS		A	F	D	A					D		D
Approach Vol, veh/h		2152			1395						424	
Approach Delay, s/veh		17.7			17.5						46.7	
Approach LOS		B			B						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			31.2	51.0		17.9		82.1
Change Period (Y+Rc), s			4.6	5.4		4.6		5.4
Max Green Setting (Gmax), s			28.4	39.0		18.0		72.0
Max Q Clear Time (g_c+I1), s			26.2	47.6		12.3		2.0
Green Ext Time (p_c), s			0.4	0.0		1.0		47.8

Intersection Summary	
HCM 2010 Ctrl Delay	20.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	475	307	0	0	257	80	652	0	130	0	0	0
Future Volume (veh/h)	475	307	0	0	257	80	652	0	130	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	516	334	0	0	279	87	709	0	141			
Adj No. of Lanes	2	2	0	0	2	1	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	1376	2336	0	0	729	326	852	0	380			
Arrive On Green	0.13	0.22	0.00	0.00	0.07	0.07	0.24	0.00	0.24			
Sat Flow, veh/h	3442	3632	0	0	3632	1583	3548	0	1583			
Grp Volume(v), veh/h	516	334	0	0	279	87	709	0	141			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1583	1774	0	1583			
Q Serve(g_s), s	13.7	7.6	0.0	0.0	7.5	5.2	19.0	0.0	7.4			
Cycle Q Clear(g_c), s	13.7	7.6	0.0	0.0	7.5	5.2	19.0	0.0	7.4			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1376	2336	0	0	729	326	852	0	380			
V/C Ratio(X)	0.37	0.14	0.00	0.00	0.38	0.27	0.83	0.00	0.37			
Avail Cap(c_a), veh/h	1376	2336	0	0	729	326	1327	0	592			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.67	0.67	0.00	0.00	0.99	0.99	1.00	0.00	1.00			
Uniform Delay (d), s/veh	32.0	16.3	0.0	0.0	40.5	39.4	36.1	0.0	31.7			
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	1.5	2.0	2.7	0.0	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.6	3.8	0.0	0.0	3.8	2.5	9.6	0.0	3.3			
LnGrp Delay(d),s/veh	32.1	16.4	0.0	0.0	42.0	41.4	38.8	0.0	32.3			
LnGrp LOS	C	B			D	D	D		C			
Approach Vol, veh/h		850			366			850				
Approach Delay, s/veh		25.9			41.9			37.7				
Approach LOS		C			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		28.6		71.4			45.4	26.0
Change Period (Y+Rc), s		4.6		5.4			5.4	* 5.4
Max Green Setting (Gmax), s		37.4		52.6			27.4	* 21
Max Q Clear Time (g_c+I1), s		21.0		9.6			15.7	9.5
Green Ext Time (p_c), s		3.0		4.6			3.3	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	33.6
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	48	419	312	5	23	73
Future Volume (veh/h)	48	419	312	5	23	73
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	52	455	343	0	25	79
Adj No. of Lanes	1	2	2	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	122	1753	1988	1554	419	356
Arrive On Green	0.07	0.07	0.56	0.00	0.23	0.23
Sat Flow, veh/h	1774	2787	3548	1863	1863	1583
Grp Volume(v), veh/h	52	455	343	0	25	79
Grp Sat Flow(s),veh/h/ln	1774	1393	1774	1863	1863	1583
Q Serve(g_s), s	2.7	0.0	4.5	0.0	1.0	3.9
Cycle Q Clear(g_c), s	2.7	0.0	4.5	0.0	1.0	3.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	122	1753	1988	1554	419	356
V/C Ratio(X)	0.43	0.26	0.17	0.00	0.06	0.22
Avail Cap(c_a), veh/h	414	2212	1988	1554	472	401
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	7.9	10.3	0.0	29.2	30.3
Incr Delay (d2), s/veh	2.4	0.1	0.0	0.0	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	6.0	2.2	0.0	0.5	1.7
LnGrp Delay(d),s/veh	45.2	8.0	10.3	0.0	29.3	30.6
LnGrp LOS	D	A	B		C	C
Approach Vol, veh/h	507			343	104	
Approach Delay, s/veh	11.8			10.3	30.3	
Approach LOS	B			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		84.8		11.2	58.5	26.3		
Change Period (Y+Rc), s		* 4.7		4.6	* 4.7	* 4.7		
Max Green Setting (Gmax), s		* 64		22.4	* 35	* 24		
Max Q Clear Time (g_c+I1), s		0.0		4.7	6.5	5.9		
Green Ext Time (p_c), s		0.0		1.9	1.2	0.3		

Intersection Summary	
HCM 2010 Ctrl Delay	13.3
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	264	135	2	0	144	21	3	7	0	57	16	337
Future Volume (veh/h)	264	135	2	0	144	21	3	7	0	57	16	337
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	287	147	2	0	157	23	3	8	0	62	17	366
Adj No. of Lanes	2	1	0	1	1	0	0	1	0	0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	802	1390	19	2	750	110	7	18	0	112	31	871
Arrive On Green	0.08	0.25	0.25	0.00	0.47	0.47	0.01	0.01	0.00	0.08	0.08	0.08
Sat Flow, veh/h	3442	1833	25	1774	1589	233	501	1337	0	1407	386	2787
Grp Volume(v), veh/h	287	0	149	0	0	180	11	0	0	79	0	366
Grp Sat Flow(s),veh/h/ln	1721	0	1858	1774	0	1822	1838	0	0	1792	0	1393
Q Serve(g_s), s	7.6	0.0	5.9	0.0	0.0	5.6	0.6	0.0	0.0	4.1	0.0	0.0
Cycle Q Clear(g_c), s	7.6	0.0	5.9	0.0	0.0	5.6	0.6	0.0	0.0	4.1	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.13	0.27		0.00	0.78		1.00
Lane Grp Cap(c), veh/h	802	0	1409	2	0	860	24	0	0	143	0	871
V/C Ratio(X)	0.36	0.00	0.11	0.00	0.00	0.21	0.45	0.00	0.00	0.55	0.00	0.42
Avail Cap(c_a), veh/h	802	0	1409	92	0	860	345	0	0	344	0	1183
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.00	0.96	0.00	0.00	1.00	1.00	0.00	0.00	0.99	0.00	0.99
Uniform Delay (d), s/veh	37.5	0.0	10.9	0.0	0.0	14.8	47.0	0.0	0.0	42.5	0.0	26.1
Incr Delay (d2), s/veh	0.3	0.0	0.1	0.0	0.0	0.1	12.5	0.0	0.0	3.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	3.1	0.0	0.0	2.8	0.4	0.0	0.0	2.1	0.0	3.9
LnGrp Delay(d),s/veh	37.8	0.0	11.1	0.0	0.0	15.0	59.6	0.0	0.0	45.8	0.0	26.4
LnGrp LOS	D		B			B	F			D		C
Approach Vol, veh/h		436			180			11			445	
Approach Delay, s/veh		28.6			15.0			59.6			29.9	
Approach LOS		C			B			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		5.9	0.0	77.9		12.2	27.5	50.4
Change Period (Y+Rc), s		4.6	4.6	5.1		4.6	5.1	* 5.1
Max Green Setting (Gmax), s		18.0	5.0	35.7		18.4	21.8	* 19
Max Q Clear Time (g_c+I1), s		2.6	0.0	7.9		6.1	9.6	7.6
Green Ext Time (p_c), s		0.0	0.0	1.9		1.6	1.5	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	27.2
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	518	663	115	472	0	0	0	0	35	0	344
Future Volume (veh/h)	0	518	663	115	472	0	0	0	0	35	0	344
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	563	721	125	513	0				38	0	374
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1655	741	238	2319	0				432	0	386
Arrive On Green	0.00	0.31	0.31	0.27	1.00	0.00				0.24	0.00	0.24
Sat Flow, veh/h	0	3632	1583	1774	3632	0				1774	0	1583
Grp Volume(v), veh/h	0	563	721	125	513	0				38	0	374
Grp Sat Flow(s),veh/h/ln	0	1770	1583	1774	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	11.7	43.2	5.8	0.0	0.0				1.6	0.0	22.5
Cycle Q Clear(g_c), s	0.0	11.7	43.2	5.8	0.0	0.0				1.6	0.0	22.5
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1655	741	238	2319	0				432	0	386
V/C Ratio(X)	0.00	0.34	0.97	0.52	0.22	0.00				0.09	0.00	0.97
Avail Cap(c_a), veh/h	0	1655	741	248	2319	0				432	0	386
HCM Platoon Ratio	1.00	0.67	0.67	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.91	0.91	0.95	0.95	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	21.6	32.4	32.5	0.0	0.0				28.1	0.0	35.9
Incr Delay (d2), s/veh	0.0	0.5	25.7	1.8	0.2	0.0				0.1	0.0	37.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.8	24.1	2.9	0.1	0.0				0.8	0.0	13.8
LnGrp Delay(d),s/veh	0.0	22.1	58.1	34.2	0.2	0.0				28.1	0.0	73.5
LnGrp LOS		C	F	C	A					C		F
Approach Vol, veh/h		1284			638						412	
Approach Delay, s/veh		42.3			6.9						69.3	
Approach LOS		D			A						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			18.0	50.0		28.0		68.0
Change Period (Y+Rc), s			5.1	* 5.1		4.6		5.1
Max Green Setting (Gmax), s			13.4	* 45		23.4		62.9
Max Q Clear Time (g_c+I1), s			7.8	45.2		24.5		2.0
Green Ext Time (p_c), s			1.9	0.0		0.0		4.3

Intersection Summary	
HCM 2010 Ctrl Delay	37.4
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2837	953	239	3011	0	0	0	0	164	0	655
Future Volume (veh/h)	0	2837	953	239	3011	0	0	0	0	164	0	655
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	3093	1030	260	3273	0				178	0	0
Adj No. of Lanes	0	3	1	2	3	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2943	834	1047	4402	0				238	0	106
Arrive On Green	0.00	0.53	0.53	0.61	1.00	0.00				0.07	0.00	0.00
Sat Flow, veh/h	0	5588	1583	3442	5253	0				3548	0	1583
Grp Volume(v), veh/h	0	3093	1030	260	3273	0				178	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1695	0				1774	0	1583
Q Serve(g_s), s	0.0	76.9	76.9	5.1	0.0	0.0				7.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	76.9	76.9	5.1	0.0	0.0				7.2	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2943	834	1047	4402	0				238	0	106
V/C Ratio(X)	0.00	1.05	1.24	0.25	0.74	0.00				0.75	0.00	0.00
Avail Cap(c_a), veh/h	0	2943	834	1047	4402	0				1101	0	491
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	34.5	34.5	20.9	0.0	0.0				66.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	31.9	116.1	0.0	0.1	0.0				4.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	47.9	60.3	2.4	0.0	0.0				3.7	0.0	0.0
LnGrp Delay(d),s/veh	0.0	66.5	150.7	20.9	0.1	0.0				71.5	0.0	0.0
LnGrp LOS		F	F	C	A					F		
Approach Vol, veh/h		4123			3533						178	
Approach Delay, s/veh		87.5			1.6						71.5	
Approach LOS		F			A						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			49.5	82.0		14.5		131.5
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			9.3	* 77		45.3		90.9
Max Q Clear Time (g_c+I1), s			7.1	78.9		9.2		2.0
Green Ext Time (p_c), s			1.8	0.0		0.6		80.6

Intersection Summary	
HCM 2010 Ctrl Delay	48.4
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	305	2378	0	0	2108	153	1391	0	750	0	0	0
Future Volume (veh/h)	305	2378	0	0	2108	153	1391	0	750	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	332	2585	0	0	2291	166	1512	0	0			
Adj No. of Lanes	1	3	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	271	2678	0	0	2101	152	1441	0	643			
Arrive On Green	0.31	1.00	0.00	0.00	0.34	0.34	0.41	0.00	0.00			
Sat Flow, veh/h	1774	5253	0	0	6407	444	3548	0	1583			
Grp Volume(v), veh/h	332	2585	0	0	1790	667	1512	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1695	0	0	1602	1784	1774	0	1583			
Q Serve(g_s), s	22.3	0.0	0.0	0.0	49.9	49.9	59.3	0.0	0.0			
Cycle Q Clear(g_c), s	22.3	0.0	0.0	0.0	49.9	49.9	59.3	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.25	1.00		1.00			
Lane Grp Cap(c), veh/h	271	2678	0	0	1643	610	1441	0	643			
V/C Ratio(X)	1.23	0.97	0.00	0.00	1.09	1.09	1.05	0.00	0.00			
Avail Cap(c_a), veh/h	271	2678	0	0	1643	610	1441	0	643			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	50.7	0.0	0.0	0.0	48.0	48.1	43.3	0.0	0.0			
Incr Delay (d2), s/veh	104.5	1.5	0.0	0.0	51.0	64.4	37.8	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	18.7	0.4	0.0	0.0	29.8	35.5	36.6	0.0	0.0			
LnGrp Delay(d),s/veh	155.2	1.5	0.0	0.0	99.1	112.5	81.1	0.0	0.0			
LnGrp LOS	F	A			F	F	F					
Approach Vol, veh/h		2917			2457			1512				
Approach Delay, s/veh		19.0			102.7			81.1				
Approach LOS		B			F			F				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		64.0		82.0			27.0	55.0
Change Period (Y+Rc), s		* 4.7		5.1			* 4.7	5.1
Max Green Setting (Gmax), s		* 59		76.9			* 22	49.9
Max Q Clear Time (g_c+I1), s		61.3		2.0			24.3	51.9
Green Ext Time (p_c), s		0.0		73.6			0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	62.5
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1680	889	544	1182	0	0	0	0	159	0	365
Future Volume (veh/h)	0	1680	889	544	1182	0	0	0	0	159	0	365
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	1826	966	591	1285	0				173	0	397
Adj No. of Lanes	0	3	1	1	2	0				0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2204	686	523	2713	0				266	0	418
Arrive On Green	0.00	0.87	0.87	0.29	0.77	0.00				0.15	0.00	0.15
Sat Flow, veh/h	0	5253	1583	1774	3632	0				1774	0	2787
Grp Volume(v), veh/h	0	1826	966	591	1285	0				173	0	397
Grp Sat Flow(s),veh/h/ln	0	1695	1583	1774	1770	0				1774	0	1393
Q Serve(g_s), s	0.0	20.4	52.0	35.4	16.0	0.0				11.0	0.0	16.9
Cycle Q Clear(g_c), s	0.0	20.4	52.0	35.4	16.0	0.0				11.0	0.0	16.9
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2204	686	523	2713	0				266	0	418
V/C Ratio(X)	0.00	0.83	1.41	1.13	0.47	0.00				0.65	0.00	0.95
Avail Cap(c_a), veh/h	0	2204	686	523	2713	0				266	0	418
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.53	0.53	0.72	0.72	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	5.9	8.0	42.3	5.1	0.0				48.0	0.0	50.6
Incr Delay (d2), s/veh	0.0	2.0	188.2	75.0	0.4	0.0				5.5	0.0	31.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.9	56.1	28.2	7.8	0.0				5.8	0.0	8.3
LnGrp Delay(d),s/veh	0.0	7.9	196.2	117.3	5.6	0.0				53.5	0.0	81.9
LnGrp LOS		A	F	F	A					D		F
Approach Vol, veh/h		2792			1876						570	
Approach Delay, s/veh		73.1			40.8						73.3	
Approach LOS		E			D						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			40.0	57.4		22.6		97.4
Change Period (Y+Rc), s			4.6	5.4		4.6		5.4
Max Green Setting (Gmax), s			35.4	52.0		18.0		92.0
Max Q Clear Time (g_c+I1), s			37.4	54.0		18.9		18.0
Green Ext Time (p_c), s			0.0	0.0		0.0		66.2

Intersection Summary	
HCM 2010 Ctrl Delay	61.5
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	612	391	0	0	339	106	886	0	174	0	0	0
Future Volume (veh/h)	612	391	0	0	339	106	886	0	174	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	665	425	0	0	368	115	963	0	189			
Adj No. of Lanes	2	2	0	0	2	1	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	1339	2144	0	0	608	272	1103	0	492			
Arrive On Green	0.13	0.20	0.00	0.00	0.06	0.06	0.31	0.00	0.31			
Sat Flow, veh/h	3442	3632	0	0	3632	1583	3548	0	1583			
Grp Volume(v), veh/h	665	425	0	0	368	115	963	0	189			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1583	1774	0	1583			
Q Serve(g_s), s	21.6	12.0	0.0	0.0	12.2	8.4	30.8	0.0	11.2			
Cycle Q Clear(g_c), s	21.6	12.0	0.0	0.0	12.2	8.4	30.8	0.0	11.2			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1339	2144	0	0	608	272	1103	0	492			
V/C Ratio(X)	0.50	0.20	0.00	0.00	0.61	0.42	0.87	0.00	0.38			
Avail Cap(c_a), veh/h	1339	2144	0	0	608	272	1520	0	678			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.45	0.45	0.00	0.00	0.99	0.99	1.00	0.00	1.00			
Uniform Delay (d), s/veh	41.4	23.7	0.0	0.0	52.6	50.9	39.1	0.0	32.3			
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	4.4	4.7	4.4	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	10.3	5.9	0.0	0.0	6.4	4.1	15.8	0.0	4.9			
LnGrp Delay(d),s/veh	41.5	23.8	0.0	0.0	57.0	55.6	43.5	0.0	32.8			
LnGrp LOS	D	C			E	F	D		C			
Approach Vol, veh/h		1090			483			1152				
Approach Delay, s/veh		34.6			56.7			41.8				
Approach LOS		C			E			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		41.9		78.1			52.1	26.0
Change Period (Y+Rc), s		4.6		5.4			5.4	* 5.4
Max Green Setting (Gmax), s		51.4		58.6			33.4	* 21
Max Q Clear Time (g_c+I1), s		32.8		14.0			23.6	14.2
Green Ext Time (p_c), s		4.5		6.3			3.9	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	41.5
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	92	468	513	18	24	60
Future Volume (veh/h)	92	468	513	18	24	60
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	100	509	572	0	26	65
Adj No. of Lanes	1	2	2	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	171	1866	2035	1510	354	301
Arrive On Green	0.10	0.10	0.57	0.00	0.19	0.19
Sat Flow, veh/h	1774	2787	3548	1863	1863	1583
Grp Volume(v), veh/h	100	509	572	0	26	65
Grp Sat Flow(s),veh/h/ln	1774	1393	1774	1863	1863	1583
Q Serve(g_s), s	5.4	0.0	8.2	0.0	1.1	3.5
Cycle Q Clear(g_c), s	5.4	0.0	8.2	0.0	1.1	3.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	171	1866	2035	1510	354	301
V/C Ratio(X)	0.59	0.27	0.28	0.00	0.07	0.22
Avail Cap(c_a), veh/h	415	2251	2035	1510	397	337
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.97	0.00	1.00	1.00
Uniform Delay (d), s/veh	43.3	6.7	10.8	0.0	33.3	34.2
Incr Delay (d2), s/veh	3.2	0.1	0.1	0.0	0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	7.0	4.0	0.0	0.6	1.5
LnGrp Delay(d),s/veh	46.5	6.7	10.9	0.0	33.3	34.5
LnGrp LOS	D	A	B		C	C
Approach Vol, veh/h	609			572	91	
Approach Delay, s/veh	13.3			10.9	34.2	
Approach LOS	B			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		85.8		14.2	62.1	23.7		
Change Period (Y+Rc), s		* 4.7		4.6	* 4.7	* 4.7		
Max Green Setting (Gmax), s		* 67		23.4	* 41	* 21		
Max Q Clear Time (g_c+I1), s		0.0		7.4	10.2	5.5		
Green Ext Time (p_c), s		0.0		2.2	2.2	0.2		

Intersection Summary	
HCM 2010 Ctrl Delay	13.7
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	483	181	2	1	226	49	5	18	0	75	15	417
Future Volume (veh/h)	483	181	2	1	226	49	5	18	0	75	15	417
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	525	197	2	1	246	53	5	20	0	82	16	453
Adj No. of Lanes	2	1	0	1	1	0	0	1	0	0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	872	1276	13	2	648	140	9	37	0	137	27	961
Arrive On Green	0.42	1.00	1.00	0.00	0.44	0.44	0.03	0.03	0.00	0.09	0.09	0.09
Sat Flow, veh/h	3442	1841	19	1774	1486	320	369	1475	0	1496	292	2787
Grp Volume(v), veh/h	525	0	199	1	0	299	25	0	0	98	0	453
Grp Sat Flow(s),veh/h/ln	1721	0	1859	1774	0	1806	1844	0	0	1788	0	1393
Q Serve(g_s), s	11.8	0.0	0.0	0.1	0.0	11.2	1.3	0.0	0.0	5.3	0.0	0.0
Cycle Q Clear(g_c), s	11.8	0.0	0.0	0.1	0.0	11.2	1.3	0.0	0.0	5.3	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.18	0.20		0.00	0.84		1.00
Lane Grp Cap(c), veh/h	872	0	1289	2	0	787	46	0	0	164	0	961
V/C Ratio(X)	0.60	0.00	0.15	0.41	0.00	0.38	0.54	0.00	0.00	0.60	0.00	0.47
Avail Cap(c_a), veh/h	872	0	1289	89	0	787	332	0	0	322	0	1208
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.00	0.91	1.00	0.00	1.00	1.00	0.00	0.00	0.99	0.00	0.99
Uniform Delay (d), s/veh	24.9	0.0	0.0	49.9	0.0	19.1	48.2	0.0	0.0	43.7	0.0	25.6
Incr Delay (d2), s/veh	1.1	0.0	0.2	84.8	0.0	0.3	9.5	0.0	0.0	3.4	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	0.1	0.1	0.0	5.6	0.8	0.0	0.0	2.8	0.0	4.9
LnGrp Delay(d),s/veh	26.0	0.0	0.2	134.7	0.0	19.4	57.7	0.0	0.0	47.1	0.0	26.0
LnGrp LOS	C		A	F		B	F			D		C
Approach Vol, veh/h		724			300			25			551	
Approach Delay, s/veh		18.9			19.7			57.7			29.7	
Approach LOS		B			B			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		7.1	4.7	74.4		13.7	30.5	48.7
Change Period (Y+Rc), s		4.6	4.6	5.1		4.6	5.1	* 5.1
Max Green Setting (Gmax), s		18.0	5.0	40.1		18.0	22.2	* 23
Max Q Clear Time (g_c+I1), s		3.3	2.1	2.0		7.3	13.8	13.2
Green Ext Time (p_c), s		0.0	0.0	3.3		1.9	2.1	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	23.4
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	690	863	154	632	0	0	0	0	47	0	458
Future Volume (veh/h)	0	690	863	154	632	0	0	0	0	47	0	458
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	750	938	167	687	0				51	0	498
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1653	739	229	2290	0				454	0	405
Arrive On Green	0.00	0.78	0.78	0.26	1.00	0.00				0.26	0.00	0.26
Sat Flow, veh/h	0	3632	1583	1774	3632	0				1774	0	1583
Grp Volume(v), veh/h	0	750	938	167	687	0				51	0	498
Grp Sat Flow(s),veh/h/ln	0	1770	1583	1774	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	7.2	46.7	8.6	0.0	0.0				2.2	0.0	25.6
Cycle Q Clear(g_c), s	0.0	7.2	46.7	8.6	0.0	0.0				2.2	0.0	25.6
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1653	739	229	2290	0				454	0	405
V/C Ratio(X)	0.00	0.45	1.27	0.73	0.30	0.00				0.11	0.00	1.23
Avail Cap(c_a), veh/h	0	1653	739	238	2290	0				454	0	405
HCM Platoon Ratio	1.00	1.67	1.67	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.87	0.87	0.89	0.89	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.7	11.0	35.5	0.0	0.0				28.5	0.0	37.2
Incr Delay (d2), s/veh	0.0	0.8	130.1	9.4	0.3	0.0				0.1	0.0	122.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.5	45.9	4.8	0.1	0.0				1.1	0.0	25.0
LnGrp Delay(d),s/veh	0.0	7.4	141.1	44.9	0.3	0.0				28.6	0.0	160.1
LnGrp LOS		A	F	D	A					C		F
Approach Vol, veh/h		1688			854						549	
Approach Delay, s/veh		81.7			9.0						147.8	
Approach LOS		F			A						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			18.0	51.8		30.2		69.8
Change Period (Y+Rc), s			5.1	* 5.1		4.6		5.1
Max Green Setting (Gmax), s			13.4	* 47		25.6		64.7
Max Q Clear Time (g_c+I1), s			10.6	48.7		27.6		2.0
Green Ext Time (p_c), s			1.4	0.0		0.0		6.2

Intersection Summary	
HCM 2010 Ctrl Delay	73.4
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2127	714	184	2268	0	0	0	0	122	0	491
Future Volume (veh/h)	0	2127	714	184	2268	0	0	0	0	122	0	491
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	2318	772	200	2465	0				133	0	0
Adj No. of Lanes	0	3	1	2	3	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2738	776	977	4223	0				215	0	96
Arrive On Green	0.00	0.49	0.49	0.57	1.00	0.00				0.06	0.00	0.00
Sat Flow, veh/h	0	5588	1583	3442	5253	0				3548	0	1583
Grp Volume(v), veh/h	0	2318	772	200	2465	0				133	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1695	0				1774	0	1583
Q Serve(g_s), s	0.0	32.5	43.7	2.6	0.0	0.0				3.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	32.5	43.7	2.6	0.0	0.0				3.3	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2738	776	977	4223	0				215	0	96
V/C Ratio(X)	0.00	0.85	1.00	0.20	0.58	0.00				0.62	0.00	0.00
Avail Cap(c_a), veh/h	0	2738	776	977	4223	0				997	0	445
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.25	0.25	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	20.0	22.8	14.5	0.0	0.0				41.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.5	31.1	0.0	0.2	0.0				2.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	17.4	25.6	1.2	0.1	0.0				1.7	0.0	0.0
LnGrp Delay(d),s/veh	0.0	23.5	54.0	14.5	0.2	0.0				44.1	0.0	0.0
LnGrp LOS		C	D	B	A					D		
Approach Vol, veh/h		3090			2665						133	
Approach Delay, s/veh		31.1			1.2						44.1	
Approach LOS		C			A						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			30.6	49.2		10.2		79.8
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			6.1	* 44		25.3		54.9
Max Q Clear Time (g_c+I1), s			4.6	45.7		5.3		2.0
Green Ext Time (p_c), s			1.2	0.0		0.4		39.3

Intersection Summary	
HCM 2010 Ctrl Delay	17.9
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	229	1782	0	0	1596	124	1043	0	563	0	0	0
Future Volume (veh/h)	229	1782	0	0	1596	124	1043	0	563	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	249	1937	0	0	1735	135	1134	0	0			
Adj No. of Lanes	1	3	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	274	2760	0	0	2053	160	1236	0	552			
Arrive On Green	0.31	1.00	0.00	0.00	0.34	0.34	0.35	0.00	0.00			
Sat Flow, veh/h	1774	5253	0	0	6370	475	3548	0	1583			
Grp Volume(v), veh/h	249	1937	0	0	1365	505	1134	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1695	0	0	1602	1779	1774	0	1583			
Q Serve(g_s), s	12.1	0.0	0.0	0.0	23.7	23.7	27.5	0.0	0.0			
Cycle Q Clear(g_c), s	12.1	0.0	0.0	0.0	23.7	23.7	27.5	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.27	1.00		1.00			
Lane Grp Cap(c), veh/h	274	2760	0	0	1615	598	1236	0	552			
V/C Ratio(X)	0.91	0.70	0.00	0.00	0.85	0.85	0.92	0.00	0.00			
Avail Cap(c_a), veh/h	274	2760	0	0	1615	598	1313	0	586			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	30.5	0.0	0.0	0.0	27.7	27.7	28.1	0.0	0.0			
Incr Delay (d2), s/veh	4.5	0.1	0.0	0.0	5.6	13.7	10.0	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.2	0.0	0.0	0.0	11.3	13.9	15.1	0.0	0.0			
LnGrp Delay(d),s/veh	35.0	0.1	0.0	0.0	33.3	41.4	38.1	0.0	0.0			
LnGrp LOS	D	A			C	D	D					
Approach Vol, veh/h		2186			1870			1134				
Approach Delay, s/veh		4.1			35.5			38.1				
Approach LOS		A			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		36.1		53.9			18.6	35.3
Change Period (Y+Rc), s		* 4.7		5.1			* 4.7	5.1
Max Green Setting (Gmax), s		* 33		46.9			* 14	28.3
Max Q Clear Time (g_c+I1), s		29.5		2.0			14.1	25.7
Green Ext Time (p_c), s		1.8		41.7			0.0	2.6

Intersection Summary	
HCM 2010 Ctrl Delay	22.9
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1295	698	408	879	0	0	0	0	119	0	272
Future Volume (veh/h)	0	1295	698	408	879	0	0	0	0	119	0	272
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	1408	759	443	955	0				129	0	296
Adj No. of Lanes	0	3	1	1	2	0				0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2317	721	471	2715	0				236	0	370
Arrive On Green	0.00	0.91	0.91	0.35	1.00	0.00				0.13	0.00	0.13
Sat Flow, veh/h	0	5253	1583	1774	3632	0				1774	0	2787
Grp Volume(v), veh/h	0	1408	759	443	955	0				129	0	296
Grp Sat Flow(s),veh/h/ln	0	1695	1583	1774	1770	0				1774	0	1393
Q Serve(g_s), s	0.0	5.5	45.6	24.2	0.0	0.0				6.8	0.0	10.3
Cycle Q Clear(g_c), s	0.0	5.5	45.6	24.2	0.0	0.0				6.8	0.0	10.3
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2317	721	471	2715	0				236	0	370
V/C Ratio(X)	0.00	0.61	1.05	0.94	0.35	0.00				0.55	0.00	0.80
Avail Cap(c_a), veh/h	0	2317	721	504	2715	0				319	0	502
HCM Platoon Ratio	1.00	2.00	2.00	1.33	1.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.72	0.72	0.87	0.87	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	2.7	4.4	31.6	0.0	0.0				40.5	0.0	42.1
Incr Delay (d2), s/veh	0.0	0.9	43.3	22.9	0.3	0.0				2.0	0.0	6.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.3	24.3	14.8	0.1	0.0				3.5	0.0	4.3
LnGrp Delay(d),s/veh	0.0	3.5	47.7	54.5	0.3	0.0				42.5	0.0	48.5
LnGrp LOS		A	F	D	A					D		D
Approach Vol, veh/h		2167			1398						425	
Approach Delay, s/veh		19.0			17.5						46.7	
Approach LOS		B			B						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			31.2	51.0		17.9		82.1
Change Period (Y+Rc), s			4.6	5.4		4.6		5.4
Max Green Setting (Gmax), s			28.4	39.0		18.0		72.0
Max Q Clear Time (g_c+I1), s			26.2	47.6		12.3		2.0
Green Ext Time (p_c), s			0.4	0.0		1.0		48.2

Intersection Summary	
HCM 2010 Ctrl Delay	21.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	478	310	0	0	257	80	654	0	130	0	0	0
Future Volume (veh/h)	478	310	0	0	257	80	654	0	130	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	520	337	0	0	279	87	711	0	141			
Adj No. of Lanes	2	2	0	0	2	1	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	1374	2334	0	0	729	326	854	0	381			
Arrive On Green	0.13	0.22	0.00	0.00	0.07	0.07	0.24	0.00	0.24			
Sat Flow, veh/h	3442	3632	0	0	3632	1583	3548	0	1583			
Grp Volume(v), veh/h	520	337	0	0	279	87	711	0	141			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1583	1774	0	1583			
Q Serve(g_s), s	13.8	7.7	0.0	0.0	7.5	5.2	19.0	0.0	7.4			
Cycle Q Clear(g_c), s	13.8	7.7	0.0	0.0	7.5	5.2	19.0	0.0	7.4			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1374	2334	0	0	729	326	854	0	381			
V/C Ratio(X)	0.38	0.14	0.00	0.00	0.38	0.27	0.83	0.00	0.37			
Avail Cap(c_a), veh/h	1374	2334	0	0	729	326	1327	0	592			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.66	0.66	0.00	0.00	0.99	0.99	1.00	0.00	1.00			
Uniform Delay (d), s/veh	32.1	16.3	0.0	0.0	40.5	39.4	36.1	0.0	31.7			
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	1.5	2.0	2.8	0.0	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.6	3.8	0.0	0.0	3.8	2.5	9.6	0.0	3.3			
LnGrp Delay(d),s/veh	32.2	16.4	0.0	0.0	42.0	41.4	38.8	0.0	32.2			
LnGrp LOS	C	B			D	D	D		C			
Approach Vol, veh/h		857			366			852				
Approach Delay, s/veh		26.0			41.9			37.7				
Approach LOS		C			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		28.7		71.3			45.3	26.0
Change Period (Y+Rc), s		4.6		5.4			5.4	* 5.4
Max Green Setting (Gmax), s		37.4		52.6			27.4	* 21
Max Q Clear Time (g_c+I1), s		21.0		9.7			15.8	9.5
Green Ext Time (p_c), s		3.0		4.6			3.3	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	33.6
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	48	420	312	5	23	73
Future Volume (veh/h)	48	420	312	5	23	73
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	52	457	343	0	25	79
Adj No. of Lanes	1	2	2	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	122	1753	1988	1554	419	356
Arrive On Green	0.07	0.07	0.56	0.00	0.23	0.23
Sat Flow, veh/h	1774	2787	3548	1863	1863	1583
Grp Volume(v), veh/h	52	457	343	0	25	79
Grp Sat Flow(s),veh/h/ln	1774	1393	1774	1863	1863	1583
Q Serve(g_s), s	2.7	0.0	4.5	0.0	1.0	3.9
Cycle Q Clear(g_c), s	2.7	0.0	4.5	0.0	1.0	3.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	122	1753	1988	1554	419	356
V/C Ratio(X)	0.43	0.26	0.17	0.00	0.06	0.22
Avail Cap(c_a), veh/h	414	2212	1988	1554	472	401
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	7.9	10.3	0.0	29.2	30.3
Incr Delay (d2), s/veh	2.3	0.1	0.0	0.0	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	6.0	2.2	0.0	0.5	1.7
LnGrp Delay(d),s/veh	45.2	8.0	10.3	0.0	29.3	30.7
LnGrp LOS	D	A	B		C	C
Approach Vol, veh/h	509			343	104	
Approach Delay, s/veh	11.8			10.3	30.3	
Approach LOS	B			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		84.8		11.2	58.5	26.3		
Change Period (Y+Rc), s		* 4.7		4.6	* 4.7	* 4.7		
Max Green Setting (Gmax), s		* 64		22.4	* 35	* 24		
Max Q Clear Time (g_c+I1), s		0.0		4.7	6.5	5.9		
Green Ext Time (p_c), s		0.0		1.9	1.2	0.3		

Intersection Summary	
HCM 2010 Ctrl Delay	13.3
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	264	135	2	0	144	21	3	7	0	57	16	338
Future Volume (veh/h)	264	135	2	0	144	21	3	7	0	57	16	338
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	287	147	2	0	157	23	3	8	0	62	17	367
Adj No. of Lanes	2	1	0	1	1	0	0	1	0	0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	802	1390	19	2	750	110	7	18	0	112	31	871
Arrive On Green	0.08	0.25	0.25	0.00	0.47	0.47	0.01	0.01	0.00	0.08	0.08	0.08
Sat Flow, veh/h	3442	1833	25	1774	1589	233	501	1337	0	1407	386	2787
Grp Volume(v), veh/h	287	0	149	0	0	180	11	0	0	79	0	367
Grp Sat Flow(s),veh/h/ln	1721	0	1858	1774	0	1822	1838	0	0	1792	0	1393
Q Serve(g_s), s	7.6	0.0	5.9	0.0	0.0	5.6	0.6	0.0	0.0	4.1	0.0	0.0
Cycle Q Clear(g_c), s	7.6	0.0	5.9	0.0	0.0	5.6	0.6	0.0	0.0	4.1	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.13	0.27		0.00	0.78		1.00
Lane Grp Cap(c), veh/h	802	0	1409	2	0	860	24	0	0	143	0	871
V/C Ratio(X)	0.36	0.00	0.11	0.00	0.00	0.21	0.45	0.00	0.00	0.55	0.00	0.42
Avail Cap(c_a), veh/h	802	0	1409	92	0	860	345	0	0	344	0	1183
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.00	0.96	0.00	0.00	1.00	1.00	0.00	0.00	0.99	0.00	0.99
Uniform Delay (d), s/veh	37.5	0.0	10.9	0.0	0.0	14.8	47.0	0.0	0.0	42.5	0.0	26.1
Incr Delay (d2), s/veh	0.3	0.0	0.1	0.0	0.0	0.1	12.5	0.0	0.0	3.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	3.1	0.0	0.0	2.8	0.4	0.0	0.0	2.1	0.0	3.9
LnGrp Delay(d),s/veh	37.8	0.0	11.1	0.0	0.0	15.0	59.6	0.0	0.0	45.8	0.0	26.4
LnGrp LOS	D		B			B	F			D		C
Approach Vol, veh/h		436			180			11			446	
Approach Delay, s/veh		28.6			15.0			59.6			29.9	
Approach LOS		C			B			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		5.9	0.0	77.9		12.2	27.5	50.4
Change Period (Y+Rc), s		4.6	4.6	5.1		4.6	5.1	* 5.1
Max Green Setting (Gmax), s		18.0	5.0	35.7		18.4	21.8	* 19
Max Q Clear Time (g_c+I1), s		2.6	0.0	7.9		6.1	9.6	7.6
Green Ext Time (p_c), s		0.0	0.0	1.9		1.6	1.5	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	27.2
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	518	666	115	473	0	0	0	0	35	0	344
Future Volume (veh/h)	0	518	666	115	473	0	0	0	0	35	0	344
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	563	724	125	514	0				38	0	374
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1655	741	238	2319	0				432	0	386
Arrive On Green	0.00	0.31	0.31	0.27	1.00	0.00				0.24	0.00	0.24
Sat Flow, veh/h	0	3632	1583	1774	3632	0				1774	0	1583
Grp Volume(v), veh/h	0	563	724	125	514	0				38	0	374
Grp Sat Flow(s),veh/h/ln	0	1770	1583	1774	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	11.7	43.5	5.8	0.0	0.0				1.6	0.0	22.5
Cycle Q Clear(g_c), s	0.0	11.7	43.5	5.8	0.0	0.0				1.6	0.0	22.5
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1655	741	238	2319	0				432	0	386
V/C Ratio(X)	0.00	0.34	0.98	0.52	0.22	0.00				0.09	0.00	0.97
Avail Cap(c_a), veh/h	0	1655	741	248	2319	0				432	0	386
HCM Platoon Ratio	1.00	0.67	0.67	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.91	0.91	0.95	0.95	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	21.6	32.5	32.5	0.0	0.0				28.1	0.0	35.9
Incr Delay (d2), s/veh	0.0	0.5	26.5	1.8	0.2	0.0				0.1	0.0	37.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.8	24.5	2.9	0.1	0.0				0.8	0.0	13.8
LnGrp Delay(d),s/veh	0.0	22.1	59.0	34.2	0.2	0.0				28.1	0.0	73.5
LnGrp LOS		C	F	C	A					C		F
Approach Vol, veh/h		1287			639						412	
Approach Delay, s/veh		42.9			6.9						69.3	
Approach LOS		D			A						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			18.0	50.0		28.0		68.0
Change Period (Y+Rc), s			5.1	* 5.1		4.6		5.1
Max Green Setting (Gmax), s			13.4	* 45		23.4		62.9
Max Q Clear Time (g_c+I1), s			7.8	45.5		24.5		2.0
Green Ext Time (p_c), s			1.9	0.0		0.0		4.3

Intersection Summary	
HCM 2010 Ctrl Delay	37.7
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2838	953	240	3012	0	0	0	0	165	0	655
Future Volume (veh/h)	0	2838	953	240	3012	0	0	0	0	165	0	655
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	3094	1030	261	3274	0				179	0	0
Adj No. of Lanes	0	3	1	2	3	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2943	834	1046	4401	0				239	0	107
Arrive On Green	0.00	0.53	0.53	0.61	1.00	0.00				0.07	0.00	0.00
Sat Flow, veh/h	0	5588	1583	3442	5253	0				3548	0	1583
Grp Volume(v), veh/h	0	3094	1030	261	3274	0				179	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1695	0				1774	0	1583
Q Serve(g_s), s	0.0	76.9	76.9	5.1	0.0	0.0				7.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	76.9	76.9	5.1	0.0	0.0				7.2	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2943	834	1046	4401	0				239	0	107
V/C Ratio(X)	0.00	1.05	1.24	0.25	0.74	0.00				0.75	0.00	0.00
Avail Cap(c_a), veh/h	0	2943	834	1046	4401	0				1101	0	491
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	34.5	34.5	21.0	0.0	0.0				66.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	32.1	116.1	0.0	0.1	0.0				4.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	48.0	60.3	2.4	0.0	0.0				3.7	0.0	0.0
LnGrp Delay(d),s/veh	0.0	66.6	150.7	21.0	0.1	0.0				71.5	0.0	0.0
LnGrp LOS		F	F	C	A					F		
Approach Vol, veh/h		4124			3535						179	
Approach Delay, s/veh		87.6			1.6						71.5	
Approach LOS		F			A						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			49.5	82.0		14.5		131.5
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			9.3	* 77		45.3		90.9
Max Q Clear Time (g_c+I1), s			7.1	78.9		9.2		2.0
Green Ext Time (p_c), s			1.8	0.0		0.6		80.6

Intersection Summary	
HCM 2010 Ctrl Delay	48.5
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	305	2381	0	0	2110	154	1391	0	751	0	0	0
Future Volume (veh/h)	305	2381	0	0	2110	154	1391	0	751	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	332	2588	0	0	2293	167	1512	0	0			
Adj No. of Lanes	1	3	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	271	2678	0	0	2100	153	1441	0	643			
Arrive On Green	0.31	1.00	0.00	0.00	0.34	0.34	0.41	0.00	0.00			
Sat Flow, veh/h	1774	5253	0	0	6404	446	3548	0	1583			
Grp Volume(v), veh/h	332	2588	0	0	1793	667	1512	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1695	0	0	1602	1784	1774	0	1583			
Q Serve(g_s), s	22.3	0.0	0.0	0.0	49.9	49.9	59.3	0.0	0.0			
Cycle Q Clear(g_c), s	22.3	0.0	0.0	0.0	49.9	49.9	59.3	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.25	1.00		1.00			
Lane Grp Cap(c), veh/h	271	2678	0	0	1643	610	1441	0	643			
V/C Ratio(X)	1.23	0.97	0.00	0.00	1.09	1.09	1.05	0.00	0.00			
Avail Cap(c_a), veh/h	271	2678	0	0	1643	610	1441	0	643			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	50.7	0.0	0.0	0.0	48.0	48.1	43.3	0.0	0.0			
Incr Delay (d2), s/veh	104.5	1.6	0.0	0.0	51.5	64.9	37.8	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	18.7	0.4	0.0	0.0	29.9	35.6	36.6	0.0	0.0			
LnGrp Delay(d),s/veh	155.2	1.6	0.0	0.0	99.6	113.0	81.1	0.0	0.0			
LnGrp LOS	F	A			F	F	F					
Approach Vol, veh/h		2920			2460			1512				
Approach Delay, s/veh		19.0			103.2			81.1				
Approach LOS		B			F			F				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		64.0		82.0			27.0	55.0
Change Period (Y+Rc), s		* 4.7		5.1			* 4.7	5.1
Max Green Setting (Gmax), s		* 59		76.9			* 22	49.9
Max Q Clear Time (g_c+I1), s		61.3		2.0			24.3	51.9
Green Ext Time (p_c), s		0.0		73.6			0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	62.7
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1683	893	544	1191	0	0	0	0	159	0	368
Future Volume (veh/h)	0	1683	893	544	1191	0	0	0	0	159	0	368
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	1829	971	591	1295	0				173	0	400
Adj No. of Lanes	0	3	1	1	2	0				0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2204	686	523	2713	0				266	0	418
Arrive On Green	0.00	0.87	0.87	0.29	0.77	0.00				0.15	0.00	0.15
Sat Flow, veh/h	0	5253	1583	1774	3632	0				1774	0	2787
Grp Volume(v), veh/h	0	1829	971	591	1295	0				173	0	400
Grp Sat Flow(s),veh/h/ln	0	1695	1583	1774	1770	0				1774	0	1393
Q Serve(g_s), s	0.0	20.5	52.0	35.4	16.2	0.0				11.0	0.0	17.1
Cycle Q Clear(g_c), s	0.0	20.5	52.0	35.4	16.2	0.0				11.0	0.0	17.1
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2204	686	523	2713	0				266	0	418
V/C Ratio(X)	0.00	0.83	1.42	1.13	0.48	0.00				0.65	0.00	0.96
Avail Cap(c_a), veh/h	0	2204	686	523	2713	0				266	0	418
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.52	0.52	0.72	0.72	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	5.9	8.0	42.3	5.2	0.0				48.0	0.0	50.6
Incr Delay (d2), s/veh	0.0	2.0	191.4	74.9	0.4	0.0				5.5	0.0	33.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.9	56.7	28.2	7.9	0.0				5.8	0.0	8.5
LnGrp Delay(d),s/veh	0.0	7.9	199.4	117.2	5.6	0.0				53.5	0.0	83.6
LnGrp LOS		A	F	F	A					D		F
Approach Vol, veh/h		2800			1886						573	
Approach Delay, s/veh		74.3			40.6						74.5	
Approach LOS		E			D						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			40.0	57.4		22.6		97.4
Change Period (Y+Rc), s			4.6	5.4		4.6		5.4
Max Green Setting (Gmax), s			35.4	52.0		18.0		92.0
Max Q Clear Time (g_c+I1), s			37.4	54.0		19.1		18.2
Green Ext Time (p_c), s			0.0	0.0		0.0		66.2

Intersection Summary	
HCM 2010 Ctrl Delay	62.3
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	614	392	0	0	340	106	894	0	174	0	0	0
Future Volume (veh/h)	614	392	0	0	340	106	894	0	174	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	667	426	0	0	370	115	972	0	189			
Adj No. of Lanes	2	2	0	0	2	1	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	1330	2135	0	0	608	272	1113	0	496			
Arrive On Green	0.13	0.20	0.00	0.00	0.06	0.06	0.31	0.00	0.31			
Sat Flow, veh/h	3442	3632	0	0	3632	1583	3548	0	1583			
Grp Volume(v), veh/h	667	426	0	0	370	115	972	0	189			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1583	1774	0	1583			
Q Serve(g_s), s	21.7	12.0	0.0	0.0	12.3	8.4	31.1	0.0	11.2			
Cycle Q Clear(g_c), s	21.7	12.0	0.0	0.0	12.3	8.4	31.1	0.0	11.2			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1330	2135	0	0	608	272	1113	0	496			
V/C Ratio(X)	0.50	0.20	0.00	0.00	0.61	0.42	0.87	0.00	0.38			
Avail Cap(c_a), veh/h	1330	2135	0	0	608	272	1520	0	678			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.45	0.45	0.00	0.00	0.99	0.99	1.00	0.00	1.00			
Uniform Delay (d), s/veh	41.6	23.9	0.0	0.0	52.7	50.9	38.9	0.0	32.1			
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	4.4	4.7	4.5	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	10.4	5.9	0.0	0.0	6.4	4.1	16.0	0.0	4.9			
LnGrp Delay(d),s/veh	41.7	24.0	0.0	0.0	57.1	55.6	43.4	0.0	32.6			
LnGrp LOS	D	C			E	F	D		C			
Approach Vol, veh/h		1093			485			1161				
Approach Delay, s/veh		34.8			56.7			41.7				
Approach LOS		C			E			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		42.2		77.8			51.8	26.0
Change Period (Y+Rc), s		4.6		5.4			5.4	* 5.4
Max Green Setting (Gmax), s		51.4		58.6			33.4	* 21
Max Q Clear Time (g_c+I1), s		33.1		14.0			23.7	14.3
Green Ext Time (p_c), s		4.5		6.3			3.9	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	41.6
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	92	471	513	18	24	60
Future Volume (veh/h)	92	471	513	18	24	60
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	100	512	572	0	26	65
Adj No. of Lanes	1	2	2	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	171	1867	2035	1510	354	301
Arrive On Green	0.10	0.10	0.57	0.00	0.19	0.19
Sat Flow, veh/h	1774	2787	3548	1863	1863	1583
Grp Volume(v), veh/h	100	512	572	0	26	65
Grp Sat Flow(s),veh/h/ln	1774	1393	1774	1863	1863	1583
Q Serve(g_s), s	5.4	0.0	8.2	0.0	1.1	3.5
Cycle Q Clear(g_c), s	5.4	0.0	8.2	0.0	1.1	3.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	171	1867	2035	1510	354	301
V/C Ratio(X)	0.59	0.27	0.28	0.00	0.07	0.22
Avail Cap(c_a), veh/h	415	2251	2035	1510	397	337
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.97	0.00	1.00	1.00
Uniform Delay (d), s/veh	43.3	6.7	10.8	0.0	33.3	34.2
Incr Delay (d2), s/veh	3.2	0.1	0.1	0.0	0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	7.1	4.0	0.0	0.6	1.5
LnGrp Delay(d),s/veh	46.4	6.8	10.9	0.0	33.3	34.6
LnGrp LOS	D	A	B		C	C
Approach Vol, veh/h	612			572	91	
Approach Delay, s/veh	13.2			10.9	34.2	
Approach LOS	B			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		85.8		14.2	62.1	23.7		
Change Period (Y+Rc), s		* 4.7		4.6	* 4.7	* 4.7		
Max Green Setting (Gmax), s		* 67		23.4	* 41	* 21		
Max Q Clear Time (g_c+I1), s		0.0		7.4	10.2	5.5		
Green Ext Time (p_c), s		0.0		2.2	2.2	0.2		

Intersection Summary	
HCM 2010 Ctrl Delay	13.7
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	483	181	2	1	226	49	5	18	0	75	15	420
Future Volume (veh/h)	483	181	2	1	226	49	5	18	0	75	15	420
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	525	197	2	1	246	53	5	20	0	82	16	457
Adj No. of Lanes	2	1	0	1	1	0	0	1	0	0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	872	1276	13	2	648	140	9	37	0	137	27	962
Arrive On Green	0.42	1.00	1.00	0.00	0.44	0.44	0.03	0.03	0.00	0.09	0.09	0.09
Sat Flow, veh/h	3442	1841	19	1774	1486	320	369	1475	0	1496	292	2787
Grp Volume(v), veh/h	525	0	199	1	0	299	25	0	0	98	0	457
Grp Sat Flow(s),veh/h/ln	1721	0	1859	1774	0	1806	1844	0	0	1788	0	1393
Q Serve(g_s), s	11.8	0.0	0.0	0.1	0.0	11.2	1.3	0.0	0.0	5.3	0.0	0.0
Cycle Q Clear(g_c), s	11.8	0.0	0.0	0.1	0.0	11.2	1.3	0.0	0.0	5.3	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.18	0.20		0.00	0.84		1.00
Lane Grp Cap(c), veh/h	872	0	1289	2	0	787	46	0	0	164	0	962
V/C Ratio(X)	0.60	0.00	0.15	0.41	0.00	0.38	0.54	0.00	0.00	0.60	0.00	0.48
Avail Cap(c_a), veh/h	872	0	1289	89	0	787	332	0	0	322	0	1208
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.00	0.91	1.00	0.00	1.00	1.00	0.00	0.00	0.99	0.00	0.99
Uniform Delay (d), s/veh	24.9	0.0	0.0	49.9	0.0	19.1	48.2	0.0	0.0	43.6	0.0	25.7
Incr Delay (d2), s/veh	1.1	0.0	0.2	84.8	0.0	0.3	9.5	0.0	0.0	3.4	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	0.1	0.1	0.0	5.6	0.8	0.0	0.0	2.8	0.0	4.9
LnGrp Delay(d),s/veh	26.0	0.0	0.2	134.7	0.0	19.4	57.7	0.0	0.0	47.1	0.0	26.0
LnGrp LOS	C		A	F		B	F			D		C
Approach Vol, veh/h		724			300			25			555	
Approach Delay, s/veh		18.9			19.8			57.7			29.7	
Approach LOS		B			B			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		7.1	4.7	74.4		13.8	30.4	48.7
Change Period (Y+Rc), s		4.6	4.6	5.1		4.6	5.1	* 5.1
Max Green Setting (Gmax), s		18.0	5.0	40.1		18.0	22.2	* 23
Max Q Clear Time (g_c+I1), s		3.3	2.1	2.0		7.3	13.8	13.2
Green Ext Time (p_c), s		0.0	0.0	3.3		1.9	2.1	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	23.4
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	690	865	154	635	0	0	0	0	47	0	458
Future Volume (veh/h)	0	690	865	154	635	0	0	0	0	47	0	458
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	750	940	167	690	0				51	0	498
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1653	739	229	2290	0				454	0	405
Arrive On Green	0.00	0.78	0.78	0.26	1.00	0.00				0.26	0.00	0.26
Sat Flow, veh/h	0	3632	1583	1774	3632	0				1774	0	1583
Grp Volume(v), veh/h	0	750	940	167	690	0				51	0	498
Grp Sat Flow(s),veh/h/ln	0	1770	1583	1774	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	7.2	46.7	8.6	0.0	0.0				2.2	0.0	25.6
Cycle Q Clear(g_c), s	0.0	7.2	46.7	8.6	0.0	0.0				2.2	0.0	25.6
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1653	739	229	2290	0				454	0	405
V/C Ratio(X)	0.00	0.45	1.27	0.73	0.30	0.00				0.11	0.00	1.23
Avail Cap(c_a), veh/h	0	1653	739	238	2290	0				454	0	405
HCM Platoon Ratio	1.00	1.67	1.67	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.87	0.87	0.89	0.89	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.7	11.0	35.5	0.0	0.0				28.5	0.0	37.2
Incr Delay (d2), s/veh	0.0	0.8	131.3	9.4	0.3	0.0				0.1	0.0	122.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.5	46.1	4.8	0.1	0.0				1.1	0.0	25.0
LnGrp Delay(d),s/veh	0.0	7.4	142.3	44.9	0.3	0.0				28.6	0.0	160.1
LnGrp LOS		A	F	D	A					C		F
Approach Vol, veh/h		1690			857						549	
Approach Delay, s/veh		82.4			9.0						147.8	
Approach LOS		F			A						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			18.0	51.8		30.2		69.8
Change Period (Y+Rc), s			5.1	* 5.1		4.6		5.1
Max Green Setting (Gmax), s			13.4	* 47		25.6		64.7
Max Q Clear Time (g_c+I1), s			10.6	48.7		27.6		2.0
Green Ext Time (p_c), s			1.4	0.0		0.0		6.3

Intersection Summary	
HCM 2010 Ctrl Delay	73.7
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	942	1140	471	2120	0	0	0	0	36	0	118
Future Volume (veh/h)	0	942	1140	471	2120	0	0	0	0	36	0	118
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	1024	1239	512	2304	0				39	0	0
Adj No. of Lanes	0	2	2	2	2	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1578	1342	1182	2952	0				131	0	58
Arrive On Green	0.00	0.42	0.42	0.46	1.00	0.00				0.04	0.00	0.00
Sat Flow, veh/h	0	3725	3167	3442	3632	0				3548	0	1583
Grp Volume(v), veh/h	0	1024	1239	512	2304	0				39	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	16.6	28.2	7.7	0.0	0.0				0.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	16.6	28.2	7.7	0.0	0.0				0.8	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1578	1342	1182	2952	0				131	0	58
V/C Ratio(X)	0.00	0.65	0.92	0.43	0.78	0.00				0.30	0.00	0.00
Avail Cap(c_a), veh/h	0	1578	1342	1182	2952	0				840	0	375
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.38	0.38	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	17.4	20.7	15.6	0.0	0.0				35.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.1	12.0	0.1	0.8	0.0				1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.0	14.5	3.6	0.3	0.0				0.4	0.0	0.0
LnGrp Delay(d),s/veh	0.0	19.5	32.7	15.7	0.8	0.0				36.9	0.0	0.0
LnGrp LOS		B	C	B	A					D		
Approach Vol, veh/h		2263			2816						39	
Approach Delay, s/veh		26.7			3.5						36.9	
Approach LOS		C			A						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			31.2	37.3		7.5		68.5
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			11.3	* 32		18.0		48.2
Max Q Clear Time (g_c+I1), s			9.7	30.2		2.8		2.0
Green Ext Time (p_c), s			1.3	1.8		0.1		37.3

Intersection Summary	
HCM 2010 Ctrl Delay	14.0
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	948	0	0	2360	141	684	2	397	0	0	0
Future Volume (veh/h)	91	948	0	0	2360	141	684	2	397	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	99	1030	0	0	2565	153	744	0	0			
Adj No. of Lanes	1	2	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	185	2231	0	0	2862	170	854	0	381			
Arrive On Green	0.10	0.63	0.00	0.00	0.46	0.46	0.24	0.00	0.00			
Sat Flow, veh/h	1774	3632	0	0	6494	370	3548	0	1583			
Grp Volume(v), veh/h	99	1030	0	0	1975	743	744	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1602	1797	1774	0	1583			
Q Serve(g_s), s	4.0	11.5	0.0	0.0	28.7	28.9	15.3	0.0	0.0			
Cycle Q Clear(g_c), s	4.0	11.5	0.0	0.0	28.7	28.9	15.3	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.21	1.00		1.00			
Lane Grp Cap(c), veh/h	185	2231	0	0	2207	825	854	0	381			
V/C Ratio(X)	0.54	0.46	0.00	0.00	0.89	0.90	0.87	0.00	0.00			
Avail Cap(c_a), veh/h	185	2231	0	0	2207	825	948	0	423			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.65	0.65	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	32.3	7.3	0.0	0.0	18.9	18.9	27.7	0.0	0.0			
Incr Delay (d2), s/veh	2.0	0.4	0.0	0.0	6.2	14.8	8.3	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.1	5.7	0.0	0.0	13.9	17.6	8.4	0.0	0.0			
LnGrp Delay(d),s/veh	34.3	7.8	0.0	0.0	25.0	33.7	36.0	0.0	0.0			
LnGrp LOS	C	A			C	C	D					
Approach Vol, veh/h		1129			2718			744				
Approach Delay, s/veh		10.1			27.4			36.0				
Approach LOS		B			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		23.0		53.0			13.0	40.0
Change Period (Y+Rc), s		* 4.7		5.1			5.1	* 5.1
Max Green Setting (Gmax), s		* 20		45.9			6.3	* 35
Max Q Clear Time (g_c+I1), s		17.3		13.5			6.0	30.9
Green Ext Time (p_c), s		1.0		9.4			0.2	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	24.5
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1644	619	512	2304	19	20	128
v/c Ratio	0.71	0.63	1.00	0.92	0.10	0.25	0.32
Control Delay	16.5	4.8	54.6	11.1	28.6	30.3	10.0
Queue Delay	0.0	0.0	0.0	0.7	0.0	0.0	0.0
Total Delay	16.5	4.8	54.6	11.9	28.6	30.3	10.0
Queue Length 50th (ft)	216	0	~130	~636	9	~21	9
Queue Length 95th (ft)	280	72	m#174	#750	24	25	50
Internal Link Dist (ft)	242			160		206	
Turn Bay Length (ft)							
Base Capacity (vph)	2320	977	510	2503	398	80	453
Starvation Cap Reductn	0	0	0	51	0	0	0
Spillback Cap Reductn	29	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.63	1.00	0.94	0.05	0.25	0.28

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	99	1030	2718	371	374	432
v/c Ratio	0.68	0.48	0.87	0.83	0.83	0.27
Control Delay	52.0	4.7	22.3	43.9	44.3	0.4
Queue Delay	0.0	1.6	0.6	7.1	7.5	0.0
Total Delay	52.0	6.3	22.9	51.0	51.9	0.4
Queue Length 50th (ft)	51	26	333	172	174	0
Queue Length 95th (ft)	m75	33	#407	#322	#325	0
Internal Link Dist (ft)		160	272		743	
Turn Bay Length (ft)						
Base Capacity (vph)	146	2137	3113	449	450	1583
Starvation Cap Reductn	0	875	0	0	0	0
Spillback Cap Reductn	0	0	126	49	49	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.82	0.91	0.93	0.93	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	526	281	148	548	15	189	20	184	14	22	9
Future Volume (veh/h)	8	526	281	148	548	15	189	20	184	14	22	9
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	9	572	305	161	596	16	205	22	200	15	24	10
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	20	743	631	231	976	830	262	18	437	62	84	21
Arrive On Green	0.01	0.40	0.40	0.09	0.35	0.35	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	624	67	1583	0	302	78
Grp Volume(v), veh/h	9	572	305	161	596	16	227	0	200	49	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	691	0	1583	380	0	0
Q Serve(g_s), s	0.4	20.3	10.9	6.7	20.1	0.5	0.0	0.0	8.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.4	20.3	10.9	6.7	20.1	0.5	21.0	0.0	8.0	21.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.90		1.00	0.31		0.20
Lane Grp Cap(c), veh/h	20	743	631	231	976	830	281	0	437	167	0	0
V/C Ratio(X)	0.45	0.77	0.48	0.70	0.61	0.02	0.81	0.00	0.46	0.29	0.00	0.00
Avail Cap(c_a), veh/h	117	743	631	243	976	830	281	0	437	167	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	37.3	19.8	17.0	33.2	18.2	11.9	29.2	0.0	22.8	22.3	0.0	0.0
Incr Delay (d2), s/veh	14.6	7.6	2.6	7.4	2.6	0.0	15.9	0.0	0.7	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	11.9	5.2	3.8	11.1	0.2	6.0	0.0	3.5	0.8	0.0	0.0
LnGrp Delay(d),s/veh	52.0	27.4	19.7	40.6	20.9	11.9	45.1	0.0	23.5	23.2	0.0	0.0
LnGrp LOS	D	C	B	D	C	B	D		C	C		
Approach Vol, veh/h		886			773			427			49	
Approach Delay, s/veh		25.0			24.8			35.0			23.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		25.6	15.0	35.4		25.6	5.5	44.9
Change Period (Y+Rc), s		4.6	5.1	* 5.1		4.6	4.6	5.1
Max Green Setting (Gmax), s		21.0	10.4	* 30		21.0	5.0	35.7
Max Q Clear Time (g_c+I1), s		23.0	8.7	22.3		23.0	2.4	22.1
Green Ext Time (p_c), s		0.0	0.2	3.1		0.0	0.0	3.9

Intersection Summary	
HCM 2010 Ctrl Delay	26.9
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	198	460	50	395	7	252	26	19	3	19	69
Future Volume (veh/h)	38	198	460	50	395	7	252	26	19	3	19	69
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	41	215	500	54	429	8	274	28	21	3	21	75
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	831	706	79	757	644	90	0	506	53	275	506
Arrive On Green	0.13	0.74	0.74	0.04	0.41	0.41	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	0	0	1583	0	861	1583
Grp Volume(v), veh/h	41	215	500	54	429	8	302	0	21	24	0	75
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	0	0	1583	861	0	1583
Q Serve(g_s), s	1.6	2.8	13.0	2.3	13.5	0.2	0.0	0.0	0.7	0.0	0.0	2.6
Cycle Q Clear(g_c), s	1.6	2.8	13.0	2.3	13.5	0.2	24.3	0.0	0.7	24.3	0.0	2.6
Prop In Lane	1.00		1.00	1.00		1.00	0.91		1.00	0.12		1.00
Lane Grp Cap(c), veh/h	138	831	706	79	757	644	90	0	506	329	0	506
V/C Ratio(X)	0.30	0.26	0.71	0.68	0.57	0.01	3.34	0.00	0.04	0.07	0.00	0.15
Avail Cap(c_a), veh/h	149	831	706	154	757	644	90	0	506	329	0	506
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.76	0.76	0.76	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.2	5.7	7.0	35.8	17.4	13.4	38.0	0.0	17.8	18.9	0.0	18.5
Incr Delay (d2), s/veh	0.9	0.6	4.5	9.8	3.1	0.0	1081.9	0.0	0.0	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.5	6.3	1.3	7.6	0.1	29.0	0.0	0.3	0.4	0.0	1.1
LnGrp Delay(d),s/veh	32.1	6.3	11.6	45.5	20.4	13.5	1119.9	0.0	17.9	19.0	0.0	18.6
LnGrp LOS	C	A	B	D	C	B	F		B	B		B
Approach Vol, veh/h		756			491			323			99	
Approach Delay, s/veh		11.2			23.1			1048.3			18.7	
Approach LOS		B			C			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		29.0	8.0	39.0		29.0	11.0	36.0
Change Period (Y+Rc), s		* 4.7	4.6	5.1		* 4.7	5.1	* 5.1
Max Green Setting (Gmax), s		* 24	6.6	30.7		* 24	6.4	* 31
Max Q Clear Time (g_c+I1), s		26.3	4.3	15.0		26.3	3.6	15.5
Green Ext Time (p_c), s		0.0	0.0	3.0		0.0	0.8	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	215.8
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	7.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	297	103	1	442	106
Future Vol, veh/h	14	297	103	1	442	106
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	323	112	1	480	115

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1188	112	0	0	113	0
Stage 1	112	-	-	-	-	-
Stage 2	1076	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	208	941	-	-	1476	-
Stage 1	913	-	-	-	-	-
Stage 2	327	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	136	941	-	-	1476	-
Mov Cap-2 Maneuver	136	-	-	-	-	-
Stage 1	913	-	-	-	-	-
Stage 2	214	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	6.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	985	1476	-
HCM Lane V/C Ratio	-	-	0.343	0.325	-
HCM Control Delay (s)	-	-	10.6	8.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.5	1.4	-

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	141	50	152	197	301	233
Future Vol, veh/h	141	50	152	197	301	233
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	Free
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	153	54	165	214	327	253

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	872	-	327	0	-	0
Stage 1	327	-	-	-	-	-
Stage 2	545	-	-	-	-	-
Critical Hdwy	6.42	-	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	2.218	-	-	-
Pot Cap-1 Maneuver	321	0	1233	-	-	0
Stage 1	731	0	-	-	-	0
Stage 2	581	0	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	272	-	1233	-	-	-
Mov Cap-2 Maneuver	272	-	-	-	-	-
Stage 1	731	-	-	-	-	-
Stage 2	493	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	34	3.6	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	1233	-	272	-	-
HCM Lane V/C Ratio	0.134	-	0.563	-	-
HCM Control Delay (s)	8.4	0	34	0	-
HCM Lane LOS	A	A	D	A	-
HCM 95th %tile Q(veh)	0.5	-	3.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	9	572	305	161	596	16	227	200	49
v/c Ratio	0.07	0.68	0.35	0.67	0.52	0.02	0.76	0.39	0.13
Control Delay	34.6	23.3	3.3	37.7	7.4	0.1	43.5	6.0	18.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.6	23.3	3.3	37.7	7.4	0.1	43.5	6.0	18.9
Queue Length 50th (ft)	4	211	0	66	44	0	99	0	14
Queue Length 95th (ft)	18	#367	45	m#134	243	m0	167	46	38
Internal Link Dist (ft)		842			1019		447		1579
Turn Bay Length (ft)	200		200	200		200		200	
Base Capacity (vph)	125	836	878	242	1157	1016	365	582	451
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.68	0.35	0.67	0.52	0.02	0.62	0.34	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	41	215	500	54	429	8	302	21	24	75
v/c Ratio	0.28	0.23	0.48	0.35	0.45	0.01	0.82	0.04	0.05	0.14
Control Delay	28.2	9.7	2.2	39.4	16.3	0.0	43.8	0.1	18.7	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.2	9.7	2.2	39.4	16.3	0.0	43.8	0.1	18.7	0.5
Queue Length 50th (ft)	16	27	0	24	143	0	129	0	8	0
Queue Length 95th (ft)	m28	m71	38	58	239	0	#232	0	24	0
Internal Link Dist (ft)		1019			822		448		1634	
Turn Bay Length (ft)	200		200	200		200		100		
Base Capacity (vph)	149	944	1049	158	953	857	433	621	573	621
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.23	0.48	0.34	0.45	0.01	0.70	0.03	0.04	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Intersection	
Int Delay, s/veh	9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	282	19	62	825	31	50
Future Vol, veh/h	282	19	62	825	31	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	307	21	67	897	34	54

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	189	67	0	-	67	0
Stage 1	67	-	-	-	-	-
Stage 2	122	-	-	-	-	-
Critical Hdwy	7.12	6.22	-	-	4.12	-
Critical Hdwy Stg 1	6.12	-	-	-	-	-
Critical Hdwy Stg 2	6.12	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	771	997	-	0	1535	-
Stage 1	943	-	-	0	-	-
Stage 2	882	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	757	997	-	-	1535	-
Mov Cap-2 Maneuver	757	-	-	-	-	-
Stage 1	943	-	-	-	-	-
Stage 2	862	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.5	0	2.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	SBL	SBT
Capacity (veh/h)	-	808	1535	-
HCM Lane V/C Ratio	-	0.405	0.022	-
HCM Control Delay (s)	-	12.5	7.4	0
HCM Lane LOS	-	B	A	A
HCM 95th %tile Q(veh)	-	2	0.1	-

Intersection	
Int Delay, s/veh	38.9

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	511	2	230	451	95	236
Future Vol, veh/h	511	2	230	451	95	236
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	555	2	250	490	103	257

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	558	0	1547	557
Stage 1	-	-	-	-	557	-
Stage 2	-	-	-	-	990	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1013	-	126	530
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	360	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1013	-	~ 83	530
Mov Cap-2 Maneuver	-	-	-	-	~ 83	-
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	238	-

Approach	SE	NW	NE
HCM Control Delay, s	0	3.3	172.6
HCM LOS			F

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	289	1013	-	-	-
HCM Lane V/C Ratio	1.245	0.247	-	-	-
HCM Control Delay (s)	172.6	9.7	0	-	-
HCM Lane LOS	F	A	A	-	-
HCM 95th %tile Q(veh)	16.9	1	-	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	533	560	10	22	542	275	5	15	64	49	13	253
Future Volume (veh/h)	533	560	10	22	542	275	5	15	64	49	13	253
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	579	609	11	24	589	0	5	16	70	53	14	275
Adj No. of Lanes	1	1	0	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	606	1245	22	80	727	618	37	91	236	54	8	236
Arrive On Green	0.34	0.68	0.68	0.09	0.78	0.00	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1774	1824	33	1774	1863	1583	0	608	1583	0	55	1583
Grp Volume(v), veh/h	579	0	620	24	589	0	21	0	70	67	0	275
Grp Sat Flow(s),veh/h/ln	1774	0	1857	1774	1863	1583	608	0	1583	55	0	1583
Q Serve(g_s), s	38.3	0.0	19.1	1.5	22.7	0.0	0.0	0.0	4.7	0.0	0.0	17.9
Cycle Q Clear(g_c), s	38.3	0.0	19.1	1.5	22.7	0.0	17.9	0.0	4.7	17.9	0.0	17.9
Prop In Lane	1.00		0.02	1.00		1.00	0.24		1.00	0.79		1.00
Lane Grp Cap(c), veh/h	606	0	1267	80	727	618	128	0	236	62	0	236
V/C Ratio(X)	0.96	0.00	0.49	0.30	0.81	0.00	0.16	0.00	0.30	1.08	0.00	1.16
Avail Cap(c_a), veh/h	642	0	1267	87	727	618	128	0	236	62	0	236
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.93	0.93	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.6	0.0	9.1	52.8	10.5	0.0	44.5	0.0	45.4	57.7	0.0	51.0
Incr Delay (d2), s/veh	24.4	0.0	1.4	1.9	9.0	0.0	0.6	0.0	0.7	138.8	0.0	110.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.8	0.0	10.1	0.8	12.9	0.0	0.6	0.0	2.1	4.4	0.0	15.0
LnGrp Delay(d),s/veh	63.0	0.0	10.4	54.8	19.5	0.0	45.1	0.0	46.1	198.3	0.0	161.2
LnGrp LOS	E		B	D	B		D		D	F		F
Approach Vol, veh/h		1199			613			91			342	
Approach Delay, s/veh		35.8			20.9			45.9			168.5	
Approach LOS		D			C			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		22.5	10.5	87.0		22.5	45.6	51.9
Change Period (Y+Rc), s		4.6	5.1	* 5.1		4.6	4.6	5.1
Max Green Setting (Gmax), s		17.9	5.9	* 82		17.9	43.4	44.4
Max Q Clear Time (g_c+I1), s		19.9	3.5	21.1		19.9	40.3	24.7
Green Ext Time (p_c), s		0.0	0.9	5.0		0.0	0.7	4.0

Intersection Summary	
HCM 2010 Ctrl Delay	52.4
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	535	120	22	38	201	59	23	84	37	73	56	624
Future Volume (veh/h)	535	120	22	38	201	59	23	84	37	73	56	624
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	582	130	24	41	218	64	25	91	40	79	61	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	797	154	28	172	866	240	94	153	61	204	114	0
Arrive On Green	1.00	1.00	1.00	0.70	0.70	0.70	0.14	0.14	0.14	0.14	0.14	0.00
Sat Flow, veh/h	983	220	41	149	1235	342	176	1123	448	813	841	0
Grp Volume(v), veh/h	736	0	0	323	0	0	156	0	0	140	0	0
Grp Sat Flow(s),veh/h/ln	1244	0	0	1726	0	0	1747	0	0	1654	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	3.9	0.0	0.0	4.9	0.0	0.0	4.4	0.0	0.0
Prop In Lane	0.79		0.03	0.13		0.20	0.16		0.26	0.56		0.00
Lane Grp Cap(c), veh/h	979	0	0	1277	0	0	307	0	0	319	0	0
V/C Ratio(X)	0.75	0.00	0.00	0.25	0.00	0.00	0.51	0.00	0.00	0.44	0.00	0.00
Avail Cap(c_a), veh/h	979	0	0	1277	0	0	583	0	0	559	0	0
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	3.3	0.0	0.0	24.5	0.0	0.0	24.3	0.0	0.0
Incr Delay (d2), s/veh	4.9	0.0	0.0	0.5	0.0	0.0	1.3	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	2.1	0.0	0.0	2.5	0.0	0.0	2.3	0.0	0.0
LnGrp Delay(d),s/veh	4.9	0.0	0.0	3.7	0.0	0.0	25.8	0.0	0.0	25.2	0.0	0.0
LnGrp LOS	A			A			C			C		
Approach Vol, veh/h		736			323			156			140	
Approach Delay, s/veh		4.9			3.7			25.8			25.2	
Approach LOS		A			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		12.9		47.1		12.9		47.1
Change Period (Y+Rc), s		* 4.7		5.1		* 4.7		5.1
Max Green Setting (Gmax), s		* 18		32.2		* 18		32.2
Max Q Clear Time (g_c+I1), s		6.9		2.0		6.4		5.9
Green Ext Time (p_c), s		1.3		10.3		1.3		9.8

Intersection Summary	
HCM 2010 Ctrl Delay	9.1
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

22: West Frontage Rd (Morada) & Morada Lane

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	579	620	24	589	299	21	70	67	275
v/c Ratio	0.91	0.43	0.28	0.74	0.40	0.13	0.29	0.51	0.69
Control Delay	55.4	6.9	56.6	31.1	13.7	49.5	5.8	64.2	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.4	6.9	56.6	31.1	13.7	49.5	5.8	64.2	15.4
Queue Length 50th (ft)	408	162	19	320	82	15	0	50	0
Queue Length 95th (ft)	#625	276	m25	m410	m99	39	17	94	80
Internal Link Dist (ft)		310		787		719		318	
Turn Bay Length (ft)	135		70		100				190
Base Capacity (vph)	665	1436	87	794	744	259	327	210	470
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.43	0.28	0.74	0.40	0.08	0.21	0.32	0.59

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	736	323	156	818
v/c Ratio	1.24	0.37	0.36	1.07
Control Delay	139.1	8.7	16.1	68.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	139.1	8.7	16.1	68.1
Queue Length 50th (ft)	~426	54	35	~220
Queue Length 95th (ft)	#929	101	79	#418
Internal Link Dist (ft)	787	769	775	294
Turn Bay Length (ft)				
Base Capacity (vph)	594	864	430	763
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.24	0.37	0.36	1.07

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1569	1079	167	3075	0	0	0	0	108	0	234
Future Volume (veh/h)	0	1569	1079	167	3075	0	0	0	0	108	0	234
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	1590	1250	182	3342	0				117	0	0
Adj No. of Lanes	0	2	2	2	2	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2269	1929	745	3073	0				178	0	79
Arrive On Green	0.00	0.61	0.61	0.43	1.00	0.00				0.05	0.00	0.00
Sat Flow, veh/h	0	3725	3167	3442	3632	0				3548	0	1583
Grp Volume(v), veh/h	0	1590	1250	182	3342	0				117	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	34.9	30.6	4.0	104.2	0.0				3.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	34.9	30.6	4.0	104.2	0.0				3.9	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2269	1929	745	3073	0				178	0	79
V/C Ratio(X)	0.00	0.70	0.65	0.24	1.09	0.00				0.66	0.00	0.00
Avail Cap(c_a), veh/h	0	2269	1929	745	3073	0				571	0	255
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.11	0.11	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	16.0	15.1	27.8	0.0	0.0				56.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.8	1.7	0.0	40.2	0.0				4.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	18.5	13.6	1.9	17.2	0.0				2.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	17.8	16.8	27.8	40.2	0.0				60.1	0.0	0.0
LnGrp LOS		B	B	C	F					E		
Approach Vol, veh/h		2840			3524						117	
Approach Delay, s/veh		17.4			39.6						60.1	
Approach LOS		B			D						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			31.1	78.2		10.7		109.3
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			13.1	* 73		19.3		90.9
Max Q Clear Time (g_c+I1), s			6.0	36.9		5.9		106.2
Green Ext Time (p_c), s			6.7	27.1		0.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	30.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	1746	0	0	2028	70	1229	0	666	0	0	0
Future Volume (veh/h)	137	1746	0	0	2028	70	1229	0	666	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	149	1898	0	0	2204	76	1336	0	0			
Adj No. of Lanes	1	2	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	175	1867	0	0	2498	86	1386	0	619			
Arrive On Green	0.20	1.00	0.00	0.00	0.39	0.39	0.39	0.00	0.00			
Sat Flow, veh/h	1774	3632	0	0	6670	221	3548	0	1583			
Grp Volume(v), veh/h	149	1898	0	0	1653	627	1336	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1602	1824	1774	0	1583			
Q Serve(g_s), s	9.7	0.0	0.0	0.0	38.4	38.4	44.2	0.0	0.0			
Cycle Q Clear(g_c), s	9.7	0.0	0.0	0.0	38.4	38.4	44.2	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.12	1.00		1.00			
Lane Grp Cap(c), veh/h	175	1867	0	0	1874	711	1386	0	619			
V/C Ratio(X)	0.85	1.02	0.00	0.00	0.88	0.88	0.96	0.00	0.00			
Avail Cap(c_a), veh/h	271	1867	0	0	1874	711	1399	0	624			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.56	0.56	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	47.3	0.0	0.0	0.0	34.0	34.1	35.7	0.0	0.0			
Incr Delay (d2), s/veh	8.7	19.9	0.0	0.0	6.4	14.9	16.1	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.1	5.2	0.0	0.0	18.1	22.3	24.6	0.0	0.0			
LnGrp Delay(d),s/veh	56.0	19.9	0.0	0.0	40.5	48.9	51.9	0.0	0.0			
LnGrp LOS	E	F			D	D	D					
Approach Vol, veh/h		2047			2280			1336				
Approach Delay, s/veh		22.5			42.8			51.9				
Approach LOS		C			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		51.6		68.4			16.5	51.9
Change Period (Y+Rc), s		* 4.7		5.1			* 4.7	5.1
Max Green Setting (Gmax), s		* 47		62.9			* 18	39.9
Max Q Clear Time (g_c+I1), s		46.2		2.0			11.7	40.4
Green Ext Time (p_c), s		0.7		57.8			0.2	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	37.6
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2221	657	182	3342	58	59	254
v/c Ratio	0.77	0.60	0.49	1.25	0.25	0.27	0.82
Control Delay	18.7	3.4	45.2	129.3	47.2	47.5	58.0
Queue Delay	0.1	0.0	0.0	0.4	9.7	110.6	0.0
Total Delay	18.8	3.4	45.2	129.8	56.8	158.2	58.0
Queue Length 50th (ft)	441	0	69	~1710	42	42	145
Queue Length 95th (ft)	509	52	m70	m#1727	84	85	#284
Internal Link Dist (ft)	242			160		206	
Turn Bay Length (ft)							
Base Capacity (vph)	2870	1086	374	2680	270	216	309
Starvation Cap Reductn	0	0	0	488	0	0	0
Spillback Cap Reductn	69	0	0	0	180	180	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.60	0.49	1.52	0.64	1.64	0.82

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	149	1898	2280	668	668	724
v/c Ratio	0.69	1.02	0.99	1.01	1.01	0.46
Control Delay	79.9	41.5	54.1	74.0	74.0	1.0
Queue Delay	2.4	1.5	0.0	32.1	32.1	0.0
Total Delay	82.3	43.0	54.1	106.1	106.1	1.0
Queue Length 50th (ft)	115	~826	508	~548	~548	0
Queue Length 95th (ft)	m151	#947	#646	#813	#813	0
Internal Link Dist (ft)		160	272		743	
Turn Bay Length (ft)						
Base Capacity (vph)	269	1855	2312	662	662	1583
Starvation Cap Reductn	48	8	0	0	0	0
Spillback Cap Reductn	0	0	0	75	75	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	1.03	0.99	1.14	1.14	0.46

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	552	364	114	750	22	244	16	157	23	43	12
Future Volume (veh/h)	4	552	364	114	750	22	244	16	157	23	43	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	4	600	396	124	815	24	265	17	171	25	47	13
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	9	753	640	348	1122	953	285	12	475	67	103	19
Arrive On Green	0.01	0.40	0.40	0.06	0.20	0.20	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	617	40	1583	0	342	62
Grp Volume(v), veh/h	4	600	396	124	815	24	282	0	171	85	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	657	0	1583	404	0	0
Q Serve(g_s), s	0.2	19.8	13.9	4.7	28.7	0.9	0.0	0.0	5.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	19.8	13.9	4.7	28.7	0.9	21.0	0.0	5.9	21.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.94		1.00	0.29		0.15
Lane Grp Cap(c), veh/h	9	753	640	348	1122	953	297	0	475	188	0	0
V/C Ratio(X)	0.42	0.80	0.62	0.36	0.73	0.03	0.95	0.00	0.36	0.45	0.00	0.00
Avail Cap(c_a), veh/h	127	753	640	348	1122	953	297	0	475	188	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.85	0.85	0.85	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.7	18.3	16.6	28.5	22.7	11.5	27.7	0.0	19.2	19.9	0.0	0.0
Incr Delay (d2), s/veh	27.1	8.6	4.4	0.5	3.5	0.0	39.0	0.0	0.5	1.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	12.0	6.8	2.3	15.9	0.4	8.6	0.0	2.6	1.3	0.0	0.0
LnGrp Delay(d),s/veh	61.8	26.9	21.0	29.0	26.2	11.5	66.6	0.0	19.7	21.6	0.0	0.0
LnGrp LOS	E	C	C	C	C	B	E		B	C		
Approach Vol, veh/h		1000			963			453			85	
Approach Delay, s/veh		24.7			26.2			48.9			21.6	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		25.6	19.0	33.4		25.6	5.0	47.4
Change Period (Y+Rc), s		4.6	5.1	* 5.1		4.6	4.6	5.1
Max Green Setting (Gmax), s		21.0	6.4	* 28		21.0	5.0	29.7
Max Q Clear Time (g_c+I1), s		23.0	6.7	21.8		23.0	2.2	30.7
Green Ext Time (p_c), s		0.0	0.0	3.0		0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	29.6
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	376	333	41	344	7	507	42	70	8	22	68
Future Volume (veh/h)	36	376	333	41	344	7	507	42	70	8	22	68
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	39	409	362	45	374	8	551	46	76	9	24	74
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	535	455	114	597	508	99	0	690	65	141	690
Arrive On Green	0.08	0.57	0.57	0.06	0.32	0.32	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	0	0	1583	0	323	1583
Grp Volume(v), veh/h	39	409	362	45	374	8	597	0	76	33	0	74
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	0	0	1583	323	0	1583
Q Serve(g_s), s	1.5	11.7	12.6	1.7	11.9	0.2	0.0	0.0	2.0	0.0	0.0	1.9
Cycle Q Clear(g_c), s	1.5	11.7	12.6	1.7	11.9	0.2	30.5	0.0	2.0	30.5	0.0	1.9
Prop In Lane	1.00		1.00	1.00		1.00	0.92		1.00	0.27		1.00
Lane Grp Cap(c), veh/h	67	535	455	114	597	508	99	0	690	206	0	690
V/C Ratio(X)	0.58	0.76	0.80	0.39	0.63	0.02	6.04	0.00	0.11	0.16	0.00	0.11
Avail Cap(c_a), veh/h	127	535	455	127	597	508	99	0	690	206	0	690
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.73	0.73	0.73	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.8	13.1	13.3	31.4	20.2	16.2	35.0	0.0	11.7	15.9	0.0	11.7
Incr Delay (d2), s/veh	5.7	7.5	10.2	2.2	4.9	0.1	2288.1	0.0	0.1	0.4	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	6.8	6.5	0.9	6.9	0.1	64.8	0.0	0.9	0.4	0.0	0.8
LnGrp Delay(d),s/veh	37.5	20.6	23.5	33.6	25.1	16.3	2323.1	0.0	11.8	16.2	0.0	11.8
LnGrp LOS	D	C	C	C	C	B	F		B	B		B
Approach Vol, veh/h		810			427			673			107	
Approach Delay, s/veh		22.7			25.9			2062.1			13.1	
Approach LOS		C			C			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		35.2	9.6	25.2		35.2	7.3	27.5
Change Period (Y+Rc), s		* 4.7	5.1	* 5.1		* 4.7	4.6	5.1
Max Green Setting (Gmax), s		* 31	5.0	* 20		* 31	5.0	20.1
Max Q Clear Time (g_c+I1), s		32.5	3.7	14.6		32.5	3.5	13.9
Green Ext Time (p_c), s		0.0	0.0	2.0		0.0	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	703.3
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	7.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	335	112	7	363	143
Future Vol, veh/h	26	335	112	7	363	143
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	364	122	8	395	155

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1071	126	0	0	129	0
Stage 1	126	-	-	-	-	-
Stage 2	945	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	244	924	-	-	1457	-
Stage 1	900	-	-	-	-	-
Stage 2	378	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	172	924	-	-	1457	-
Mov Cap-2 Maneuver	172	-	-	-	-	-
Stage 1	900	-	-	-	-	-
Stage 2	266	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	996	1457	-
HCM Lane V/C Ratio	-	-	0.394	0.271	-
HCM Control Delay (s)	-	-	10.9	8.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.9	1.1	-

Intersection	
Int Delay, s/veh	26.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	376	50	60	234	204	188
Future Vol, veh/h	376	50	60	234	204	188
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	Free
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	409	54	65	254	222	204

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	607	-	222	0	-	0
Stage 1	222	-	-	-	-	-
Stage 2	385	-	-	-	-	-
Critical Hdwy	6.42	-	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	2.218	-	-	-
Pot Cap-1 Maneuver	460	0	1347	-	-	0
Stage 1	815	0	-	-	-	0
Stage 2	688	0	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	434	-	1347	-	-	-
Mov Cap-2 Maneuver	434	-	-	-	-	-
Stage 1	815	-	-	-	-	-
Stage 2	649	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	60.9	1.6	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	1347	-	434	-	-
HCM Lane V/C Ratio	0.048	-	0.942	-	-
HCM Control Delay (s)	7.8	0	60.9	0	-
HCM Lane LOS	A	A	F	A	-
HCM 95th %tile Q(veh)	0.2	-	10.9	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	4	600	396	124	815	24	282	171	85
v/c Ratio	0.03	0.72	0.43	0.77	0.76	0.03	0.79	0.31	0.20
Control Delay	30.8	23.6	3.3	50.1	16.6	0.0	40.6	4.6	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.8	23.6	3.3	50.1	16.6	0.0	40.6	4.6	17.8
Queue Length 50th (ft)	2	211	0	51	224	0	109	0	23
Queue Length 95th (ft)	10	#388	48	m#70	m#463	m0	#206	35	54
Internal Link Dist (ft)		842			1019		447		1579
Turn Bay Length (ft)	200		200	200		200		200	
Base Capacity (vph)	134	829	924	161	1071	951	414	603	482
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.72	0.43	0.77	0.76	0.03	0.68	0.28	0.18

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	39	409	362	45	374	8	597	76	33	74
v/c Ratio	0.31	0.64	0.46	0.36	0.59	0.01	1.03	0.10	0.05	0.09
Control Delay	41.4	16.9	2.6	39.3	25.3	0.0	67.2	0.2	11.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.4	16.9	2.6	39.3	25.3	0.0	67.2	0.2	11.7	0.2
Queue Length 50th (ft)	13	78	0	19	143	0	~263	0	8	0
Queue Length 95th (ft)	m25	m#264	m0	49	#237	0	#464	0	23	0
Internal Link Dist (ft)		1019			822		448		1634	
Turn Bay Length (ft)	200		200	200		200		100		
Base Capacity (vph)	126	636	779	126	636	606	582	793	715	793
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.64	0.46	0.36	0.59	0.01	1.03	0.10	0.05	0.09

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Intersection	
Int Delay, s/veh	10.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	372	16	73	308	30	101
Future Vol, veh/h	372	16	73	308	30	101
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	404	17	79	335	33	110

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	254	79	0	-	79	0
Stage 1	79	-	-	-	-	-
Stage 2	175	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	735	981	-	0	1519	-
Stage 1	944	-	-	0	-	-
Stage 2	855	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	718	981	-	-	1519	-
Mov Cap-2 Maneuver	718	-	-	-	-	-
Stage 1	944	-	-	-	-	-
Stage 2	835	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.1	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	WBLn1	SBL	SBT
Capacity (veh/h)	-	741	1519	-
HCM Lane V/C Ratio	-	0.569	0.021	-
HCM Control Delay (s)	-	16.1	7.4	0
HCM Lane LOS	-	C	A	A
HCM 95th %tile Q(veh)	-	3.6	0.1	-

Intersection	
Int Delay, s/veh	14.4

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	262	13	190	223	120	579
Future Vol, veh/h	262	13	190	223	120	579
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	285	14	207	242	130	629

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	299	0	947	292
Stage 1	-	-	-	-	292	-
Stage 2	-	-	-	-	655	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1262	-	290	747
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	517	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1262	-	235	747
Mov Cap-2 Maneuver	-	-	-	-	235	-
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	419	-

Approach	SE	NW	NE
HCM Control Delay, s	0	3.9	26.2
HCM LOS			D

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	902	1262	-	-	-
HCM Lane V/C Ratio	0.842	0.164	-	-	-
HCM Control Delay (s)	26.2	8.4	0	-	-
HCM Lane LOS	D	A	A	-	-
HCM 95th %tile Q(veh)	10.2	0.6	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	248	389	19	15	670	116	13	15	41	96	31	349
Future Volume (veh/h)	248	389	19	15	670	116	13	15	41	96	31	349
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	270	423	21	16	728	0	14	16	45	104	34	379
Adj No. of Lanes	1	1	0	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	299	1159	58	71	994	845	44	35	282	53	8	282
Arrive On Green	0.17	0.66	0.66	0.08	1.00	0.00	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	1760	87	1774	1863	1583	0	199	1583	0	43	1583
Grp Volume(v), veh/h	270	0	444	16	728	0	30	0	45	138	0	379
Grp Sat Flow(s),veh/h/ln	1774	0	1847	1774	1863	1583	199	0	1583	43	0	1583
Q Serve(g_s), s	17.9	0.0	13.0	1.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0	21.4
Cycle Q Clear(g_c), s	17.9	0.0	13.0	1.0	0.0	0.0	21.4	0.0	2.9	21.4	0.0	21.4
Prop In Lane	1.00		0.05	1.00		1.00	0.47		1.00	0.75		1.00
Lane Grp Cap(c), veh/h	299	0	1216	71	994	845	79	0	282	60	0	282
V/C Ratio(X)	0.90	0.00	0.37	0.23	0.73	0.00	0.38	0.00	0.16	2.29	0.00	1.34
Avail Cap(c_a), veh/h	361	0	1216	78	994	845	79	0	282	60	0	282
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.99	0.99	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.9	0.0	9.2	53.5	0.0	0.0	42.7	0.0	41.7	57.3	0.0	49.3
Incr Delay (d2), s/veh	22.3	0.0	0.8	1.6	4.7	0.0	2.9	0.0	0.3	630.0	0.0	175.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.6	0.0	6.8	0.5	1.3	0.0	0.9	0.0	1.3	12.5	0.0	23.2
LnGrp Delay(d),s/veh	71.2	0.0	10.1	55.0	4.7	0.0	45.6	0.0	42.0	687.3	0.0	225.2
LnGrp LOS	E		B	E	A		D		D	F		F
Approach Vol, veh/h		714			744			75			517	
Approach Delay, s/veh		33.2			5.8			43.4			348.5	
Approach LOS		C			A			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		26.0	9.9	84.1		26.0	24.8	69.2
Change Period (Y+Rc), s		4.6	5.1	* 5.1		4.6	4.6	5.1
Max Green Setting (Gmax), s		21.4	5.3	* 79		21.4	24.4	59.9
Max Q Clear Time (g_c+I1), s		23.4	3.0	15.0		23.4	19.9	2.0
Green Ext Time (p_c), s		0.0	0.0	3.2		0.0	0.3	6.4

Intersection Summary	
HCM 2010 Ctrl Delay	103.2
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	327	119	53	9	104	39	30	48	27	101	60	677
Future Volume (veh/h)	327	119	53	9	104	39	30	48	27	101	60	677
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	355	129	58	10	113	42	33	52	29	110	65	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	706	247	102	96	866	307	127	145	67	239	101	0
Arrive On Green	0.23	0.23	0.23	0.69	0.69	0.69	0.15	0.15	0.15	0.15	0.15	0.00
Sat Flow, veh/h	884	359	149	48	1262	447	332	965	443	936	669	0
Grp Volume(v), veh/h	542	0	0	165	0	0	114	0	0	175	0	0
Grp Sat Flow(s),veh/h/ln	1392	0	0	1757	0	0	1740	0	0	1605	0	0
Q Serve(g_s), s	18.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0
Cycle Q Clear(g_c), s	20.4	0.0	0.0	1.9	0.0	0.0	3.5	0.0	0.0	6.0	0.0	0.0
Prop In Lane	0.65		0.11	0.06		0.25	0.29		0.25	0.63		0.00
Lane Grp Cap(c), veh/h	1054	0	0	1269	0	0	339	0	0	339	0	0
V/C Ratio(X)	0.51	0.00	0.00	0.13	0.00	0.00	0.34	0.00	0.00	0.52	0.00	0.00
Avail Cap(c_a), veh/h	1054	0	0	1269	0	0	579	0	0	560	0	0
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.9	0.0	0.0	3.3	0.0	0.0	23.1	0.0	0.0	24.0	0.0	0.0
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.2	0.0	0.0	0.6	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	0.0	0.0	1.0	0.0	0.0	1.8	0.0	0.0	2.8	0.0	0.0
LnGrp Delay(d),s/veh	16.6	0.0	0.0	3.5	0.0	0.0	23.7	0.0	0.0	25.2	0.0	0.0
LnGrp LOS	B			A			C			C		
Approach Vol, veh/h		542			165			114			175	
Approach Delay, s/veh		16.6			3.5			23.7			25.2	
Approach LOS		B			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		13.7		46.3		13.7		46.3
Change Period (Y+Rc), s		* 4.7		5.1		* 4.7		5.1
Max Green Setting (Gmax), s		* 18		32.2		* 18		32.2
Max Q Clear Time (g_c+I1), s		5.5		22.4		8.0		3.9
Green Ext Time (p_c), s		1.3		3.4		1.2		5.5

Intersection Summary	
HCM 2010 Ctrl Delay	16.8
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

22: West Frontage Rd (Morada) & Morada Lane

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	270	444	16	728	126	30	45	138	379
v/c Ratio	0.83	0.32	0.21	0.70	0.14	0.14	0.14	0.70	0.69
Control Delay	68.4	7.0	51.2	17.6	6.0	44.4	1.0	66.9	11.6
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay	68.4	7.0	51.2	17.8	6.0	44.4	1.0	66.9	11.6
Queue Length 50th (ft)	200	86	13	352	27	20	0	102	0
Queue Length 95th (ft)	#316	199	m14	m308	m19	48	0	168	90
Internal Link Dist (ft)		310		787		719		318	
Turn Bay Length (ft)	135		70		100				190
Base Capacity (vph)	361	1381	78	1037	906	282	370	252	593
Starvation Cap Reductn	0	0	0	32	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.32	0.21	0.72	0.14	0.11	0.12	0.55	0.64

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	542	165	114	911
v/c Ratio	0.77	0.17	0.31	1.26
Control Delay	17.9	5.8	15.4	146.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	17.9	5.8	15.4	146.7
Queue Length 50th (ft)	224	20	23	~329
Queue Length 95th (ft)	222	45	60	#534
Internal Link Dist (ft)	787	769	775	294
Turn Bay Length (ft)				
Base Capacity (vph)	702	955	364	721
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.77	0.17	0.31	1.26

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2133	711	190	2275	0	0	0	0	127	0	490
Future Volume (veh/h)	0	2133	711	190	2275	0	0	0	0	127	0	490
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	2318	773	207	2473	0				138	0	0
Adj No. of Lanes	0	3	1	2	3	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2738	776	970	4214	0				222	0	99
Arrive On Green	0.00	0.49	0.49	0.56	1.00	0.00				0.06	0.00	0.00
Sat Flow, veh/h	0	5588	1583	3442	5253	0				3548	0	1583
Grp Volume(v), veh/h	0	2318	773	207	2473	0				138	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1695	0				1774	0	1583
Q Serve(g_s), s	0.0	32.5	43.8	2.7	0.0	0.0				3.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	32.5	43.8	2.7	0.0	0.0				3.4	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2738	776	970	4214	0				222	0	99
V/C Ratio(X)	0.00	0.85	1.00	0.21	0.59	0.00				0.62	0.00	0.00
Avail Cap(c_a), veh/h	0	2738	776	970	4214	0				997	0	445
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.24	0.24	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	20.0	22.9	14.7	0.0	0.0				41.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.5	31.4	0.0	0.1	0.0				2.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	17.4	25.7	1.3	0.1	0.0				1.8	0.0	0.0
LnGrp Delay(d),s/veh	0.0	23.5	54.3	14.7	0.1	0.0				44.0	0.0	0.0
LnGrp LOS		C	D	B	A					D		
Approach Vol, veh/h		3091			2680						138	
Approach Delay, s/veh		31.2			1.3						44.0	
Approach LOS		C			A						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			30.5	49.2		10.3		79.7
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			6.1	* 44		25.3		54.9
Max Q Clear Time (g_c+I1), s			4.7	45.8		5.4		2.0
Green Ext Time (p_c), s			1.1	0.0		0.4		39.5

Intersection Summary	
HCM 2010 Ctrl Delay	17.9
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	232	1793	0	0	1611	131	1041	0	569	0	0	0
Future Volume (veh/h)	232	1793	0	0	1611	131	1041	0	569	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	252	1949	0	0	1751	142	1132	0	0			
Adj No. of Lanes	1	3	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	274	2762	0	0	2048	166	1235	0	551			
Arrive On Green	0.31	1.00	0.00	0.00	0.34	0.34	0.35	0.00	0.00			
Sat Flow, veh/h	1774	5253	0	0	6349	494	3548	0	1583			
Grp Volume(v), veh/h	252	1949	0	0	1382	511	1132	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1695	0	0	1602	1776	1774	0	1583			
Q Serve(g_s), s	12.3	0.0	0.0	0.0	24.1	24.1	27.5	0.0	0.0			
Cycle Q Clear(g_c), s	12.3	0.0	0.0	0.0	24.1	24.1	27.5	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.28	1.00		1.00			
Lane Grp Cap(c), veh/h	274	2762	0	0	1617	597	1235	0	551			
V/C Ratio(X)	0.92	0.71	0.00	0.00	0.85	0.85	0.92	0.00	0.00			
Avail Cap(c_a), veh/h	274	2762	0	0	1617	597	1313	0	586			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	30.6	0.0	0.0	0.0	27.8	27.8	28.1	0.0	0.0			
Incr Delay (d2), s/veh	5.2	0.1	0.0	0.0	6.0	14.5	9.9	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.4	0.0	0.0	0.0	11.5	14.2	15.1	0.0	0.0			
LnGrp Delay(d),s/veh	35.7	0.1	0.0	0.0	33.8	42.3	38.0	0.0	0.0			
LnGrp LOS	D	A			C	D	D					
Approach Vol, veh/h		2201			1893			1132				
Approach Delay, s/veh		4.2			36.1			38.0				
Approach LOS		A			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		36.0		54.0			18.6	35.4
Change Period (Y+Rc), s		* 4.7		5.1			* 4.7	5.1
Max Green Setting (Gmax), s		* 33		46.9			* 14	28.3
Max Q Clear Time (g_c+I1), s		29.5		2.0			14.3	26.1
Green Ext Time (p_c), s		1.8		41.8			0.0	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	23.1
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2403	688	207	2473	69	69	533
v/c Ratio	1.02	0.68	0.89	0.80	0.17	0.18	1.05
Control Delay	48.8	5.0	56.6	10.5	25.7	25.8	82.6
Queue Delay	0.0	0.0	0.0	9.1	0.0	0.0	0.0
Total Delay	48.8	5.0	56.6	19.6	25.7	25.8	82.6
Queue Length 50th (ft)	~568	0	61	180	30	30	~295
Queue Length 95th (ft)	#672	66	m66	m197	65	65	#495
Internal Link Dist (ft)	1867			161		261	
Turn Bay Length (ft)							
Base Capacity (vph)	2347	1018	232	3101	472	378	507
Starvation Cap Reductn	0	0	0	627	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.68	0.89	1.00	0.15	0.18	1.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	252	1949	1893	566	566	618
v/c Ratio	0.92	0.74	0.94	0.91	0.91	0.97
Control Delay	73.2	10.7	41.0	48.5	48.5	55.1
Queue Delay	29.6	3.5	0.1	15.5	15.5	0.0
Total Delay	102.8	14.1	41.1	64.0	64.0	55.1
Queue Length 50th (ft)	0	131	300	316	316	304
Queue Length 95th (ft)	m0	m129	#383	#530	#530	#534
Internal Link Dist (ft)		161	3355		754	
Turn Bay Length (ft)						
Base Capacity (vph)	273	2649	2006	621	621	637
Starvation Cap Reductn	33	591	0	0	0	0
Spillback Cap Reductn	0	0	3	60	60	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.05	0.95	0.95	1.01	1.01	0.97

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1343	711	427	905	0	0	0	0	132	0	292
Future Volume (veh/h)	0	1343	711	427	905	0	0	0	0	132	0	292
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	1460	773	464	984	0				143	0	317
Adj No. of Lanes	0	3	1	1	2	0				0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2227	693	489	2689	0				249	0	391
Arrive On Green	0.00	0.88	0.88	0.37	1.00	0.00				0.14	0.00	0.14
Sat Flow, veh/h	0	5253	1583	1774	3632	0				1774	0	2787
Grp Volume(v), veh/h	0	1460	773	464	984	0				143	0	317
Grp Sat Flow(s),veh/h/ln	0	1695	1583	1774	1770	0				1774	0	1393
Q Serve(g_s), s	0.0	8.4	43.8	25.4	0.0	0.0				7.5	0.0	11.0
Cycle Q Clear(g_c), s	0.0	8.4	43.8	25.4	0.0	0.0				7.5	0.0	11.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2227	693	489	2689	0				249	0	391
V/C Ratio(X)	0.00	0.66	1.11	0.95	0.37	0.00				0.58	0.00	0.81
Avail Cap(c_a), veh/h	0	2227	693	504	2689	0				319	0	502
HCM Platoon Ratio	1.00	2.00	2.00	1.33	1.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.70	0.70	0.85	0.85	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	4.0	6.2	31.0	0.0	0.0				40.2	0.0	41.7
Incr Delay (d2), s/veh	0.0	1.1	65.5	24.5	0.3	0.0				2.1	0.0	7.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.7	29.2	15.7	0.1	0.0				3.8	0.0	4.6
LnGrp Delay(d),s/veh	0.0	5.1	71.7	55.5	0.3	0.0				42.3	0.0	49.4
LnGrp LOS		A	F	E	A					D		D
Approach Vol, veh/h		2233			1448						460	
Approach Delay, s/veh		28.1			18.0						47.2	
Approach LOS		C			B						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			32.2	49.2		18.6		81.4
Change Period (Y+Rc), s			4.6	5.4		4.6		5.4
Max Green Setting (Gmax), s			28.4	39.0		18.0		72.0
Max Q Clear Time (g_c+I1), s			27.4	45.8		13.0		2.0
Green Ext Time (p_c), s			0.2	0.0		1.0		50.2

Intersection Summary	
HCM 2010 Ctrl Delay	26.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	552	294	0	0	254	101	692	0	148	0	0	0
Future Volume (veh/h)	552	294	0	0	254	101	692	0	148	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	600	320	0	0	276	110	752	0	161			
Adj No. of Lanes	2	2	0	0	2	1	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	1332	2290	0	0	729	326	898	0	401			
Arrive On Green	0.13	0.21	0.00	0.00	0.07	0.07	0.25	0.00	0.25			
Sat Flow, veh/h	3442	3632	0	0	3632	1583	3548	0	1583			
Grp Volume(v), veh/h	600	320	0	0	276	110	752	0	161			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1583	1774	0	1583			
Q Serve(g_s), s	16.1	7.3	0.0	0.0	7.5	6.6	20.1	0.0	8.5			
Cycle Q Clear(g_c), s	16.1	7.3	0.0	0.0	7.5	6.6	20.1	0.0	8.5			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1332	2290	0	0	729	326	898	0	401			
V/C Ratio(X)	0.45	0.14	0.00	0.00	0.38	0.34	0.84	0.00	0.40			
Avail Cap(c_a), veh/h	1332	2290	0	0	729	326	1327	0	592			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.62	0.62	0.00	0.00	0.99	0.99	1.00	0.00	1.00			
Uniform Delay (d), s/veh	33.8	16.8	0.0	0.0	40.5	40.1	35.4	0.0	31.1			
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	1.5	2.8	3.2	0.0	0.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	7.7	3.6	0.0	0.0	3.8	3.2	10.2	0.0	3.8			
LnGrp Delay(d),s/veh	33.9	16.8	0.0	0.0	42.0	42.9	38.6	0.0	31.7			
LnGrp LOS	C	B			D	D	D		C			
Approach Vol, veh/h		920			386			913				
Approach Delay, s/veh		28.0			42.2			37.4				
Approach LOS		C			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		29.9		70.1			44.1	26.0
Change Period (Y+Rc), s		4.6		5.4			5.4	* 5.4
Max Green Setting (Gmax), s		37.4		52.6			27.4	* 21
Max Q Clear Time (g_c+I1), s		22.1		9.3			18.1	9.5
Green Ext Time (p_c), s		3.2		4.9			3.1	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	34.3
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1460	773	464	984	143	317
v/c Ratio	0.72	0.83	0.95	0.39	no cap	0.42
Control Delay	17.4	12.3	57.6	1.7		6.0
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	17.4	12.3	57.6	1.7	Error	6.0
Queue Length 50th (ft)	213	43	253	24	~191	0
Queue Length 95th (ft)	m146	m#89	#465	30	#314	39
Internal Link Dist (ft)	790			642	1579	
Turn Bay Length (ft)			300			500
Base Capacity (vph)	2014	929	502	2548	1	761
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.83	0.92	0.39	143.00	0.42

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	600	320	276	110	376	376	161
v/c Ratio	0.64	0.17	0.38	0.27	0.60	0.60	0.23
Control Delay	11.6	4.5	32.8	5.2	30.1	30.1	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	4.5	32.8	5.2	30.1	30.1	4.4
Queue Length 50th (ft)	35	11	80	0	201	201	0
Queue Length 95th (ft)	67	m22	53	18	303	303	40
Internal Link Dist (ft)		642	297			1010	
Turn Bay Length (ft)	300				400		400
Base Capacity (vph)	940	1861	729	413	628	628	692
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.17	0.38	0.27	0.60	0.60	0.23

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	48	425	308	5	22	73
Future Volume (veh/h)	48	425	308	5	22	73
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	52	462	339	0	24	79
Adj No. of Lanes	1	2	2	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	122	1754	1989	1554	419	356
Arrive On Green	0.07	0.07	0.56	0.00	0.22	0.22
Sat Flow, veh/h	1774	2787	3548	1863	1863	1583
Grp Volume(v), veh/h	52	462	339	0	24	79
Grp Sat Flow(s),veh/h/ln	1774	1393	1774	1863	1863	1583
Q Serve(g_s), s	2.7	0.0	4.5	0.0	1.0	3.9
Cycle Q Clear(g_c), s	2.7	0.0	4.5	0.0	1.0	3.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	122	1754	1989	1554	419	356
V/C Ratio(X)	0.42	0.26	0.17	0.00	0.06	0.22
Avail Cap(c_a), veh/h	414	2212	1989	1554	472	401
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	7.9	10.3	0.0	29.2	30.4
Incr Delay (d2), s/veh	2.3	0.1	0.0	0.0	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	6.1	2.2	0.0	0.5	1.7
LnGrp Delay(d),s/veh	45.2	8.0	10.3	0.0	29.3	30.7
LnGrp LOS	D	A	B		C	C
Approach Vol, veh/h	514			339	103	
Approach Delay, s/veh	11.7			10.3	30.4	
Approach LOS	B			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		84.8		11.2	58.5	26.3		
Change Period (Y+Rc), s		* 4.7		4.6	* 4.7	* 4.7		
Max Green Setting (Gmax), s		* 64		22.4	* 35	* 24		
Max Q Clear Time (g_c+I1), s		0.0		4.7	6.5	5.9		
Green Ext Time (p_c), s		0.0		1.9	1.2	0.3		

Intersection Summary	
HCM 2010 Ctrl Delay	13.2
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	135	2	0	144	22	3	7	0	58	16	342
Future Volume (veh/h)	260	135	2	0	144	22	3	7	0	58	16	342
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	283	147	2	0	157	24	3	8	0	63	17	372
Adj No. of Lanes	2	1	0	1	1	0	0	1	0	0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	800	1389	19	2	745	114	7	18	0	113	31	872
Arrive On Green	0.08	0.25	0.25	0.00	0.47	0.47	0.01	0.01	0.00	0.08	0.08	0.08
Sat Flow, veh/h	3442	1833	25	1774	1579	241	501	1337	0	1411	381	2787
Grp Volume(v), veh/h	283	0	149	0	0	181	11	0	0	80	0	372
Grp Sat Flow(s),veh/h/ln	1721	0	1858	1774	0	1820	1838	0	0	1792	0	1393
Q Serve(g_s), s	7.5	0.0	5.9	0.0	0.0	5.6	0.6	0.0	0.0	4.1	0.0	0.0
Cycle Q Clear(g_c), s	7.5	0.0	5.9	0.0	0.0	5.6	0.6	0.0	0.0	4.1	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.13	0.27		0.00	0.79		1.00
Lane Grp Cap(c), veh/h	800	0	1407	2	0	859	24	0	0	144	0	872
V/C Ratio(X)	0.35	0.00	0.11	0.00	0.00	0.21	0.45	0.00	0.00	0.56	0.00	0.43
Avail Cap(c_a), veh/h	800	0	1407	92	0	859	345	0	0	344	0	1182
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.00	0.96	0.00	0.00	1.00	1.00	0.00	0.00	0.99	0.00	0.99
Uniform Delay (d), s/veh	37.5	0.0	11.0	0.0	0.0	14.9	47.0	0.0	0.0	42.5	0.0	26.2
Incr Delay (d2), s/veh	0.3	0.0	0.1	0.0	0.0	0.1	12.5	0.0	0.0	3.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	3.1	0.0	0.0	2.8	0.4	0.0	0.0	2.2	0.0	3.9
LnGrp Delay(d),s/veh	37.7	0.0	11.1	0.0	0.0	15.0	59.6	0.0	0.0	45.8	0.0	26.5
LnGrp LOS	D		B			B	E			D		C
Approach Vol, veh/h		432			181			11			452	
Approach Delay, s/veh		28.5			15.0			59.6			29.9	
Approach LOS		C			B			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		5.9	0.0	77.8		12.3	27.4	50.4
Change Period (Y+Rc), s		4.6	4.6	5.1		4.6	5.1	* 5.1
Max Green Setting (Gmax), s		18.0	5.0	35.7		18.4	21.8	* 19
Max Q Clear Time (g_c+I1), s		2.6	0.0	7.9		6.1	9.5	7.6
Green Ext Time (p_c), s		0.0	0.0	1.9		1.6	1.5	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	27.1
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	511	678	115	478	0	0	0	0	34	0	335
Future Volume (veh/h)	0	511	678	115	478	0	0	0	0	34	0	335
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	555	737	125	520	0				37	0	364
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1655	741	238	2319	0				432	0	386
Arrive On Green	0.00	0.31	0.31	0.27	1.00	0.00				0.24	0.00	0.24
Sat Flow, veh/h	0	3632	1583	1774	3632	0				1774	0	1583
Grp Volume(v), veh/h	0	555	737	125	520	0				37	0	364
Grp Sat Flow(s),veh/h/ln	0	1770	1583	1774	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	11.6	44.6	5.8	0.0	0.0				1.5	0.0	21.7
Cycle Q Clear(g_c), s	0.0	11.6	44.6	5.8	0.0	0.0				1.5	0.0	21.7
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1655	741	238	2319	0				432	0	386
V/C Ratio(X)	0.00	0.34	1.00	0.52	0.22	0.00				0.09	0.00	0.94
Avail Cap(c_a), veh/h	0	1655	741	248	2319	0				432	0	386
HCM Platoon Ratio	1.00	0.67	0.67	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.91	0.91	0.95	0.95	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	21.5	32.9	32.5	0.0	0.0				28.0	0.0	35.6
Incr Delay (d2), s/veh	0.0	0.5	30.4	1.8	0.2	0.0				0.1	0.0	31.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.8	25.8	2.9	0.1	0.0				0.8	0.0	12.8
LnGrp Delay(d),s/veh	0.0	22.0	63.2	34.2	0.2	0.0				28.1	0.0	67.2
LnGrp LOS		C	E	C	A					C		E
Approach Vol, veh/h		1292			645						401	
Approach Delay, s/veh		45.5			6.8						63.6	
Approach LOS		D			A						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			18.0	50.0		28.0		68.0
Change Period (Y+Rc), s			5.1	* 5.1		4.6		5.1
Max Green Setting (Gmax), s			13.4	* 45		23.4		62.9
Max Q Clear Time (g_c+I1), s			7.8	46.6		23.7		2.0
Green Ext Time (p_c), s			1.9	0.0		0.0		4.4

Intersection Summary	
HCM 2010 Ctrl Delay	37.9
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	52	462	171	169	24	79
v/c Ratio	0.34	0.19	0.14	0.13	0.18	0.42
Control Delay	46.7	0.4	1.3	1.3	43.8	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.7	0.4	1.3	1.3	43.8	16.9
Queue Length 50th (ft)	30	0	10	10	14	0
Queue Length 95th (ft)	66	7	7	7	38	43
Internal Link Dist (ft)	501			396	912	
Turn Bay Length (ft)	200	200	200			100
Base Capacity (vph)	413	2462	1256	1260	471	459
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.19	0.14	0.13	0.05	0.17

Intersection Summary

Lane Group	EBL	EBT	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	283	149	181	11	80	372
v/c Ratio	0.14	0.10	0.65	0.09	0.45	0.18
Control Delay	1.5	0.3	47.3	43.6	48.6	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.5	0.3	47.3	43.6	48.6	0.7
Queue Length 50th (ft)	2	1	101	6	47	0
Queue Length 95th (ft)	37	3	160	24	90	14
Internal Link Dist (ft)		628	769	803	396	
Turn Bay Length (ft)	225					180
Base Capacity (vph)	2054	1499	367	344	343	2098
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.10	0.49	0.03	0.23	0.18

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	555	737	125	520	37	364
v/c Ratio	0.31	0.63	0.51	0.21	no cap	0.59
Control Delay	7.2	5.8	46.3	4.6		7.7
Queue Delay	0.0	0.8	0.0	0.0		0.0
Total Delay	7.2	6.5	46.3	4.6	Error	7.7
Queue Length 50th (ft)	36	72	75	42	~47	0
Queue Length 95th (ft)	47	122	132	51	#113	70
Internal Link Dist (ft)	469			628	1158	
Turn Bay Length (ft)			225			200
Base Capacity (vph)	1787	1164	247	2450	1	661
Starvation Cap Reductn	0	172	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.74	0.51	0.21	37.00	0.55

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2847	948	248	3023	0	0	0	0	173	0	654
Future Volume (veh/h)	0	2847	948	248	3023	0	0	0	0	173	0	654
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	3095	1030	270	3286	0				188	0	0
Adj No. of Lanes	0	3	1	2	3	0				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2943	834	1036	4387	0				249	0	111
Arrive On Green	0.00	0.53	0.53	0.60	1.00	0.00				0.07	0.00	0.00
Sat Flow, veh/h	0	5588	1583	3442	5253	0				3548	0	1583
Grp Volume(v), veh/h	0	3095	1030	270	3286	0				188	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1721	1695	0				1774	0	1583
Q Serve(g_s), s	0.0	76.9	76.9	5.4	0.0	0.0				7.6	0.0	0.0
Cycle Q Clear(g_c), s	0.0	76.9	76.9	5.4	0.0	0.0				7.6	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2943	834	1036	4387	0				249	0	111
V/C Ratio(X)	0.00	1.05	1.24	0.26	0.75	0.00				0.76	0.00	0.00
Avail Cap(c_a), veh/h	0	2943	834	1036	4387	0				1101	0	491
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	34.5	34.5	21.4	0.0	0.0				66.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	32.2	116.1	0.0	0.1	0.0				4.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	48.0	60.3	2.5	0.0	0.0				3.9	0.0	0.0
LnGrp Delay(d),s/veh	0.0	66.7	150.7	21.4	0.1	0.0				71.3	0.0	0.0
LnGrp LOS		F	F	C	A					E		
Approach Vol, veh/h		4125			3556						188	
Approach Delay, s/veh		87.7			1.7						71.3	
Approach LOS		F			A						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			49.1	82.0		14.9		131.1
Change Period (Y+Rc), s			5.1	* 5.1		4.7		5.1
Max Green Setting (Gmax), s			9.3	* 77		45.3		90.9
Max Q Clear Time (g_c+I1), s			7.4	78.9		9.6		2.0
Green Ext Time (p_c), s			1.5	0.0		0.7		80.9

Intersection Summary	
HCM 2010 Ctrl Delay	48.4
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	309	2398	0	0	2133	164	1388	0	760	0	0	0
Future Volume (veh/h)	309	2398	0	0	2133	164	1388	0	760	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	336	2607	0	0	2318	178	1509	0	0			
Adj No. of Lanes	1	3	0	0	4	0	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	271	2678	0	0	2091	160	1441	0	643			
Arrive On Green	0.31	1.00	0.00	0.00	0.34	0.34	0.41	0.00	0.00			
Sat Flow, veh/h	1774	5253	0	0	6378	468	3548	0	1583			
Grp Volume(v), veh/h	336	2607	0	0	1820	676	1509	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1695	0	0	1602	1780	1774	0	1583			
Q Serve(g_s), s	22.3	0.0	0.0	0.0	49.9	49.9	59.3	0.0	0.0			
Cycle Q Clear(g_c), s	22.3	0.0	0.0	0.0	49.9	49.9	59.3	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.26	1.00		1.00			
Lane Grp Cap(c), veh/h	271	2678	0	0	1643	608	1441	0	643			
V/C Ratio(X)	1.24	0.97	0.00	0.00	1.11	1.11	1.05	0.00	0.00			
Avail Cap(c_a), veh/h	271	2678	0	0	1643	608	1441	0	643			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	50.7	0.0	0.0	0.0	48.0	48.1	43.3	0.0	0.0			
Incr Delay (d2), s/veh	111.0	1.9	0.0	0.0	57.9	71.1	37.1	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	9.2	0.5	0.0	0.0	30.9	36.5	36.4	0.0	0.0			
LnGrp Delay(d),s/veh	161.7	1.9	0.0	0.0	106.0	119.1	80.4	0.0	0.0			
LnGrp LOS	F	A			F	F	F					
Approach Vol, veh/h		2943			2496			1509				
Approach Delay, s/veh		20.1			109.6			80.4				
Approach LOS		C			F			F				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		64.0		82.0			27.0	55.0
Change Period (Y+Rc), s		* 4.7		5.1			* 4.7	5.1
Max Green Setting (Gmax), s		* 59		76.9			* 22	49.9
Max Q Clear Time (g_c+I1), s		61.3		2.0			24.3	51.9
Green Ext Time (p_c), s		0.0		73.7			0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	65.4
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	3208	917	270	3286	94	94	711
v/c Ratio	1.27	0.98	1.24	1.04	0.18	0.18	1.35
Control Delay	157.3	41.6	158.6	39.0	38.0	38.0	204.6
Queue Delay	0.3	0.0	0.0	26.6	0.2	0.2	0.0
Total Delay	157.5	41.6	158.6	65.6	38.2	38.2	204.6
Queue Length 50th (ft)	~1495	637	~168	~1260	69	69	~849
Queue Length 95th (ft)	#1570	#1073	m#135	m428	118	118	#1099
Internal Link Dist (ft)	1867			161		261	
Turn Bay Length (ft)							
Base Capacity (vph)	2521	937	218	3165	521	521	528
Starvation Cap Reductn	0	0	0	1003	0	0	0
Spillback Cap Reductn	278	0	0	0	130	130	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.43	0.98	1.24	1.52	0.24	0.24	1.35

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	336	2607	2496	754	755	826
v/c Ratio	1.24	0.97	1.15	1.11	1.11	1.23
Control Delay	170.5	7.5	115.7	107.5	108.0	150.7
Queue Delay	5.7	42.6	0.0	4.8	4.8	0.0
Total Delay	176.2	50.1	115.7	112.3	112.8	150.7
Queue Length 50th (ft)	~391	61	~808	~856	~858	~939
Queue Length 95th (ft)	m#260	m49	#877	#1118	#1121	#1197
Internal Link Dist (ft)		161	3355		754	
Turn Bay Length (ft)						
Base Capacity (vph)	270	2678	2173	682	682	673
Starvation Cap Reductn	87	620	0	0	0	0
Spillback Cap Reductn	0	0	2	300	300	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.84	1.27	1.15	1.97	1.98	1.23

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1774	943	569	1255	0	0	0	0	176	0	397
Future Volume (veh/h)	0	1774	943	569	1255	0	0	0	0	176	0	397
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	1928	1025	618	1364	0				191	0	432
Adj No. of Lanes	0	3	1	1	2	0				0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2204	686	523	2713	0				266	0	418
Arrive On Green	0.00	0.87	0.87	0.29	0.77	0.00				0.15	0.00	0.15
Sat Flow, veh/h	0	5253	1583	1774	3632	0				1774	0	2787
Grp Volume(v), veh/h	0	1928	1025	618	1364	0				191	0	432
Grp Sat Flow(s),veh/h/ln	0	1695	1583	1774	1770	0				1774	0	1393
Q Serve(g_s), s	0.0	25.1	52.0	35.4	17.6	0.0				12.3	0.0	18.0
Cycle Q Clear(g_c), s	0.0	25.1	52.0	35.4	17.6	0.0				12.3	0.0	18.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2204	686	523	2713	0				266	0	418
V/C Ratio(X)	0.00	0.87	1.49	1.18	0.50	0.00				0.72	0.00	1.03
Avail Cap(c_a), veh/h	0	2204	686	523	2713	0				266	0	418
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.44	0.44	0.67	0.67	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.2	8.0	42.3	5.3	0.0				48.6	0.0	51.0
Incr Delay (d2), s/veh	0.0	2.4	225.7	94.4	0.5	0.0				9.0	0.0	52.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.8	63.2	31.0	8.5	0.0				6.7	0.0	10.0
LnGrp Delay(d),s/veh	0.0	8.6	233.7	136.7	5.8	0.0				57.5	0.0	103.9
LnGrp LOS		A	F	F	A					E		F
Approach Vol, veh/h		2953			1982						623	
Approach Delay, s/veh		86.8			46.6						89.7	
Approach LOS		F			D						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			40.0	57.4		22.6		97.4
Change Period (Y+Rc), s			4.6	5.4		4.6		5.4
Max Green Setting (Gmax), s			35.4	52.0		18.0		92.0
Max Q Clear Time (g_c+I1), s			37.4	54.0		20.0		19.6
Green Ext Time (p_c), s			0.0	0.0		0.0		67.1

Intersection Summary	
HCM 2010 Ctrl Delay	72.8
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	716	394	0	0	349	134	961	0	197	0	0	0
Future Volume (veh/h)	716	394	0	0	349	134	961	0	197	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	778	428	0	0	379	146	1045	0	214			
Adj No. of Lanes	2	2	0	0	2	1	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	1258	2060	0	0	608	272	1187	0	530			
Arrive On Green	0.12	0.19	0.00	0.00	0.06	0.06	0.33	0.00	0.33			
Sat Flow, veh/h	3442	3632	0	0	3632	1583	3548	0	1583			
Grp Volume(v), veh/h	778	428	0	0	379	146	1045	0	214			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1583	1774	0	1583			
Q Serve(g_s), s	25.8	12.2	0.0	0.0	12.6	10.8	33.3	0.0	12.5			
Cycle Q Clear(g_c), s	25.8	12.2	0.0	0.0	12.6	10.8	33.3	0.0	12.5			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1258	2060	0	0	608	272	1187	0	530			
V/C Ratio(X)	0.62	0.21	0.00	0.00	0.62	0.54	0.88	0.00	0.40			
Avail Cap(c_a), veh/h	1258	2060	0	0	608	272	1520	0	678			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.36	0.36	0.00	0.00	0.99	0.99	1.00	0.00	1.00			
Uniform Delay (d), s/veh	44.8	25.2	0.0	0.0	52.8	52.0	37.7	0.0	30.7			
Incr Delay (d2), s/veh	0.3	0.1	0.0	0.0	4.7	7.3	5.2	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	12.4	6.0	0.0	0.0	6.6	5.3	17.1	0.0	5.5			
LnGrp Delay(d),s/veh	45.1	25.3	0.0	0.0	57.5	59.3	42.9	0.0	31.2			
LnGrp LOS	D	C			E	E	D		C			
Approach Vol, veh/h		1206			525			1259				
Approach Delay, s/veh		38.1			58.0			40.9				
Approach LOS		D			E			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		44.7		75.3			49.3	26.0
Change Period (Y+Rc), s		4.6		5.4			5.4	* 5.4
Max Green Setting (Gmax), s		51.4		58.6			33.4	* 21
Max Q Clear Time (g_c+I1), s		35.3		14.2			27.8	14.6
Green Ext Time (p_c), s		4.8		7.0			2.9	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	42.8
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1928	1025	618	1364	191	432
v/c Ratio	0.88	1.12	1.18	0.50	no cap	0.76
Control Delay	22.1	75.0	132.8	1.7		37.2
Queue Delay	0.0	0.1	0.0	0.3		0.0
Total Delay	22.1	75.1	132.8	1.9	Error	37.2
Queue Length 50th (ft)	450	~726	~572	34	~308	106
Queue Length 95th (ft)	m353	m#973	#795	39	#458	172
Internal Link Dist (ft)	790			642	1579	
Turn Bay Length (ft)			300			500
Base Capacity (vph)	2203	919	522	2713	1	572
Starvation Cap Reductn	0	22	0	618	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.88	1.14	1.18	0.65	191.00	0.76

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	778	428	379	146	522	523	214
v/c Ratio	0.81	0.25	0.62	0.37	0.72	0.73	0.27
Control Delay	19.1	6.4	48.3	6.9	35.5	35.6	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.1	6.4	48.3	6.9	35.5	35.6	3.7
Queue Length 50th (ft)	167	17	145	1	346	347	0
Queue Length 95th (ft)	m202	m35	181	28	490	492	45
Internal Link Dist (ft)		642	297			1010	
Turn Bay Length (ft)	300				400		400
Base Capacity (vph)	955	1728	607	392	720	720	800
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.25	0.62	0.37	0.72	0.73	0.27

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	92	475	506	17	23	60
Future Volume (veh/h)	92	475	506	17	23	60
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	100	516	563	0	25	65
Adj No. of Lanes	1	2	2	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	171	1868	2036	1510	354	301
Arrive On Green	0.10	0.10	0.57	0.00	0.19	0.19
Sat Flow, veh/h	1774	2787	3548	1863	1863	1583
Grp Volume(v), veh/h	100	516	563	0	25	65
Grp Sat Flow(s),veh/h/ln	1774	1393	1774	1863	1863	1583
Q Serve(g_s), s	5.4	0.0	8.0	0.0	1.1	3.5
Cycle Q Clear(g_c), s	5.4	0.0	8.0	0.0	1.1	3.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	171	1868	2036	1510	354	301
V/C Ratio(X)	0.58	0.28	0.28	0.00	0.07	0.22
Avail Cap(c_a), veh/h	415	2251	2036	1510	397	337
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.97	0.00	1.00	1.00
Uniform Delay (d), s/veh	43.3	6.7	10.8	0.0	33.3	34.2
Incr Delay (d2), s/veh	3.1	0.1	0.1	0.0	0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	7.1	3.9	0.0	0.6	1.5
LnGrp Delay(d),s/veh	46.4	6.8	10.9	0.0	33.4	34.6
LnGrp LOS	D	A	B		C	C
Approach Vol, veh/h	616			563	90	
Approach Delay, s/veh	13.2			10.9	34.2	
Approach LOS	B			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		85.8		14.2	62.1	23.7		
Change Period (Y+Rc), s		* 4.7		4.6	* 4.7	* 4.7		
Max Green Setting (Gmax), s		* 67		23.4	* 41	* 21		
Max Q Clear Time (g_c+I1), s		0.0		7.4	10.0	5.5		
Green Ext Time (p_c), s		0.0		2.2	2.2	0.2		

Intersection Summary	
HCM 2010 Ctrl Delay	13.7
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	475	181	2	1	226	49	5	18	0	76	15	423
Future Volume (veh/h)	475	181	2	1	226	49	5	18	0	76	15	423
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	516	197	2	1	246	53	5	20	0	83	16	460
Adj No. of Lanes	2	1	0	1	1	0	0	1	0	0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	872	1274	13	2	647	139	9	37	0	138	27	963
Arrive On Green	0.42	1.00	1.00	0.00	0.44	0.44	0.03	0.03	0.00	0.09	0.09	0.09
Sat Flow, veh/h	3442	1841	19	1774	1486	320	369	1475	0	1499	289	2787
Grp Volume(v), veh/h	516	0	199	1	0	299	25	0	0	99	0	460
Grp Sat Flow(s),veh/h/ln	1721	0	1859	1774	0	1806	1844	0	0	1788	0	1393
Q Serve(g_s), s	11.5	0.0	0.0	0.1	0.0	11.2	1.3	0.0	0.0	5.3	0.0	0.0
Cycle Q Clear(g_c), s	11.5	0.0	0.0	0.1	0.0	11.2	1.3	0.0	0.0	5.3	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.18	0.20		0.00	0.84		1.00
Lane Grp Cap(c), veh/h	872	0	1287	2	0	786	46	0	0	165	0	963
V/C Ratio(X)	0.59	0.00	0.15	0.41	0.00	0.38	0.54	0.00	0.00	0.60	0.00	0.48
Avail Cap(c_a), veh/h	872	0	1287	89	0	786	332	0	0	322	0	1208
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.00	0.91	1.00	0.00	1.00	1.00	0.00	0.00	0.99	0.00	0.99
Uniform Delay (d), s/veh	24.9	0.0	0.0	49.9	0.0	19.1	48.2	0.0	0.0	43.6	0.0	25.6
Incr Delay (d2), s/veh	1.0	0.0	0.2	84.8	0.0	0.3	9.5	0.0	0.0	3.4	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.0	0.1	0.1	0.0	5.6	0.8	0.0	0.0	2.8	0.0	5.0
LnGrp Delay(d),s/veh	25.8	0.0	0.2	134.7	0.0	19.4	57.7	0.0	0.0	47.0	0.0	26.0
LnGrp LOS	C		A	F		B	E			D		C
Approach Vol, veh/h		715			300			25			559	
Approach Delay, s/veh		18.7			19.8			57.7			29.7	
Approach LOS		B			B			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		7.1	4.7	74.3		13.8	30.4	48.6
Change Period (Y+Rc), s		4.6	4.6	5.1		4.6	5.1	* 5.1
Max Green Setting (Gmax), s		18.0	5.0	40.1		18.0	22.2	* 23
Max Q Clear Time (g_c+I1), s		3.3	2.1	2.0		7.3	13.5	13.2
Green Ext Time (p_c), s		0.0	0.0	3.3		1.9	2.2	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	23.4
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	681	863	153	640	0	0	0	0	45	0	447
Future Volume (veh/h)	0	681	863	153	640	0	0	0	0	45	0	447
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	740	938	166	696	0				49	0	486
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1653	739	229	2290	0				454	0	405
Arrive On Green	0.00	0.78	0.78	0.26	1.00	0.00				0.26	0.00	0.26
Sat Flow, veh/h	0	3632	1583	1774	3632	0				1774	0	1583
Grp Volume(v), veh/h	0	740	938	166	696	0				49	0	486
Grp Sat Flow(s),veh/h/ln	0	1770	1583	1774	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	7.1	46.7	8.5	0.0	0.0				2.1	0.0	25.6
Cycle Q Clear(g_c), s	0.0	7.1	46.7	8.5	0.0	0.0				2.1	0.0	25.6
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1653	739	229	2290	0				454	0	405
V/C Ratio(X)	0.00	0.45	1.27	0.73	0.30	0.00				0.11	0.00	1.20
Avail Cap(c_a), veh/h	0	1653	739	238	2290	0				454	0	405
HCM Platoon Ratio	1.00	1.67	1.67	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.87	0.87	0.89	0.89	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.6	11.0	35.5	0.0	0.0				28.5	0.0	37.2
Incr Delay (d2), s/veh	0.0	0.8	130.1	9.1	0.3	0.0				0.1	0.0	111.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.4	45.9	4.7	0.1	0.0				1.0	0.0	23.7
LnGrp Delay(d),s/veh	0.0	7.4	141.1	44.6	0.3	0.0				28.6	0.0	148.3
LnGrp LOS		A	F	D	A					C		F
Approach Vol, veh/h		1678			862						535	
Approach Delay, s/veh		82.2			8.8						137.4	
Approach LOS		F			A						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			18.0	51.8		30.2		69.8
Change Period (Y+Rc), s			5.1	* 5.1		4.6		5.1
Max Green Setting (Gmax), s			13.4	* 47		25.6		64.7
Max Q Clear Time (g_c+I1), s			10.5	48.7		27.6		2.0
Green Ext Time (p_c), s			1.4	0.0		0.0		6.3

Intersection Summary	
HCM 2010 Ctrl Delay	71.2
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	100	516	286	282	25	65
v/c Ratio	0.52	0.21	0.23	0.23	0.19	0.38
Control Delay	50.7	0.4	1.1	1.1	46.4	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.7	0.4	1.1	1.1	46.4	17.8
Queue Length 50th (ft)	61	0	16	16	15	0
Queue Length 95th (ft)	109	7	5	5	41	41
Internal Link Dist (ft)	501			396	912	
Turn Bay Length (ft)	200	200	200			100
Base Capacity (vph)	414	2483	1232	1237	396	388
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.21	0.23	0.23	0.06	0.17

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	516	199	1	299	25	99	460
v/c Ratio	0.30	0.14	0.01	0.77	0.20	0.51	0.24
Control Delay	4.5	0.6	45.0	48.7	46.9	51.7	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.5	0.6	45.0	48.7	46.9	51.7	1.2
Queue Length 50th (ft)	4	1	1	174	15	61	0
Queue Length 95th (ft)	120	5	6	248	41	109	17
Internal Link Dist (ft)		628		769	803	396	
Turn Bay Length (ft)	225		100				180
Base Capacity (vph)	1748	1404	99	443	331	321	1908
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.14	0.01	0.67	0.08	0.31	0.24

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	740	938	166	696	49	486
v/c Ratio	0.42	0.79	0.70	0.29	no cap	0.86
Control Delay	8.4	11.3	56.9	5.2		32.1
Queue Delay	0.0	3.3	0.0	0.0		0.0
Total Delay	8.4	14.6	56.9	5.2	Error	32.1
Queue Length 50th (ft)	98	176	107	60	~65	133
Queue Length 95th (ft)	80	232	m#191	77	#141	#304
Internal Link Dist (ft)	469			628	1158	
Turn Bay Length (ft)			225			200
Base Capacity (vph)	1763	1189	237	2400	1	605
Starvation Cap Reductn	0	163	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.91	0.70	0.29	49.00	0.80

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	188	460	50	390	7	265	26	19	3	19	69
Future Volume (veh/h)	38	188	460	50	390	7	265	26	19	3	19	69
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	41	204	500	54	424	8	288	28	21	3	21	75
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	190	626	532	90	504	428	361	202	151	16	113	111
Arrive On Green	0.11	0.34	0.34	0.05	0.27	0.27	0.20	0.20	0.20	0.07	0.07	0.07
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	990	742	231	1620	1583
Grp Volume(v), veh/h	41	204	500	54	424	8	288	0	49	24	0	75
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	0	1732	1851	0	1583
Q Serve(g_s), s	1.2	4.6	17.2	1.7	12.1	0.2	8.7	0.0	1.3	0.7	0.0	2.6
Cycle Q Clear(g_c), s	1.2	4.6	17.2	1.7	12.1	0.2	8.7	0.0	1.3	0.7	0.0	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.43	0.12		1.00
Lane Grp Cap(c), veh/h	190	626	532	90	504	428	361	0	353	130	0	111
V/C Ratio(X)	0.22	0.33	0.94	0.60	0.84	0.02	0.80	0.00	0.14	0.19	0.00	0.68
Avail Cap(c_a), veh/h	190	626	532	158	626	532	662	0	647	691	0	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.9	13.9	18.1	26.1	19.4	15.0	21.3	0.0	18.3	24.6	0.0	25.5
Incr Delay (d2), s/veh	0.6	0.3	24.9	6.3	8.4	0.0	4.0	0.0	0.2	0.7	0.0	7.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.4	11.2	1.0	7.3	0.1	4.6	0.0	0.6	0.4	0.0	1.3
LnGrp Delay(d),s/veh	23.5	14.2	43.0	32.4	27.8	15.1	25.3	0.0	18.5	25.3	0.0	32.6
LnGrp LOS	C	B	D	C	C	B	C		B	C		C
Approach Vol, veh/h		745			486			337			99	
Approach Delay, s/veh		34.1			28.1			24.3			30.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		16.2	7.4	24.0		8.6	11.1	20.3
Change Period (Y+Rc), s		* 4.7	4.6	5.1		4.7	5.1	* 5.1
Max Green Setting (Gmax), s		* 21	5.0	18.9		21.0	5.0	* 19
Max Q Clear Time (g_c+I1), s		10.7	3.7	19.2		4.6	3.2	14.1
Green Ext Time (p_c), s		0.8	0.0	0.0		0.3	0.7	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	30.2
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	41	204	500	54	424	8	288	49	24	75
v/c Ratio	0.26	0.32	0.57	0.34	0.67	0.01	0.65	0.11	0.11	0.20
Control Delay	34.4	20.6	5.5	36.3	28.1	0.0	28.6	13.4	29.5	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.4	20.6	5.5	36.3	28.1	0.0	28.6	13.4	29.5	1.2
Queue Length 50th (ft)	16	64	0	21	152	0	103	9	9	0
Queue Length 95th (ft)	47	132	69	#59	#333	0	181	32	31	0
Internal Link Dist (ft)		1019			822			448	1634	
Turn Bay Length (ft)	200		200	200		200				
Base Capacity (vph)	160	637	870	160	637	639	672	676	704	733
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.32	0.57	0.34	0.67	0.01	0.43	0.07	0.03	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	383	333	41	352	7	526	42	70	8	22	68
Future Volume (veh/h)	36	383	333	41	352	7	526	42	70	8	22	68
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	39	416	0	45	383	8	572	46	76	9	24	74
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	475	403	74	495	420	632	225	372	34	92	108
Arrive On Green	0.04	0.25	0.00	0.04	0.27	0.27	0.36	0.36	0.36	0.07	0.07	0.07
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	633	1045	501	1337	1583
Grp Volume(v), veh/h	39	416	0	45	383	8	572	0	122	33	0	74
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	0	1678	1838	0	1583
Q Serve(g_s), s	1.5	15.1	0.0	1.8	13.4	0.3	21.5	0.0	3.5	1.2	0.0	3.2
Cycle Q Clear(g_c), s	1.5	15.1	0.0	1.8	13.4	0.3	21.5	0.0	3.5	1.2	0.0	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.62	0.27		1.00
Lane Grp Cap(c), veh/h	67	475	403	74	495	420	632	0	598	126	0	108
V/C Ratio(X)	0.58	0.88	0.00	0.61	0.77	0.02	0.91	0.00	0.20	0.26	0.00	0.68
Avail Cap(c_a), veh/h	126	546	464	126	546	464	740	0	700	549	0	473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.2	25.1	0.0	33.1	23.9	19.0	21.5	0.0	15.7	31.0	0.0	32.0
Incr Delay (d2), s/veh	7.7	13.6	0.0	7.9	6.2	0.0	13.4	0.0	0.2	1.1	0.0	7.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	9.5	0.0	1.0	7.7	0.1	12.8	0.0	1.7	0.6	0.0	1.6
LnGrp Delay(d),s/veh	40.9	38.7	0.0	41.0	30.1	19.1	34.9	0.0	15.9	32.1	0.0	39.3
LnGrp LOS	D	D		D	C	B	C		B	C		D
Approach Vol, veh/h		455			436			694			107	
Approach Delay, s/veh		38.9			31.0			31.5			37.1	
Approach LOS		D			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		29.7	8.0	23.0		9.5	7.3	23.8
Change Period (Y+Rc), s		* 4.7	5.1	* 5.1		4.7	4.6	5.1
Max Green Setting (Gmax), s		* 29	5.0	* 21		21.0	5.0	20.6
Max Q Clear Time (g_c+I1), s		23.5	3.8	17.1		5.2	3.5	15.4
Green Ext Time (p_c), s		1.5	0.3	0.8		0.3	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	33.7
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	39	416	362	45	383	8	572	122	33	74
v/c Ratio	0.33	0.80	0.52	0.38	0.74	0.02	0.82	0.17	0.20	0.23
Control Delay	44.3	41.6	6.0	46.1	37.3	0.0	34.4	8.9	36.8	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.3	41.6	6.0	46.1	37.3	0.0	34.4	8.9	36.8	1.7
Queue Length 50th (ft)	19	202	0	22	182	0	267	15	16	0
Queue Length 95th (ft)	51	#374	64	56	#333	0	#476	51	43	0
Internal Link Dist (ft)		1019			822			448	1634	
Turn Bay Length (ft)	200		200	200		200	250			
Base Capacity (vph)	119	519	702	119	519	532	701	715	522	585
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.80	0.52	0.38	0.74	0.02	0.82	0.17	0.06	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	198	460	50	395	7	252	26	19	3	19	69
Future Volume (veh/h)	38	198	460	50	395	7	252	26	19	3	19	69
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	41	215	500	54	429	8	274	28	21	3	21	75
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	632	538	90	510	433	348	194	146	16	114	111
Arrive On Green	0.11	0.34	0.34	0.05	0.27	0.27	0.20	0.20	0.20	0.07	0.07	0.07
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	990	742	231	1620	1583
Grp Volume(v), veh/h	41	215	500	54	429	8	274	0	49	24	0	75
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	0	1732	1851	0	1583
Q Serve(g_s), s	1.2	4.8	17.0	1.7	12.1	0.2	8.2	0.0	1.3	0.7	0.0	2.6
Cycle Q Clear(g_c), s	1.2	4.8	17.0	1.7	12.1	0.2	8.2	0.0	1.3	0.7	0.0	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.43	0.12		1.00
Lane Grp Cap(c), veh/h	191	632	538	90	510	433	348	0	340	130	0	111
V/C Ratio(X)	0.21	0.34	0.93	0.60	0.84	0.02	0.79	0.00	0.14	0.18	0.00	0.67
Avail Cap(c_a), veh/h	191	632	538	159	632	538	669	0	653	698	0	597
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.7	13.7	17.7	25.9	19.1	14.8	21.3	0.0	18.5	24.4	0.0	25.3
Incr Delay (d2), s/veh	0.6	0.3	22.9	6.2	8.3	0.0	4.0	0.0	0.2	0.7	0.0	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.5	10.8	1.0	7.4	0.1	4.3	0.0	0.6	0.4	0.0	1.3
LnGrp Delay(d),s/veh	23.2	14.0	40.7	32.1	27.4	14.8	25.2	0.0	18.7	25.0	0.0	32.1
LnGrp LOS	C	B	D	C	C	B	C		B	C		C
Approach Vol, veh/h		756			491			323			99	
Approach Delay, s/veh		32.2			27.7			24.3			30.4	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		15.6	7.4	24.0		8.6	11.1	20.3
Change Period (Y+Rc), s		* 4.7	4.6	5.1		4.7	5.1	* 5.1
Max Green Setting (Gmax), s		* 21	5.0	18.9		21.0	5.0	* 19
Max Q Clear Time (g_c+I1), s		10.2	3.7	19.0		4.6	3.2	14.1
Green Ext Time (p_c), s		0.8	0.0	0.0		0.3	0.7	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	29.2
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	41	215	500	54	429	8	274	49	24	75
v/c Ratio	0.25	0.33	0.57	0.34	0.67	0.01	0.63	0.11	0.11	0.20
Control Delay	34.2	20.6	5.4	36.0	28.0	0.0	28.2	13.5	29.4	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.2	20.6	5.4	36.0	28.0	0.0	28.2	13.5	29.4	1.2
Queue Length 50th (ft)	16	66	0	21	152	0	98	9	9	0
Queue Length 95th (ft)	47	139	69	#59	#338	0	172	32	31	0
Internal Link Dist (ft)		1019			822			448	1634	
Turn Bay Length (ft)	200		200	200		200				
Base Capacity (vph)	161	642	873	161	642	642	677	680	709	737
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.33	0.57	0.34	0.67	0.01	0.40	0.07	0.03	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	376	333	41	344	7	507	42	70	8	22	68
Future Volume (veh/h)	36	376	333	41	344	7	507	42	70	8	22	68
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	39	409	0	45	374	8	551	46	76	9	24	74
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	68	472	402	75	493	419	617	220	364	34	92	109
Arrive On Green	0.04	0.25	0.00	0.04	0.26	0.26	0.35	0.35	0.35	0.07	0.07	0.07
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	633	1045	501	1337	1583
Grp Volume(v), veh/h	39	409	0	45	374	8	551	0	122	33	0	74
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	0	1678	1838	0	1583
Q Serve(g_s), s	1.5	14.3	0.0	1.7	12.6	0.3	20.0	0.0	3.5	1.2	0.0	3.1
Cycle Q Clear(g_c), s	1.5	14.3	0.0	1.7	12.6	0.3	20.0	0.0	3.5	1.2	0.0	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.62	0.27		1.00
Lane Grp Cap(c), veh/h	68	472	402	75	493	419	617	0	584	126	0	109
V/C Ratio(X)	0.57	0.87	0.00	0.60	0.76	0.02	0.89	0.00	0.21	0.26	0.00	0.68
Avail Cap(c_a), veh/h	130	563	479	130	563	479	763	0	722	567	0	488
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.2	24.3	0.0	32.1	23.0	18.5	21.0	0.0	15.6	30.1	0.0	31.0
Incr Delay (d2), s/veh	7.4	11.7	0.0	7.6	5.2	0.0	11.2	0.0	0.2	1.1	0.0	7.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	8.8	0.0	1.0	7.1	0.1	11.7	0.0	1.6	0.6	0.0	1.6
LnGrp Delay(d),s/veh	39.6	36.0	0.0	39.6	28.2	18.5	32.2	0.0	15.8	31.2	0.0	38.2
LnGrp LOS	D	D		D	C	B	C		B	C		D
Approach Vol, veh/h		448			427			673			107	
Approach Delay, s/veh		36.4			29.2			29.2			36.0	
Approach LOS		D			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		28.4	8.0	22.4		9.4	7.2	23.1
Change Period (Y+Rc), s		* 4.7	5.1	* 5.1		4.7	4.6	5.1
Max Green Setting (Gmax), s		* 29	5.0	* 21		21.0	5.0	20.6
Max Q Clear Time (g_c+I1), s		22.0	3.7	16.3		5.1	3.5	14.6
Green Ext Time (p_c), s		1.7	0.3	1.0		0.3	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	31.6
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	39	409	362	45	374	8	551	122	33	74
v/c Ratio	0.33	0.79	0.51	0.38	0.72	0.01	0.79	0.17	0.19	0.23
Control Delay	44.2	40.2	6.0	46.0	36.2	0.0	32.6	8.9	36.8	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.2	40.2	6.0	46.0	36.2	0.0	32.6	8.9	36.8	1.7
Queue Length 50th (ft)	19	197	0	22	176	0	253	15	16	0
Queue Length 95th (ft)	51	#365	64	56	#322	0	#451	51	43	0
Internal Link Dist (ft)		1019			822			448	1634	
Turn Bay Length (ft)	200		200	200		200	250			
Base Capacity (vph)	120	521	703	120	521	534	704	718	524	586
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.79	0.51	0.38	0.72	0.01	0.78	0.17	0.06	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	838	421	607	951	25	26	128
v/c Ratio	0.45	0.54	0.71	0.40	0.12	0.18	0.30
Control Delay	12.3	5.0	23.9	1.7	31.1	30.7	7.6
Queue Delay	0.0	0.0	2.0	0.2	0.0	0.0	0.0
Total Delay	12.3	5.0	25.9	1.8	31.1	30.7	7.6
Queue Length 50th (ft)	72	0	168	4	13	~31	0
Queue Length 95th (ft)	108	68	225	4	32	33	44
Internal Link Dist (ft)	242			160		206	
Turn Bay Length (ft)							
Base Capacity (vph)	1875	773	850	2394	351	141	432
Starvation Cap Reductn	0	0	124	535	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.54	0.84	0.51	0.07	0.18	0.30

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	95	367	1111	293	296	320
v/c Ratio	0.39	0.20	0.49	0.48	0.48	0.20
Control Delay	43.6	14.1	22.8	24.3	24.4	0.3
Queue Delay	0.0	1.9	0.1	0.0	0.0	0.0
Total Delay	43.6	15.9	23.0	24.3	24.4	0.3
Queue Length 50th (ft)	50	76	138	126	127	0
Queue Length 95th (ft)	94	116	172	204	206	0
Internal Link Dist (ft)		160	272		743	
Turn Bay Length (ft)						
Base Capacity (vph)	273	1847	2259	611	613	1583
Starvation Cap Reductn	0	1296	0	0	0	0
Spillback Cap Reductn	0	0	294	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.67	0.57	0.48	0.48	0.20

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	462	563	24	762	90	52	228
v/c Ratio	0.89	0.41	0.22	0.94	0.41	0.42	0.63
Control Delay	52.1	6.4	46.0	45.7	19.8	48.0	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.1	6.4	46.0	45.7	19.8	48.0	13.8
Queue Length 50th (ft)	247	69	13	385	12	28	0
Queue Length 95th (ft)	#456	224	40	#686	55	64	65
Internal Link Dist (ft)		310		787	719	318	
Turn Bay Length (ft)	135		70				190
Base Capacity (vph)	520	1389	110	807	404	274	520
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.41	0.22	0.94	0.22	0.19	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1026	398	325	1417	86	87	185
v/c Ratio	0.50	0.49	0.64	0.63	0.25	0.27	0.41
Control Delay	12.5	4.0	28.7	5.6	25.7	26.0	14.6
Queue Delay	0.0	0.0	0.0	0.7	0.0	0.0	0.0
Total Delay	12.5	4.0	28.7	6.4	25.7	26.0	14.6
Queue Length 50th (ft)	95	0	64	36	34	34	31
Queue Length 95th (ft)	133	56	110	89	72	73	85
Internal Link Dist (ft)	242			160		206	
Turn Bay Length (ft)							
Base Capacity (vph)	2069	806	510	2244	398	319	453
Starvation Cap Reductn	0	0	0	457	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.49	0.64	0.79	0.22	0.27	0.41

Intersection Summary

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	138	666	896	458	459	610
v/c Ratio	0.59	0.41	0.47	0.66	0.66	0.39
Control Delay	46.1	9.3	23.4	23.7	23.8	0.7
Queue Delay	0.0	0.6	0.0	0.0	0.0	0.0
Total Delay	46.1	9.9	23.4	23.7	23.8	0.7
Queue Length 50th (ft)	56	45	104	177	178	0
Queue Length 95th (ft)	120	62	135	285	286	0
Internal Link Dist (ft)		160	272		743	
Turn Bay Length (ft)						
Base Capacity (vph)	263	1625	1893	692	692	1583
Starvation Cap Reductn	0	567	0	0	0	0
Spillback Cap Reductn	0	0	40	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.63	0.48	0.66	0.66	0.39

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	214	413	16	740	75	112	322
v/c Ratio	0.75	0.33	0.12	0.86	0.25	0.46	0.63
Control Delay	48.3	7.3	35.1	30.2	15.3	32.9	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.3	7.3	35.1	30.2	15.3	32.9	10.2
Queue Length 50th (ft)	90	53	7	260	11	45	6
Queue Length 95th (ft)	#215	182	26	#552	44	90	70
Internal Link Dist (ft)		310		787	719	318	
Turn Bay Length (ft)	135		70				190
Base Capacity (vph)	295	1237	134	909	501	446	684
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.33	0.12	0.81	0.15	0.25	0.47

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1633	619	502	2284	14	14	128
v/c Ratio	0.66	0.62	0.98	0.87	0.08	0.17	0.36
Control Delay	14.6	4.5	50.6	9.1	28.0	27.5	10.8
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0
Total Delay	14.6	4.5	50.6	9.4	28.0	27.5	10.8
Queue Length 50th (ft)	213	0	128	~184	6	~14	9
Queue Length 95th (ft)	277	72	m#173	#741	20	20	50
Internal Link Dist (ft)	242			160		206	
Turn Bay Length (ft)							
Base Capacity (vph)	2461	1002	510	2619	398	80	453
Starvation Cap Reductn	0	0	0	51	0	0	0
Spillback Cap Reductn	19	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.62	0.98	0.89	0.04	0.17	0.28

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	99	1010	2668	371	374	426
v/c Ratio	0.68	0.47	0.86	0.83	0.83	0.27
Control Delay	53.4	5.6	21.5	43.9	44.3	0.4
Queue Delay	0.0	1.5	0.4	6.1	6.4	0.0
Total Delay	53.4	7.0	21.9	50.0	50.8	0.4
Queue Length 50th (ft)	51	24	322	172	174	0
Queue Length 95th (ft)	m#82	30	381	#322	#325	0
Internal Link Dist (ft)		160	272		743	
Turn Bay Length (ft)						
Base Capacity (vph)	146	2137	3115	449	450	1583
Starvation Cap Reductn	0	877	0	0	0	0
Spillback Cap Reductn	0	0	118	45	45	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.80	0.89	0.92	0.92	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	8	532	315	162	536	15	215	202	45
v/c Ratio	0.06	0.63	0.35	0.67	0.46	0.01	0.73	0.40	0.12
Control Delay	34.4	21.3	3.3	39.0	7.0	0.0	41.9	6.1	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.4	21.3	3.3	39.0	7.0	0.0	41.9	6.1	19.0
Queue Length 50th (ft)	4	187	0	78	42	0	94	0	14
Queue Length 95th (ft)	17	319	45	#149	208	m0	157	46	36
Internal Link Dist (ft)		842			1019		447		1579
Turn Bay Length (ft)	200		200	200		200		200	
Base Capacity (vph)	125	845	890	242	1165	1023	366	583	451
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.63	0.35	0.67	0.46	0.01	0.59	0.35	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	41	195	479	54	418	8	253	21	24	75
v/c Ratio	0.28	0.20	0.45	0.33	0.42	0.01	0.75	0.04	0.05	0.15
Control Delay	28.1	8.9	2.0	37.9	14.8	0.0	40.3	0.2	19.6	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.1	8.9	2.0	37.9	14.8	0.0	40.3	0.2	19.6	0.6
Queue Length 50th (ft)	17	24	0	24	128	0	109	0	9	0
Queue Length 95th (ft)	m30	m69	35	58	231	0	174	0	24	0
Internal Link Dist (ft)		1019			822		448		1634	
Turn Bay Length (ft)	200		200	200		200		100		
Base Capacity (vph)	149	983	1061	168	1002	896	436	621	574	621
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.20	0.45	0.32	0.42	0.01	0.58	0.03	0.04	0.12

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	539	620	24	565	299	21	70	67	275
v/c Ratio	0.90	0.43	0.28	0.68	0.38	0.13	0.29	0.51	0.69
Control Delay	56.5	6.9	56.0	28.1	12.5	49.5	5.8	64.2	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.5	6.9	56.0	28.1	12.5	49.5	5.8	64.2	15.4
Queue Length 50th (ft)	385	162	18	298	77	15	0	50	0
Queue Length 95th (ft)	#556	276	m26	m387	m98	39	17	94	80
Internal Link Dist (ft)		310		787		719		318	
Turn Bay Length (ft)	135		70		100				190
Base Capacity (vph)	650	1436	87	835	779	259	327	210	470
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.43	0.28	0.68	0.38	0.08	0.21	0.32	0.59

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	736	323	156	794
v/c Ratio	1.24	0.37	0.36	1.06
Control Delay	139.1	8.7	16.1	63.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	139.1	8.7	16.1	63.0
Queue Length 50th (ft)	~426	54	35	~210
Queue Length 95th (ft)	#929	101	79	#406
Internal Link Dist (ft)	787	769	775	294
Turn Bay Length (ft)				
Base Capacity (vph)	594	864	431	752
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.24	0.37	0.36	1.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2203	657	174	3326	49	50	254
v/c Ratio	0.75	0.60	0.47	1.22	0.21	0.23	0.87
Control Delay	17.6	3.3	51.5	120.8	46.2	46.7	64.9
Queue Delay	0.1	0.0	0.0	0.2	6.5	110.8	0.0
Total Delay	17.7	3.3	51.5	121.1	52.7	157.5	64.9
Queue Length 50th (ft)	434	0	63	~1685	34	35	145
Queue Length 95th (ft)	500	52	m86	m#1748	74	75	#284
Internal Link Dist (ft)	242			160		206	
Turn Bay Length (ft)							
Base Capacity (vph)	2921	1094	374	2719	270	216	309
Starvation Cap Reductn	0	0	0	301	0	0	0
Spillback Cap Reductn	62	0	0	0	180	180	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.60	0.47	1.38	0.54	1.39	0.82

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	149	1862	1394	668	668	715
v/c Ratio	0.69	1.00	0.60	1.01	1.01	0.45
Control Delay	80.2	36.4	32.9	74.0	74.0	0.9
Queue Delay	2.4	1.7	0.0	32.4	32.4	0.0
Total Delay	82.6	38.1	32.9	106.3	106.3	0.9
Queue Length 50th (ft)	116	~750	254	~548	~548	0
Queue Length 95th (ft)	m153	#916	306	#813	#813	0
Internal Link Dist (ft)		160	272		743	
Turn Bay Length (ft)						
Base Capacity (vph)	269	1855	2308	662	662	1583
Starvation Cap Reductn	48	12	0	0	0	0
Spillback Cap Reductn	0	0	1	94	94	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	1.01	0.60	1.18	1.18	0.45

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	4	568	283	126	679	22	263	173	78
v/c Ratio	0.03	0.68	0.33	0.78	0.63	0.02	0.74	0.32	0.19
Control Delay	30.8	21.6	3.1	56.2	13.2	0.1	36.9	4.7	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.8	21.6	3.1	56.2	13.2	0.1	36.9	4.7	17.7
Queue Length 50th (ft)	2	193	0	51	156	0	101	0	21
Queue Length 95th (ft)	10	#330	41	m#104	m#424	m0	173	36	50
Internal Link Dist (ft)		842			1019		447		1579
Turn Bay Length (ft)	200		200	200		200		200	
Base Capacity (vph)	134	839	868	161	1080	958	418	603	485
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.68	0.33	0.78	0.63	0.02	0.63	0.29	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	39	392	346	45	355	8	478	76	33	74
v/c Ratio	0.29	0.56	0.43	0.36	0.50	0.01	0.89	0.10	0.05	0.10
Control Delay	40.3	14.0	2.0	39.3	22.5	0.0	40.1	0.3	11.8	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.3	14.0	2.0	39.3	22.5	0.0	40.1	0.3	11.8	0.3
Queue Length 50th (ft)	12	83	0	19	134	0	172	0	8	0
Queue Length 95th (ft)	m26	#214	0	49	219	0	#338	0	22	0
Internal Link Dist (ft)		1019			822		448		1634	
Turn Bay Length (ft)	200		200	200		200		100		
Base Capacity (vph)	134	704	814	126	704	660	586	793	725	793
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.56	0.43	0.36	0.50	0.01	0.82	0.10	0.05	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	250	444	16	693	126	30	45	138	379
v/c Ratio	0.81	0.32	0.21	0.66	0.14	0.14	0.14	0.70	0.69
Control Delay	66.9	7.0	51.5	16.4	5.7	44.4	1.0	66.9	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.9	7.0	51.5	16.4	5.7	44.4	1.0	66.9	11.6
Queue Length 50th (ft)	186	86	12	324	25	20	0	102	0
Queue Length 95th (ft)	274	199	m15	m298	m20	48	0	168	90
Internal Link Dist (ft)		310		787		719		318	
Turn Bay Length (ft)	135		70		100				190
Base Capacity (vph)	361	1381	78	1052	919	282	370	252	593
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.32	0.21	0.66	0.14	0.11	0.12	0.55	0.64

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	542	165	114	876
v/c Ratio	0.77	0.17	0.31	1.24
Control Delay	17.9	5.8	15.3	135.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	17.9	5.8	15.3	135.1
Queue Length 50th (ft)	224	20	23	~310
Queue Length 95th (ft)	222	45	59	#514
Internal Link Dist (ft)	787	769	775	294
Turn Bay Length (ft)				
Base Capacity (vph)	702	955	366	709
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.77	0.17	0.31	1.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1652	619	517	2330	20	21	128
v/c Ratio	0.71	0.63	1.01	0.93	0.08	0.13	0.32
Control Delay	16.6	4.8	56.3	11.8	25.4	24.5	10.0
Queue Delay	0.0	0.0	0.0	0.9	0.0	0.0	0.0
Total Delay	16.6	4.8	56.3	12.8	25.4	24.5	10.0
Queue Length 50th (ft)	218	0	~131	~650	9	~22	9
Queue Length 95th (ft)	282	72	m#173	#764	25	26	50
Internal Link Dist (ft)	242			160		206	
Turn Bay Length (ft)							
Base Capacity (vph)	2320	977	510	2503	398	159	453
Starvation Cap Reductn	0	0	0	51	0	0	0
Spillback Cap Reductn	33	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.63	1.01	0.95	0.05	0.13	0.28

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	99	1041	2760	371	374	433
v/c Ratio	0.68	0.49	0.89	0.83	0.83	0.27
Control Delay	52.0	4.9	23.1	43.9	44.3	0.4
Queue Delay	0.0	1.7	0.8	9.0	9.5	0.0
Total Delay	52.0	6.5	23.9	52.9	53.8	0.4
Queue Length 50th (ft)	51	26	342	172	174	0
Queue Length 95th (ft)	m75	33	#451	#322	#325	0
Internal Link Dist (ft)		160	272		743	
Turn Bay Length (ft)						
Base Capacity (vph)	146	2137	3110	449	450	1583
Starvation Cap Reductn	0	871	0	0	0	0
Spillback Cap Reductn	0	0	131	55	55	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.82	0.93	0.94	0.95	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	8	609	593	162	668	15	228	202	45
v/c Ratio	0.06	0.73	0.57	0.67	0.58	0.01	0.76	0.39	0.12
Control Delay	34.4	25.2	4.0	36.2	7.9	0.0	43.7	6.0	18.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.4	25.2	4.0	36.2	7.9	0.0	43.7	6.0	18.9
Queue Length 50th (ft)	4	231	0	62	45	0	99	0	13
Queue Length 95th (ft)	17	#428	59	m104	m284	m0	168	46	36
Internal Link Dist (ft)		842			1019		447		1579
Turn Bay Length (ft)	200		200	200		200		200	
Base Capacity (vph)	125	836	1037	242	1157	1016	366	583	450
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.73	0.57	0.67	0.58	0.01	0.62	0.35	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	41	210	541	54	425	8	379	21	24	75
v/c Ratio	0.28	0.24	0.52	0.36	0.48	0.01	0.92	0.03	0.04	0.12
Control Delay	28.3	10.3	2.5	40.1	17.5	0.0	55.0	0.1	18.2	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.3	10.3	2.5	40.1	17.5	0.0	55.0	0.1	18.2	0.4
Queue Length 50th (ft)	15	26	0	25	150	0	168	0	8	0
Queue Length 95th (ft)	m26	m65	45	58	236	0	#324	0	24	0
Internal Link Dist (ft)		1019			822		448		1634	
Turn Bay Length (ft)	200		200	200		200		100		
Base Capacity (vph)	149	886	1036	153	889	806	431	621	572	621
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.24	0.52	0.35	0.48	0.01	0.88	0.03	0.04	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	539	620	24	565	299	21	70	67	275
v/c Ratio	0.90	0.43	0.28	0.68	0.38	0.13	0.29	0.51	0.69
Control Delay	56.5	6.9	56.0	28.1	12.5	49.5	5.8	64.2	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.5	6.9	56.0	28.1	12.5	49.5	5.8	64.2	15.4
Queue Length 50th (ft)	385	162	18	298	77	15	0	50	0
Queue Length 95th (ft)	#556	276	m26	m387	m98	39	17	94	80
Internal Link Dist (ft)		310		787		719		318	
Turn Bay Length (ft)	135		70		100				190
Base Capacity (vph)	650	1436	87	835	779	259	327	210	470
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.43	0.28	0.68	0.38	0.08	0.21	0.32	0.59

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	736	323	156	794
v/c Ratio	1.24	0.37	0.36	1.06
Control Delay	139.1	8.7	16.1	63.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	139.1	8.7	16.1	63.0
Queue Length 50th (ft)	~426	54	35	~210
Queue Length 95th (ft)	#929	101	79	#406
Internal Link Dist (ft)	787	769	775	294
Turn Bay Length (ft)				
Base Capacity (vph)	594	864	431	752
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.24	0.37	0.36	1.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2250	657	185	3358	65	65	254
v/c Ratio	0.78	0.60	0.49	1.25	0.28	0.30	0.82
Control Delay	19.0	3.4	51.9	134.3	47.9	48.2	58.0
Queue Delay	0.1	0.0	0.0	0.3	13.4	110.5	0.0
Total Delay	19.2	3.4	51.9	134.5	61.2	158.7	58.0
Queue Length 50th (ft)	453	0	69	~1713	47	47	145
Queue Length 95th (ft)	522	52	m92	m#1776	92	92	#284
Internal Link Dist (ft)	242			160		206	
Turn Bay Length (ft)							
Base Capacity (vph)	2871	1086	374	2680	270	216	309
Starvation Cap Reductn	0	0	0	301	0	0	0
Spillback Cap Reductn	82	0	0	0	180	180	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.60	0.49	1.41	0.72	1.81	0.82

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	149	1940	1457	668	668	730
v/c Ratio	0.69	1.05	0.63	1.01	1.01	0.46
Control Delay	79.4	49.1	33.4	74.0	74.0	1.0
Queue Delay	2.4	0.4	0.0	32.4	32.4	0.0
Total Delay	81.8	49.5	33.4	106.3	106.3	1.0
Queue Length 50th (ft)	116	~862	268	~548	~548	0
Queue Length 95th (ft)	m148	#982	323	#813	#813	0
Internal Link Dist (ft)		160	272		743	
Turn Bay Length (ft)						
Base Capacity (vph)	269	1855	2308	662	662	1583
Starvation Cap Reductn	48	2	0	0	0	0
Spillback Cap Reductn	0	0	1	94	94	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	1.05	0.63	1.18	1.18	0.46

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	4	622	497	126	1039	22	294	173	78
v/c Ratio	0.03	0.77	0.51	0.78	0.99	0.02	0.79	0.31	0.18
Control Delay	31.0	26.0	3.7	35.0	23.6	0.0	40.0	4.6	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.0	26.0	3.7	35.0	23.6	0.0	40.0	4.6	17.2
Queue Length 50th (ft)	2	232	0	51	278	0	112	0	21
Queue Length 95th (ft)	10	#410	53	m55	m#513	m0	#219	36	50
Internal Link Dist (ft)		842			1019		447		1579
Turn Bay Length (ft)	200		200	200		200		200	
Base Capacity (vph)	131	810	969	161	1052	936	415	603	482
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.77	0.51	0.78	0.99	0.02	0.71	0.29	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	39	424	367	45	402	8	791	76	33	74
v/c Ratio	0.31	0.67	0.47	0.36	0.63	0.01	1.37	0.10	0.06	0.09
Control Delay	41.9	17.3	2.4	39.3	26.8	0.0	198.2	0.2	11.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.9	17.3	2.4	39.3	26.8	0.0	198.2	0.2	11.9	0.2
Queue Length 50th (ft)	14	60	0	19	156	0	~460	0	8	0
Queue Length 95th (ft)	m23	m#216	m0	49	#282	0	#662	0	23	0
Internal Link Dist (ft)		1019			822		448		1634	
Turn Bay Length (ft)	200		200	200		200		100		
Base Capacity (vph)	126	636	782	126	636	606	579	793	555	793
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.67	0.47	0.36	0.63	0.01	1.37	0.10	0.06	0.09

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	250	444	16	693	126	30	45	138	379
v/c Ratio	0.81	0.32	0.21	0.66	0.14	0.14	0.14	0.70	0.69
Control Delay	66.9	7.0	51.5	16.4	5.7	44.4	1.0	66.9	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.9	7.0	51.5	16.4	5.7	44.4	1.0	66.9	11.6
Queue Length 50th (ft)	186	86	12	324	25	20	0	102	0
Queue Length 95th (ft)	274	199	m15	m298	m20	48	0	168	90
Internal Link Dist (ft)		310		787		719		318	
Turn Bay Length (ft)	135		70		100				190
Base Capacity (vph)	361	1381	78	1052	919	282	370	252	593
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.32	0.21	0.66	0.14	0.11	0.12	0.55	0.64

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	542	165	114	876
v/c Ratio	0.77	0.17	0.31	1.24
Control Delay	17.9	5.8	15.3	135.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	17.9	5.8	15.3	135.1
Queue Length 50th (ft)	224	20	23	~310
Queue Length 95th (ft)	222	45	59	#514
Internal Link Dist (ft)	787	769	775	294
Turn Bay Length (ft)				
Base Capacity (vph)	702	955	366	709
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.77	0.17	0.31	1.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1645	619	509	2304	18	18	128
v/c Ratio	0.71	0.63	1.00	0.92	0.10	0.23	0.32
Control Delay	16.5	4.8	53.2	11.2	28.5	29.4	10.0
Queue Delay	0.0	0.0	0.0	0.7	0.0	0.0	0.0
Total Delay	16.5	4.8	53.2	11.9	28.5	29.4	10.0
Queue Length 50th (ft)	216	0	128	~636	8	~18	9
Queue Length 95th (ft)	281	72	m#173	#751	23	23	50
Internal Link Dist (ft)	242			160		206	
Turn Bay Length (ft)							
Base Capacity (vph)	2319	977	510	2503	398	80	453
Starvation Cap Reductn	0	0	0	51	0	0	0
Spillback Cap Reductn	29	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.63	1.00	0.94	0.05	0.23	0.28

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	99	1029	2710	371	374	430
v/c Ratio	0.68	0.48	0.87	0.83	0.83	0.27
Control Delay	52.0	4.7	22.2	43.9	44.3	0.4
Queue Delay	0.0	1.6	0.5	7.1	7.5	0.0
Total Delay	52.0	6.3	22.7	51.0	51.9	0.4
Queue Length 50th (ft)	51	25	332	172	174	0
Queue Length 95th (ft)	m75	32	#403	#322	#325	0
Internal Link Dist (ft)		160	272		743	
Turn Bay Length (ft)						
Base Capacity (vph)	146	2137	3113	449	450	1583
Starvation Cap Reductn	0	874	0	0	0	0
Spillback Cap Reductn	0	0	125	49	49	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.81	0.91	0.93	0.93	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	8	566	395	162	587	15	222	202	45
v/c Ratio	0.06	0.67	0.42	0.67	0.51	0.01	0.75	0.40	0.12
Control Delay	34.4	22.9	3.4	37.9	7.2	0.0	42.8	6.0	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.4	22.9	3.4	37.9	7.2	0.0	42.8	6.0	19.0
Queue Length 50th (ft)	4	206	0	67	43	0	97	0	13
Queue Length 95th (ft)	17	#356	50	m#134	233	m0	163	46	36
Internal Link Dist (ft)		842			1019		447		1579
Turn Bay Length (ft)	200		200	200		200		200	
Base Capacity (vph)	125	840	930	242	1160	1019	366	583	451
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.67	0.42	0.67	0.51	0.01	0.61	0.35	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	41	201	508	54	423	8	301	21	24	75
v/c Ratio	0.28	0.21	0.48	0.35	0.44	0.01	0.82	0.04	0.05	0.14
Control Delay	28.1	9.6	2.2	39.4	16.1	0.0	43.8	0.1	18.7	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.1	9.6	2.2	39.4	16.1	0.0	43.8	0.1	18.7	0.5
Queue Length 50th (ft)	17	25	0	24	141	0	129	0	8	0
Queue Length 95th (ft)	m28	m67	39	58	235	0	#230	0	24	0
Internal Link Dist (ft)		1019			822		448		1634	
Turn Bay Length (ft)	200		200	200		200		100		
Base Capacity (vph)	149	945	1053	158	954	858	433	621	573	621
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.21	0.48	0.34	0.44	0.01	0.70	0.03	0.04	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	585	620	24	593	299	21	70	67	275
v/c Ratio	0.91	0.43	0.28	0.75	0.40	0.13	0.29	0.51	0.69
Control Delay	55.6	6.9	56.5	31.5	13.8	49.5	5.8	64.2	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.6	6.9	56.5	31.5	13.8	49.5	5.8	64.2	15.4
Queue Length 50th (ft)	412	162	19	324	83	15	0	50	0
Queue Length 95th (ft)	#636	276	m25	m411	m99	39	17	94	80
Internal Link Dist (ft)		310		787		719		318	
Turn Bay Length (ft)	135		70		100				190
Base Capacity (vph)	666	1436	87	789	740	259	327	210	470
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.43	0.28	0.75	0.40	0.08	0.21	0.32	0.59

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	736	323	156	823
v/c Ratio	1.24	0.37	0.36	1.08
Control Delay	139.1	8.7	16.1	69.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	139.1	8.7	16.1	69.3
Queue Length 50th (ft)	~426	54	35	~222
Queue Length 95th (ft)	#929	101	79	#422
Internal Link Dist (ft)	787	769	775	294
Turn Bay Length (ft)				
Base Capacity (vph)	594	864	430	765
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.24	0.37	0.36	1.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2220	657	177	3337	55	56	254
v/c Ratio	0.77	0.60	0.47	1.25	0.24	0.26	0.82
Control Delay	18.7	3.4	51.6	130.8	46.8	47.2	58.0
Queue Delay	0.1	0.0	0.0	0.3	8.5	110.7	0.0
Total Delay	18.7	3.4	51.6	131.1	55.3	157.9	58.0
Queue Length 50th (ft)	441	0	65	~1694	38	40	145
Queue Length 95th (ft)	509	52	m87	m#1756	81	82	#284
Internal Link Dist (ft)	242			160		206	
Turn Bay Length (ft)							
Base Capacity (vph)	2870	1086	374	2680	270	216	309
Starvation Cap Reductn	0	0	0	301	0	0	0
Spillback Cap Reductn	69	0	0	0	180	180	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.60	0.47	1.40	0.61	1.56	0.82

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	149	1891	1415	668	668	721
v/c Ratio	0.69	1.02	0.61	1.01	1.01	0.46
Control Delay	79.9	40.4	33.0	74.0	74.0	0.9
Queue Delay	2.4	1.4	0.0	32.4	32.4	0.0
Total Delay	82.4	41.8	33.0	106.3	106.3	0.9
Queue Length 50th (ft)	115	~820	259	~548	~548	0
Queue Length 95th (ft)	m149	#941	312	#813	#813	0
Internal Link Dist (ft)		160	272		743	
Turn Bay Length (ft)						
Base Capacity (vph)	269	1855	2309	662	662	1583
Starvation Cap Reductn	48	8	0	0	0	0
Spillback Cap Reductn	0	0	1	94	94	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	1.02	0.61	1.18	1.18	0.46

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	4	587	332	126	775	22	275	173	78
v/c Ratio	0.03	0.71	0.37	0.78	0.72	0.02	0.76	0.32	0.19
Control Delay	30.8	23.1	3.2	53.2	15.7	0.1	38.0	4.7	17.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.8	23.1	3.2	53.2	15.7	0.1	38.0	4.7	17.5
Queue Length 50th (ft)	2	206	0	52	207	0	105	0	21
Queue Length 95th (ft)	10	#376	44	m#84	m#457	m0	#187	36	50
Internal Link Dist (ft)		842			1019		447		1579
Turn Bay Length (ft)	200		200	200		200		200	
Base Capacity (vph)	134	827	887	161	1069	950	417	603	484
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.71	0.37	0.78	0.72	0.02	0.66	0.29	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	39	403	353	45	373	8	556	76	33	74
v/c Ratio	0.30	0.62	0.45	0.36	0.58	0.01	0.97	0.10	0.05	0.09
Control Delay	41.2	16.1	2.4	39.3	24.9	0.0	52.1	0.2	11.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.2	16.1	2.4	39.3	24.9	0.0	52.1	0.2	11.7	0.2
Queue Length 50th (ft)	12	75	0	19	142	0	221	0	8	0
Queue Length 95th (ft)	m26	m#265	m0	49	#237	0	#421	0	23	0
Internal Link Dist (ft)		1019			822		448		1634	
Turn Bay Length (ft)	200		200	200		200		100		
Base Capacity (vph)	129	647	780	126	647	614	584	793	718	793
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.62	0.45	0.36	0.58	0.01	0.95	0.10	0.05	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	277	444	16	735	126	30	45	138	379
v/c Ratio	0.84	0.32	0.21	0.71	0.14	0.14	0.14	0.70	0.69
Control Delay	69.0	7.0	51.2	17.9	6.0	44.4	1.0	66.9	11.6
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay	69.0	7.0	51.2	18.1	6.0	44.4	1.0	66.9	11.6
Queue Length 50th (ft)	204	86	13	358	27	20	0	102	0
Queue Length 95th (ft)	#329	199	m14	m311	m19	48	0	168	90
Internal Link Dist (ft)		310		787		719		318	
Turn Bay Length (ft)	135		70		100				190
Base Capacity (vph)	361	1381	78	1032	902	282	370	252	593
Starvation Cap Reductn	0	0	0	26	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.32	0.21	0.73	0.14	0.11	0.12	0.55	0.64

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	542	165	114	917
v/c Ratio	0.77	0.17	0.31	1.27
Control Delay	17.9	5.8	15.4	148.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	17.9	5.8	15.4	148.7
Queue Length 50th (ft)	224	20	23	~332
Queue Length 95th (ft)	222	45	60	#538
Internal Link Dist (ft)	787	769	775	294
Turn Bay Length (ft)				
Base Capacity (vph)	702	955	364	723
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.77	0.17	0.31	1.27

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1645	619	510	2308	18	19	128
v/c Ratio	0.71	0.63	1.00	0.92	0.10	0.24	0.32
Control Delay	16.5	4.8	53.7	11.3	28.5	29.8	10.0
Queue Delay	0.0	0.0	0.0	0.8	0.0	0.0	0.0
Total Delay	16.5	4.8	53.7	12.0	28.5	29.8	10.0
Queue Length 50th (ft)	216	0	128	~638	8	~20	9
Queue Length 95th (ft)	281	72	m#173	#754	23	24	50
Internal Link Dist (ft)	242			160		206	
Turn Bay Length (ft)							
Base Capacity (vph)	2319	977	510	2503	398	80	453
Starvation Cap Reductn	0	0	0	51	0	0	0
Spillback Cap Reductn	29	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.63	1.00	0.94	0.05	0.24	0.28

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	99	1030	2715	371	374	430
v/c Ratio	0.68	0.48	0.87	0.83	0.83	0.27
Control Delay	52.0	4.7	22.3	43.9	44.3	0.4
Queue Delay	0.0	1.6	0.6	7.4	7.8	0.0
Total Delay	52.0	6.3	22.8	51.3	52.2	0.4
Queue Length 50th (ft)	51	25	333	172	174	0
Queue Length 95th (ft)	m75	32	#406	#322	#325	0
Internal Link Dist (ft)		160	272		743	
Turn Bay Length (ft)						
Base Capacity (vph)	146	2137	3113	449	450	1583
Starvation Cap Reductn	0	874	0	0	0	0
Spillback Cap Reductn	0	0	125	50	50	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.82	0.91	0.93	0.94	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	8	571	407	162	592	15	223	202	45
v/c Ratio	0.06	0.68	0.43	0.67	0.51	0.01	0.75	0.40	0.12
Control Delay	34.4	23.1	3.4	37.8	7.2	0.0	42.9	6.0	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.4	23.1	3.4	37.8	7.2	0.0	42.9	6.0	19.0
Queue Length 50th (ft)	4	209	0	67	44	0	97	0	13
Queue Length 95th (ft)	17	#365	51	m#133	240	m0	164	46	36
Internal Link Dist (ft)		842			1019		447		1579
Turn Bay Length (ft)	200		200	200		200		200	
Base Capacity (vph)	125	839	937	242	1160	1019	366	583	451
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.68	0.43	0.67	0.51	0.01	0.61	0.35	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	41	202	511	54	423	8	305	21	24	75
v/c Ratio	0.28	0.21	0.49	0.35	0.45	0.01	0.82	0.04	0.05	0.13
Control Delay	28.2	9.7	2.2	39.4	16.2	0.0	44.2	0.1	18.7	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.2	9.7	2.2	39.4	16.2	0.0	44.2	0.1	18.7	0.5
Queue Length 50th (ft)	16	25	0	24	141	0	130	0	8	0
Queue Length 95th (ft)	m28	m67	40	58	235	0	#236	0	24	0
Internal Link Dist (ft)		1019			822		448		1634	
Turn Bay Length (ft)	200		200	200		200		100		
Base Capacity (vph)	149	941	1053	158	950	855	433	621	573	621
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.21	0.49	0.34	0.45	0.01	0.70	0.03	0.04	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	590	620	24	596	299	21	70	67	275
v/c Ratio	0.91	0.43	0.28	0.76	0.41	0.13	0.29	0.51	0.69
Control Delay	55.7	6.9	56.4	31.9	13.9	49.5	5.8	64.2	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.7	6.9	56.4	31.9	13.9	49.5	5.8	64.2	15.4
Queue Length 50th (ft)	414	162	19	334	83	15	0	50	0
Queue Length 95th (ft)	#644	276	m25	m415	m99	39	17	94	80
Internal Link Dist (ft)		310		787		719		318	
Turn Bay Length (ft)	135		70		100				190
Base Capacity (vph)	667	1436	87	785	735	259	327	210	470
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.43	0.28	0.76	0.41	0.08	0.21	0.32	0.59

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	736	323	156	825
v/c Ratio	1.24	0.37	0.36	1.08
Control Delay	139.1	8.7	16.1	69.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	139.1	8.7	16.1	69.7
Queue Length 50th (ft)	~426	54	35	~224
Queue Length 95th (ft)	#929	101	79	#423
Internal Link Dist (ft)	787	769	775	294
Turn Bay Length (ft)				
Base Capacity (vph)	594	864	430	766
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.24	0.37	0.36	1.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2224	657	178	3339	56	56	254
v/c Ratio	0.78	0.60	0.48	1.25	0.24	0.26	0.82
Control Delay	18.7	3.4	51.8	131.2	46.9	47.2	58.0
Queue Delay	0.1	0.0	0.0	0.3	8.8	110.7	0.0
Total Delay	18.8	3.4	51.8	131.4	55.8	157.9	58.0
Queue Length 50th (ft)	442	0	65	~1696	40	40	145
Queue Length 95th (ft)	510	52	m88	m#1761	82	82	#284
Internal Link Dist (ft)	242			160		206	
Turn Bay Length (ft)							
Base Capacity (vph)	2869	1086	374	2680	270	216	309
Starvation Cap Reductn	0	0	0	301	0	0	0
Spillback Cap Reductn	71	0	0	0	180	180	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.60	0.48	1.40	0.62	1.56	0.82

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	149	1896	1418	668	668	722
v/c Ratio	0.69	1.02	0.61	1.01	1.01	0.46
Control Delay	80.0	41.2	33.1	74.0	74.0	1.0
Queue Delay	2.4	1.5	0.0	32.4	32.4	0.0
Total Delay	82.5	42.6	33.1	106.3	106.3	1.0
Queue Length 50th (ft)	115	~824	260	~548	~548	0
Queue Length 95th (ft)	m150	#944	312	#813	#813	0
Internal Link Dist (ft)		160	272		743	
Turn Bay Length (ft)						
Base Capacity (vph)	269	1855	2309	662	662	1583
Starvation Cap Reductn	48	8	0	0	0	0
Spillback Cap Reductn	0	0	1	94	94	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	1.03	0.61	1.18	1.18	0.46

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	4	590	339	126	789	22	276	173	78
v/c Ratio	0.03	0.71	0.38	0.78	0.74	0.02	0.76	0.32	0.18
Control Delay	30.8	23.3	3.2	52.5	16.0	0.1	38.0	4.7	17.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.8	23.3	3.2	52.5	16.0	0.1	38.0	4.7	17.5
Queue Length 50th (ft)	2	208	0	52	216	0	105	0	21
Queue Length 95th (ft)	10	#378	44	m#81	m#461	m0	#188	36	50
Internal Link Dist (ft)		842			1019		447		1579
Turn Bay Length (ft)	200		200	200		200		200	
Base Capacity (vph)	134	826	890	161	1068	949	417	603	484
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.71	0.38	0.78	0.74	0.02	0.66	0.29	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	39	405	354	45	376	8	568	76	33	74
v/c Ratio	0.31	0.64	0.46	0.36	0.59	0.01	0.97	0.10	0.05	0.09
Control Delay	41.3	16.5	2.5	39.3	25.4	0.0	54.1	0.2	11.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.3	16.5	2.5	39.3	25.4	0.0	54.1	0.2	11.7	0.2
Queue Length 50th (ft)	13	73	0	19	144	0	229	0	8	0
Queue Length 95th (ft)	m25	m#265	m0	49	#242	0	#433	0	23	0
Internal Link Dist (ft)		1019			822		448		1634	
Turn Bay Length (ft)	200		200	200		200		100		
Base Capacity (vph)	126	636	774	126	636	606	583	793	718	793
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.64	0.46	0.36	0.59	0.01	0.97	0.10	0.05	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	280	444	16	739	126	30	45	138	379
v/c Ratio	0.84	0.32	0.21	0.72	0.14	0.14	0.14	0.70	0.69
Control Delay	69.3	7.0	51.5	18.1	6.1	44.4	1.0	66.9	11.6
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay	69.3	7.0	51.5	18.3	6.1	44.4	1.0	66.9	11.6
Queue Length 50th (ft)	207	86	13	362	27	20	0	102	0
Queue Length 95th (ft)	#335	199	m14	m312	m19	48	0	168	90
Internal Link Dist (ft)		310		787		719		318	
Turn Bay Length (ft)	135		70		100				190
Base Capacity (vph)	362	1381	78	1030	900	282	370	252	593
Starvation Cap Reductn	0	0	0	24	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.32	0.21	0.73	0.14	0.11	0.12	0.55	0.64

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	542	165	114	922
v/c Ratio	0.77	0.17	0.31	1.27
Control Delay	17.9	5.8	15.4	150.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	17.9	5.8	15.4	150.1
Queue Length 50th (ft)	224	20	23	~334
Queue Length 95th (ft)	222	45	60	#540
Internal Link Dist (ft)	787	769	775	294
Turn Bay Length (ft)				
Base Capacity (vph)	702	955	364	725
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	10	0	2
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.77	0.17	0.31	1.28

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2396	683	208	2466	68	69	534
v/c Ratio	1.02	0.67	0.90	0.80	0.17	0.18	1.05
Control Delay	48.2	5.0	57.2	10.6	25.7	25.8	83.2
Queue Delay	0.0	0.0	0.0	9.3	0.0	0.0	0.0
Total Delay	48.2	5.0	57.2	19.8	25.7	25.8	83.2
Queue Length 50th (ft)	~539	0	61	180	30	30	~297
Queue Length 95th (ft)	#669	66	m66	m198	65	65	#496
Internal Link Dist (ft)	1867			161		261	
Turn Bay Length (ft)							
Base Capacity (vph)	2345	1015	232	3101	472	378	507
Starvation Cap Reductn	0	0	0	635	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.67	0.90	1.00	0.14	0.18	1.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	249	1930	1888	568	568	610
v/c Ratio	0.91	0.73	0.94	0.91	0.91	0.96
Control Delay	72.3	10.5	40.7	49.0	49.0	52.4
Queue Delay	27.0	3.2	0.1	16.2	16.2	0.0
Total Delay	99.3	13.8	40.8	65.1	65.1	52.4
Queue Length 50th (ft)	0	130	298	317	317	297
Queue Length 95th (ft)	m0	m128	#381	#532	#532	#523
Internal Link Dist (ft)		161	3355		754	
Turn Bay Length (ft)						
Base Capacity (vph)	273	2649	2005	621	621	637
Starvation Cap Reductn	33	601	0	0	0	0
Spillback Cap Reductn	0	0	3	60	60	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.94	0.94	1.01	1.01	0.96

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1463	834	442	993	133	304
v/c Ratio	0.72	0.89	0.92	0.39	no cap	0.41
Control Delay	16.4	16.8	52.9	1.6		6.0
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	16.4	16.8	52.9	1.6	Error	6.0
Queue Length 50th (ft)	194	65	219	24	~177	0
Queue Length 95th (ft)	m142	m#86	#434	29	#296	39
Internal Link Dist (ft)	790			642	1579	
Turn Bay Length (ft)			300			500
Base Capacity (vph)	2041	939	502	2548	1	750
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.89	0.88	0.39	133.00	0.41

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	579	352	284	96	374	374	146
v/c Ratio	0.62	0.19	0.39	0.24	0.60	0.60	0.21
Control Delay	11.8	4.7	32.2	4.8	30.0	30.0	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	4.7	32.2	4.8	30.0	30.0	4.4
Queue Length 50th (ft)	30	12	83	1	198	198	0
Queue Length 95th (ft)	71	27	57	16	302	302	39
Internal Link Dist (ft)		642	297			1010	
Turn Bay Length (ft)	300				400		400
Base Capacity (vph)	940	1861	729	402	628	628	683
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.19	0.39	0.24	0.60	0.60	0.21

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	52	447	172	170	24	79
v/c Ratio	0.34	0.18	0.14	0.13	0.18	0.42
Control Delay	46.7	0.4	1.3	1.3	43.8	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.7	0.4	1.3	1.3	43.8	16.9
Queue Length 50th (ft)	30	0	10	10	14	0
Queue Length 95th (ft)	66	7	7	7	38	43
Internal Link Dist (ft)	501			396	912	
Turn Bay Length (ft)	200	200	200			100
Base Capacity (vph)	413	2460	1256	1260	471	459
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.18	0.14	0.13	0.05	0.17

Intersection Summary

Lane Group	EBL	EBT	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	285	148	179	11	79	357
v/c Ratio	0.14	0.10	0.65	0.09	0.44	0.17
Control Delay	1.5	0.3	47.3	43.6	48.6	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.5	0.3	47.3	43.6	48.6	0.7
Queue Length 50th (ft)	2	1	100	6	47	0
Queue Length 95th (ft)	37	3	159	24	90	14
Internal Link Dist (ft)		628	769	803	396	
Turn Bay Length (ft)	225					180
Base Capacity (vph)	2058	1500	367	344	343	2096
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.10	0.49	0.03	0.23	0.17

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	559	728	123	508	36	365
v/c Ratio	0.31	0.63	0.50	0.21	no cap	0.59
Control Delay	7.2	5.6	46.1	4.6		7.7
Queue Delay	0.0	0.7	0.0	0.0		0.0
Total Delay	7.2	6.3	46.1	4.6	Error	7.7
Queue Length 50th (ft)	36	69	73	41	~46	0
Queue Length 95th (ft)	47	117	132	50	#110	70
Internal Link Dist (ft)	469			628	1158	
Turn Bay Length (ft)			225			200
Base Capacity (vph)	1787	1159	247	2450	1	661
Starvation Cap Reductn	0	168	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.73	0.50	0.21	36.00	0.55

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	3210	911	266	3270	98	99	712
v/c Ratio	1.27	0.97	1.22	1.03	0.19	0.19	1.35
Control Delay	158.2	40.1	151.5	36.6	38.1	38.2	205.4
Queue Delay	0.3	0.0	0.0	28.5	0.2	0.2	0.0
Total Delay	158.5	40.1	151.5	65.1	38.4	38.4	205.4
Queue Length 50th (ft)	~1497	617	~163	~1248	71	72	~851
Queue Length 95th (ft)	#1572	#1058	m#133	m432	123	124	#1101
Internal Link Dist (ft)	1867			161		261	
Turn Bay Length (ft)							
Base Capacity (vph)	2518	937	218	3165	521	521	528
Starvation Cap Reductn	0	0	0	1002	0	0	0
Spillback Cap Reductn	274	0	0	0	130	130	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.43	0.97	1.22	1.51	0.25	0.25	1.35

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	332	2603	2468	757	757	818
v/c Ratio	1.23	0.97	1.14	1.11	1.11	1.22
Control Delay	164.7	7.7	110.7	109.0	109.0	146.0
Queue Delay	5.8	42.7	0.0	4.1	4.1	0.0
Total Delay	170.5	50.4	110.7	113.1	113.1	146.0
Queue Length 50th (ft)	~384	65	~792	~863	~863	~923
Queue Length 95th (ft)	m#249	m52	#861	#1127	#1127	#1181
Internal Link Dist (ft)		161	3355		754	
Turn Bay Length (ft)						
Base Capacity (vph)	270	2678	2173	682	682	673
Starvation Cap Reductn	88	629	0	0	0	0
Spillback Cap Reductn	0	0	2	274	274	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.82	1.27	1.14	1.86	1.86	1.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1871	1030	589	1427	177	436
v/c Ratio	0.85	1.12	1.13	0.53	no cap	0.79
Control Delay	21.1	76.0	111.9	1.6		41.6
Queue Delay	0.0	0.1	0.0	0.3		0.0
Total Delay	21.1	76.1	111.9	2.0	Error	41.6
Queue Length 50th (ft)	424	~728	~516	34	~285	118
Queue Length 95th (ft)	m328	m#976	#746	38	#430	#188
Internal Link Dist (ft)	790			642	1579	
Turn Bay Length (ft)			300			500
Base Capacity (vph)	2203	922	522	2713	1	555
Starvation Cap Reductn	0	23	0	606	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.85	1.15	1.13	0.68	177.00	0.79

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	733	429	385	127	546	546	195
v/c Ratio	0.77	0.25	0.63	0.34	0.76	0.76	0.25
Control Delay	16.9	5.9	48.6	6.9	37.3	37.3	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.9	5.9	48.6	6.9	37.3	37.3	3.7
Queue Length 50th (ft)	153	17	147	0	370	370	0
Queue Length 95th (ft)	m188	m34	190	26	524	524	44
Internal Link Dist (ft)		642	297			1010	
Turn Bay Length (ft)	300				400		400
Base Capacity (vph)	955	1728	607	376	720	720	789
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.25	0.63	0.34	0.76	0.76	0.25

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	100	518	288	286	25	65
v/c Ratio	0.52	0.21	0.23	0.23	0.19	0.38
Control Delay	50.7	0.4	1.1	1.1	46.4	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.7	0.4	1.1	1.1	46.4	17.8
Queue Length 50th (ft)	61	0	16	16	15	0
Queue Length 95th (ft)	109	7	6	5	41	41
Internal Link Dist (ft)	501			396	912	
Turn Bay Length (ft)	200	200	200			100
Base Capacity (vph)	414	2483	1232	1238	396	388
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.21	0.23	0.23	0.06	0.17

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	521	198	1	298	25	98	462
v/c Ratio	0.30	0.14	0.01	0.77	0.20	0.51	0.24
Control Delay	4.4	0.6	45.0	48.8	46.9	51.6	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.4	0.6	45.0	48.8	46.9	51.6	1.2
Queue Length 50th (ft)	4	1	1	174	15	61	0
Queue Length 95th (ft)	120	5	6	246	41	108	17
Internal Link Dist (ft)		628		769	803	396	
Turn Bay Length (ft)	225		100				180
Base Capacity (vph)	1752	1404	99	443	331	321	1911
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.14	0.01	0.67	0.08	0.31	0.24

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	745	954	164	701	48	487
v/c Ratio	0.42	0.80	0.69	0.29	no cap	0.87
Control Delay	9.0	12.3	56.4	5.2		32.8
Queue Delay	0.0	3.9	0.0	0.0		0.0
Total Delay	9.0	16.3	56.4	5.2	Error	32.8
Queue Length 50th (ft)	100	471	106	61	~64	136
Queue Length 95th (ft)	81	239	m#187	78	#139	#308
Internal Link Dist (ft)	469			628	1158	
Turn Bay Length (ft)			225			200
Base Capacity (vph)	1760	1189	237	2397	1	603
Starvation Cap Reductn	0	161	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.93	0.69	0.29	48.00	0.81

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2407	689	195	2466	63	63	535
v/c Ratio	1.03	0.68	0.84	0.80	0.16	0.17	1.06
Control Delay	49.3	5.0	52.0	10.6	25.5	25.6	83.8
Queue Delay	0.0	0.0	0.0	7.2	0.0	0.0	0.0
Total Delay	49.3	5.0	52.0	17.7	25.5	25.6	83.8
Queue Length 50th (ft)	~570	0	57	179	28	28	~298
Queue Length 95th (ft)	#674	66	m62	m198	61	61	#497
Internal Link Dist (ft)	1867			161		261	
Turn Bay Length (ft)							
Base Capacity (vph)	2347	1018	232	3101	472	378	507
Starvation Cap Reductn	0	0	0	610	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.68	0.84	0.99	0.13	0.17	1.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	257	1941	1866	564	564	624
v/c Ratio	0.94	0.73	0.93	0.91	0.91	0.98
Control Delay	75.5	10.5	39.3	48.0	48.0	57.2
Queue Delay	33.9	3.3	0.1	14.8	14.8	0.0
Total Delay	109.4	13.8	39.4	62.8	62.8	57.2
Queue Length 50th (ft)	0	129	294	314	314	309
Queue Length 95th (ft)	m0	m127	#373	#527	#527	#543
Internal Link Dist (ft)		161	3355		754	
Turn Bay Length (ft)						
Base Capacity (vph)	273	2649	2007	621	621	637
Starvation Cap Reductn	33	592	0	0	0	0
Spillback Cap Reductn	0	0	3	60	60	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.07	0.94	0.93	1.01	1.01	0.98

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1418	720	458	957	139	300
v/c Ratio	0.70	0.77	0.94	0.38	no cap	0.40
Control Delay	17.6	9.1	56.5	1.7		6.0
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	17.6	9.1	56.5	1.7	Error	6.0
Queue Length 50th (ft)	220	31	255	24	~185	0
Queue Length 95th (ft)	m147	m52	#456	30	#307	39
Internal Link Dist (ft)	790			642	1579	
Turn Bay Length (ft)			300			500
Base Capacity (vph)	2023	931	502	2548	1	747
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.77	0.91	0.38	139.00	0.40

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	543	311	268	98	362	363	151
v/c Ratio	0.58	0.17	0.37	0.24	0.58	0.58	0.22
Control Delay	10.2	4.1	32.6	5.3	29.5	29.5	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.2	4.1	32.6	5.3	29.5	29.5	4.4
Queue Length 50th (ft)	28	11	77	0	190	191	0
Queue Length 95th (ft)	42	17	52	17	290	291	39
Internal Link Dist (ft)		642	297			1010	
Turn Bay Length (ft)	300				400		400
Base Capacity (vph)	940	1861	729	403	628	628	686
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.17	0.37	0.24	0.58	0.58	0.22

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	51	434	172	170	24	79
v/c Ratio	0.34	0.18	0.14	0.13	0.18	0.42
Control Delay	46.7	0.4	1.3	1.3	43.8	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.7	0.4	1.3	1.3	43.8	16.9
Queue Length 50th (ft)	30	0	9	9	14	0
Queue Length 95th (ft)	65	7	7	7	38	43
Internal Link Dist (ft)	501			396	912	
Turn Bay Length (ft)	200	200	200			100
Base Capacity (vph)	413	2458	1257	1261	471	459
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.18	0.14	0.13	0.05	0.17

Intersection Summary

Lane Group	EBL	EBT	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	285	149	180	11	79	345
v/c Ratio	0.14	0.10	0.65	0.09	0.44	0.16
Control Delay	1.5	0.3	47.4	43.6	48.7	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.5	0.3	47.4	43.6	48.7	0.7
Queue Length 50th (ft)	2	1	101	6	47	0
Queue Length 95th (ft)	37	3	160	24	89	14
Internal Link Dist (ft)		628	769	803	396	
Turn Bay Length (ft)	225					180
Base Capacity (vph)	2058	1500	368	344	343	2092
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.10	0.49	0.03	0.23	0.16

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	560	690	125	492	38	372
v/c Ratio	0.31	0.61	0.51	0.20	no cap	0.60
Control Delay	7.1	5.0	46.3	4.5		7.7
Queue Delay	0.0	0.6	0.0	0.0		0.0
Total Delay	7.1	5.6	46.3	4.5	Error	7.7
Queue Length 50th (ft)	36	21	75	39	~49	0
Queue Length 95th (ft)	47	97	133	47	#115	71
Internal Link Dist (ft)	469			628	1158	
Turn Bay Length (ft)			225			200
Base Capacity (vph)	1787	1140	247	2450	1	667
Starvation Cap Reductn	0	161	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.70	0.51	0.20	38.00	0.56

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	52	455	173	171	25	79
v/c Ratio	0.34	0.18	0.14	0.14	0.18	0.42
Control Delay	46.7	0.4	1.3	1.3	44.0	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.7	0.4	1.3	1.3	44.0	16.9
Queue Length 50th (ft)	30	0	9	9	15	0
Queue Length 95th (ft)	66	7	7	7	39	43
Internal Link Dist (ft)	501			396	912	
Turn Bay Length (ft)	200	200	200			100
Base Capacity (vph)	413	2461	1256	1260	471	459
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.18	0.14	0.14	0.05	0.17

Intersection Summary

Lane Group	EBL	EBT	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	287	149	180	11	79	366
v/c Ratio	0.14	0.10	0.65	0.09	0.44	0.17
Control Delay	1.5	0.3	47.4	43.6	48.6	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.5	0.3	47.4	43.6	48.6	0.7
Queue Length 50th (ft)	2	1	101	6	47	0
Queue Length 95th (ft)	37	3	160	24	90	14
Internal Link Dist (ft)		628	769	803	396	
Turn Bay Length (ft)	225					180
Base Capacity (vph)	2058	1500	368	344	343	2098
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.10	0.49	0.03	0.23	0.17

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	563	721	125	513	38	374
v/c Ratio	0.32	0.62	0.51	0.21	no cap	0.60
Control Delay	7.2	5.5	46.3	4.6		7.8
Queue Delay	0.0	0.7	0.0	0.0		0.0
Total Delay	7.2	6.2	46.3	4.6	Error	7.8
Queue Length 50th (ft)	36	67	75	41	~49	0
Queue Length 95th (ft)	47	114	134	50	#115	72
Internal Link Dist (ft)	469			628	1158	
Turn Bay Length (ft)			225			200
Base Capacity (vph)	1787	1156	247	2450	1	668
Starvation Cap Reductn	0	167	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.73	0.51	0.21	38.00	0.56

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	3210	919	260	3289	84	84	713
v/c Ratio	1.27	0.98	1.19	1.04	0.16	0.16	1.35
Control Delay	157.6	42.1	140.4	39.4	37.6	37.6	206.2
Queue Delay	0.3	0.0	0.0	26.2	0.2	0.2	0.0
Total Delay	157.9	42.1	140.4	65.7	37.8	37.8	206.2
Queue Length 50th (ft)	~1497	640	~157	~1262	61	61	~853
Queue Length 95th (ft)	#1571	#1076	m#126	m429	108	108	#1103
Internal Link Dist (ft)	1867			161		261	
Turn Bay Length (ft)							
Base Capacity (vph)	2521	937	218	3165	521	521	528
Starvation Cap Reductn	0	0	0	992	0	0	0
Spillback Cap Reductn	284	0	0	0	130	130	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.43	0.98	1.19	1.51	0.21	0.21	1.35

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	342	2589	2488	752	752	833
v/c Ratio	1.27	0.97	1.14	1.10	1.10	1.24
Control Delay	179.3	6.6	113.7	106.5	106.5	154.8
Queue Delay	5.6	43.2	0.0	4.8	4.8	0.0
Total Delay	184.9	49.9	113.7	111.3	111.3	154.8
Queue Length 50th (ft)	~404	56	~803	~852	~852	~953
Queue Length 95th (ft)	m#275	m44	#871	#1114	#1114	#1211
Internal Link Dist (ft)		161	3355		754	
Turn Bay Length (ft)						
Base Capacity (vph)	270	2678	2176	682	682	673
Starvation Cap Reductn	86	622	0	0	0	0
Spillback Cap Reductn	0	0	2	301	301	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.86	1.26	1.14	1.97	1.97	1.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1891	961	610	1275	186	400
v/c Ratio	0.86	1.04	1.17	0.47	no cap	0.67
Control Delay	22.1	48.8	127.0	1.6		28.1
Queue Delay	0.0	10.0	0.0	0.2		0.0
Total Delay	22.1	58.9	127.0	1.9	Error	28.1
Queue Length 50th (ft)	473	~619	~569	34	~300	76
Queue Length 95th (ft)	m332	m#865	#782	38	#448	138
Internal Link Dist (ft)	790			642	1579	
Turn Bay Length (ft)			300			500
Base Capacity (vph)	2203	920	522	2713	1	599
Starvation Cap Reductn	0	23	0	627	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.86	1.07	1.17	0.61	186.00	0.67

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	724	415	358	130	483	484	201
v/c Ratio	0.76	0.24	0.59	0.34	0.67	0.67	0.25
Control Delay	16.9	6.2	47.4	6.9	33.2	33.2	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.9	6.2	47.4	6.9	33.2	33.2	3.7
Queue Length 50th (ft)	146	16	136	0	310	311	0
Queue Length 95th (ft)	m181	m34	168	27	442	443	44
Internal Link Dist (ft)		642	297			1010	
Turn Bay Length (ft)	300				400		400
Base Capacity (vph)	955	1728	607	379	720	720	792
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.24	0.59	0.34	0.67	0.67	0.25

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	100	477	288	286	25	65
v/c Ratio	0.52	0.19	0.23	0.23	0.19	0.38
Control Delay	50.7	0.3	0.9	0.9	46.4	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.7	0.3	0.9	0.9	46.4	17.8
Queue Length 50th (ft)	61	0	3	3	15	0
Queue Length 95th (ft)	109	7	5	5	41	41
Internal Link Dist (ft)	501			396	912	
Turn Bay Length (ft)	200	200	200			100
Base Capacity (vph)	414	2478	1232	1238	396	388
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.19	0.23	0.23	0.06	0.17

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	521	200	1	298	26	99	422
v/c Ratio	0.31	0.15	0.01	0.77	0.20	0.51	0.23
Control Delay	5.0	0.6	45.0	48.8	47.0	51.8	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.0	0.6	45.0	48.8	47.0	51.8	1.3
Queue Length 50th (ft)	6	2	1	174	16	62	7
Queue Length 95th (ft)	121	5	6	246	42	108	17
Internal Link Dist (ft)		628		769	803	396	
Turn Bay Length (ft)	225		100				180
Base Capacity (vph)	1672	1361	99	443	331	321	1820
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.15	0.01	0.67	0.08	0.31	0.23

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	747	920	166	657	50	496
v/c Ratio	0.42	0.77	0.70	0.27	no cap	0.86
Control Delay	8.4	10.6	56.1	4.8		30.2
Queue Delay	0.0	2.7	0.0	0.0		0.0
Total Delay	8.4	13.3	56.1	4.8	Error	30.2
Queue Length 50th (ft)	101	175	107	55	~67	124
Queue Length 95th (ft)	80	227	m#191	71	#144	#295
Internal Link Dist (ft)	469			628	1158	
Turn Bay Length (ft)			225			200
Base Capacity (vph)	1770	1190	237	2407	1	621
Starvation Cap Reductn	0	165	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.90	0.70	0.27	50.00	0.80

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2404	683	199	2463	66	66	534
v/c Ratio	1.03	0.67	0.86	0.79	0.17	0.17	1.05
Control Delay	49.2	5.0	53.6	10.6	25.6	25.7	83.2
Queue Delay	0.0	0.0	0.0	7.5	0.0	0.0	0.0
Total Delay	49.2	5.0	53.6	18.1	25.6	25.7	83.2
Queue Length 50th (ft)	~569	0	58	180	29	29	~297
Queue Length 95th (ft)	#673	66	m63	m200	63	63	#496
Internal Link Dist (ft)	1867			161		261	
Turn Bay Length (ft)							
Base Capacity (vph)	2345	1015	232	3101	472	378	507
Starvation Cap Reductn	0	0	0	618	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.67	0.86	0.99	0.14	0.17	1.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	249	1936	1865	567	567	612
v/c Ratio	0.91	0.73	0.93	0.91	0.91	0.96
Control Delay	72.0	10.5	39.4	48.7	48.7	53.0
Queue Delay	27.0	3.3	0.1	15.8	15.8	0.0
Total Delay	99.0	13.9	39.4	64.6	64.6	53.0
Queue Length 50th (ft)	0	130	293	316	316	299
Queue Length 95th (ft)	m0	m127	#373	#532	#532	#525
Internal Link Dist (ft)		161	3355		754	
Turn Bay Length (ft)						
Base Capacity (vph)	273	2649	2005	621	621	637
Starvation Cap Reductn	33	599	0	0	0	0
Spillback Cap Reductn	0	0	3	60	60	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.94	0.93	1.01	1.01	0.96

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1401	751	443	952	129	295
v/c Ratio	0.69	0.80	0.92	0.37	no cap	0.40
Control Delay	16.9	10.5	53.4	1.6		6.0
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	16.9	10.5	53.4	1.6	Error	6.0
Queue Length 50th (ft)	205	41	235	24	~172	0
Queue Length 95th (ft)	m144	m68	#433	29	#290	39
Internal Link Dist (ft)	790			642	1579	
Turn Bay Length (ft)			300			500
Base Capacity (vph)	2039	939	502	2548	1	743
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.80	0.88	0.37	129.00	0.40

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	516	334	279	87	354	355	141
v/c Ratio	0.55	0.18	0.38	0.22	0.56	0.57	0.21
Control Delay	10.0	4.1	32.6	5.3	29.1	29.1	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	4.1	32.6	5.3	29.1	29.1	4.4
Queue Length 50th (ft)	24	11	82	1	185	186	0
Queue Length 95th (ft)	40	19	55	15	283	284	38
Internal Link Dist (ft)		642	297			1010	
Turn Bay Length (ft)	300				400		400
Base Capacity (vph)	940	1861	729	395	628	628	680
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.18	0.38	0.22	0.56	0.57	0.21

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	52	455	173	171	25	79
v/c Ratio	0.34	0.18	0.14	0.14	0.18	0.42
Control Delay	46.7	0.4	1.3	1.3	44.0	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.7	0.4	1.3	1.3	44.0	16.9
Queue Length 50th (ft)	30	0	9	9	15	0
Queue Length 95th (ft)	66	7	7	7	39	43
Internal Link Dist (ft)	501			396	912	
Turn Bay Length (ft)	200	200	200			100
Base Capacity (vph)	413	2461	1256	1260	471	459
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.18	0.14	0.14	0.05	0.17

Intersection Summary

Lane Group	EBL	EBT	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	287	149	180	11	79	366
v/c Ratio	0.14	0.10	0.65	0.09	0.44	0.17
Control Delay	1.5	0.3	47.4	43.6	48.6	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.5	0.3	47.4	43.6	48.6	0.7
Queue Length 50th (ft)	2	1	101	6	47	0
Queue Length 95th (ft)	37	3	160	24	90	14
Internal Link Dist (ft)		628	769	803	396	
Turn Bay Length (ft)	225					180
Base Capacity (vph)	2058	1500	368	344	343	2098
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.10	0.49	0.03	0.23	0.17

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	563	721	125	513	38	374
v/c Ratio	0.32	0.62	0.51	0.21	no cap	0.60
Control Delay	7.2	5.5	46.3	4.6		7.8
Queue Delay	0.0	0.7	0.0	0.0		0.0
Total Delay	7.2	6.2	46.3	4.6	Error	7.8
Queue Length 50th (ft)	36	67	75	41	~49	0
Queue Length 95th (ft)	47	114	134	50	#115	72
Internal Link Dist (ft)	469			628	1158	
Turn Bay Length (ft)			225			200
Base Capacity (vph)	1787	1156	247	2450	1	668
Starvation Cap Reductn	0	167	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.73	0.51	0.21	38.00	0.56

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	3208	912	260	3273	89	89	712
v/c Ratio	1.27	0.97	1.19	1.03	0.17	0.17	1.35
Control Delay	157.9	40.1	140.6	37.1	37.8	37.8	205.4
Queue Delay	0.3	0.0	0.0	28.1	0.2	0.2	0.0
Total Delay	158.2	40.1	140.6	65.2	38.0	38.0	205.4
Queue Length 50th (ft)	~1496	618	~157	~1251	65	65	~851
Queue Length 95th (ft)	#1570	#1059	m#129	m433	112	112	#1101
Internal Link Dist (ft)	1867			161		261	
Turn Bay Length (ft)							
Base Capacity (vph)	2518	938	218	3165	521	521	528
Starvation Cap Reductn	0	0	0	992	0	0	0
Spillback Cap Reductn	275	0	0	0	130	130	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.43	0.97	1.19	1.51	0.23	0.23	1.35

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	332	2585	2457	756	756	815
v/c Ratio	1.23	0.97	1.13	1.11	1.11	1.21
Control Delay	164.9	6.8	108.3	108.5	108.5	144.2
Queue Delay	5.7	43.4	0.0	4.1	4.1	0.0
Total Delay	170.5	50.2	108.3	112.6	112.6	144.2
Queue Length 50th (ft)	~383	59	~785	~861	~861	~917
Queue Length 95th (ft)	m246	m47	#854	#1125	#1125	#1173
Internal Link Dist (ft)		161	3355		754	
Turn Bay Length (ft)						
Base Capacity (vph)	270	2678	2175	682	682	673
Starvation Cap Reductn	87	630	0	0	0	0
Spillback Cap Reductn	0	0	2	274	274	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.81	1.26	1.13	1.85	1.85	1.21

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1826	966	591	1285	173	397
v/c Ratio	0.83	1.05	1.13	0.47	no cap	0.67
Control Delay	20.9	50.4	113.7	1.6		28.3
Queue Delay	0.0	10.2	0.0	0.2		0.0
Total Delay	20.9	60.6	113.7	1.9	Error	28.3
Queue Length 50th (ft)	447	~623	~538	33	~279	76
Queue Length 95th (ft)	m284	m#868	#748	38	#424	137
Internal Link Dist (ft)	790			642	1579	
Turn Bay Length (ft)			300			500
Base Capacity (vph)	2203	922	522	2713	1	596
Starvation Cap Reductn	0	23	0	623	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.83	1.07	1.13	0.61	173.00	0.67

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	665	425	368	115	481	482	189
v/c Ratio	0.70	0.25	0.61	0.31	0.67	0.67	0.24
Control Delay	14.9	5.5	47.8	7.0	33.1	33.1	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.9	5.5	47.8	7.0	33.1	33.1	3.7
Queue Length 50th (ft)	129	16	140	0	308	309	0
Queue Length 95th (ft)	m155	m31	177	25	438	440	43
Internal Link Dist (ft)		642	297			1010	
Turn Bay Length (ft)	300				400		400
Base Capacity (vph)	955	1728	607	367	720	720	786
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.25	0.61	0.31	0.67	0.67	0.24

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	100	509	290	288	26	65
v/c Ratio	0.52	0.21	0.24	0.23	0.20	0.38
Control Delay	50.7	0.4	1.1	1.1	46.6	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.7	0.4	1.1	1.1	46.6	17.7
Queue Length 50th (ft)	61	0	16	16	16	0
Queue Length 95th (ft)	109	7	5	5	42	41
Internal Link Dist (ft)	501			396	912	
Turn Bay Length (ft)	200	200	200			100
Base Capacity (vph)	414	2482	1231	1238	396	388
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.21	0.24	0.23	0.07	0.17

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	525	199	1	299	25	98	453
v/c Ratio	0.30	0.14	0.01	0.77	0.20	0.51	0.24
Control Delay	4.5	0.6	45.0	48.7	46.9	51.6	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.5	0.6	45.0	48.7	46.9	51.6	1.2
Queue Length 50th (ft)	4	1	1	174	15	61	0
Queue Length 95th (ft)	121	5	6	248	41	108	17
Internal Link Dist (ft)		628		769	803	396	
Turn Bay Length (ft)	225		100				180
Base Capacity (vph)	1749	1404	99	443	331	321	1906
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.14	0.01	0.67	0.08	0.31	0.24

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	750	938	167	687	51	498
v/c Ratio	0.43	0.79	0.70	0.29	no cap	0.88
Control Delay	8.5	11.4	57.2	5.2		33.4
Queue Delay	0.0	3.3	0.0	0.0		0.0
Total Delay	8.5	14.8	57.2	5.2	Error	33.4
Queue Length 50th (ft)	100	176	107	59	~68	139
Queue Length 95th (ft)	81	231	m#192	75	#145	#315
Internal Link Dist (ft)	469			628	1158	
Turn Bay Length (ft)			225			200
Base Capacity (vph)	1759	1188	237	2396	1	609
Starvation Cap Reductn	0	163	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.92	0.70	0.29	51.00	0.82

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2405	683	200	2465	66	67	534
v/c Ratio	1.03	0.67	0.86	0.79	0.17	0.18	1.05
Control Delay	49.3	5.0	53.9	10.6	25.6	25.7	83.2
Queue Delay	0.0	0.0	0.0	7.8	0.0	0.0	0.0
Total Delay	49.3	5.0	53.9	18.4	25.6	25.7	83.2
Queue Length 50th (ft)	~570	0	58	180	29	29	~297
Queue Length 95th (ft)	#674	66	m64	m199	63	64	#496
Internal Link Dist (ft)	1867			161		261	
Turn Bay Length (ft)							
Base Capacity (vph)	2345	1015	232	3101	472	378	507
Starvation Cap Reductn	0	0	0	620	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.67	0.86	0.99	0.14	0.18	1.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	249	1937	1870	567	567	612
v/c Ratio	0.91	0.73	0.93	0.91	0.91	0.96
Control Delay	71.9	10.6	39.7	48.7	48.7	53.0
Queue Delay	27.0	3.3	0.1	15.8	15.8	0.0
Total Delay	99.0	13.9	39.7	64.6	64.6	53.0
Queue Length 50th (ft)	0	130	295	316	316	299
Queue Length 95th (ft)	m0	m128	#375	#532	#532	#525
Internal Link Dist (ft)		161	3355		754	
Turn Bay Length (ft)						
Base Capacity (vph)	273	2649	2005	621	621	637
Starvation Cap Reductn	33	599	0	0	0	0
Spillback Cap Reductn	0	0	3	60	60	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.94	0.93	1.01	1.01	0.96

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1408	759	443	955	129	296
v/c Ratio	0.69	0.81	0.92	0.37	no cap	0.40
Control Delay	16.9	11.0	53.3	1.6		6.0
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	16.9	11.0	53.3	1.6	Error	6.0
Queue Length 50th (ft)	204	43	234	24	~172	0
Queue Length 95th (ft)	m144	m74	#433	29	#290	38
Internal Link Dist (ft)	790			642	1579	
Turn Bay Length (ft)			300			500
Base Capacity (vph)	2039	939	502	2548	1	744
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.81	0.88	0.37	129.00	0.40

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	520	337	279	87	355	356	141
v/c Ratio	0.55	0.18	0.38	0.22	0.57	0.57	0.21
Control Delay	10.2	4.2	32.6	5.4	29.1	29.2	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.2	4.2	32.6	5.4	29.1	29.2	4.4
Queue Length 50th (ft)	24	11	82	1	186	187	0
Queue Length 95th (ft)	43	20	55	15	284	285	38
Internal Link Dist (ft)		642	297			1010	
Turn Bay Length (ft)	300				400		400
Base Capacity (vph)	940	1861	729	395	628	628	680
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.18	0.38	0.22	0.57	0.57	0.21

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	52	457	173	171	25	79
v/c Ratio	0.34	0.19	0.14	0.14	0.18	0.42
Control Delay	46.7	0.4	1.3	1.3	44.0	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.7	0.4	1.3	1.3	44.0	16.9
Queue Length 50th (ft)	30	0	9	9	15	0
Queue Length 95th (ft)	66	7	7	7	39	43
Internal Link Dist (ft)	501			396	912	
Turn Bay Length (ft)	200	200	200			100
Base Capacity (vph)	413	2461	1256	1260	471	459
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.19	0.14	0.14	0.05	0.17

Intersection Summary

Lane Group	EBL	EBT	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	287	149	180	11	79	367
v/c Ratio	0.14	0.10	0.65	0.09	0.44	0.17
Control Delay	1.5	0.3	47.4	43.6	48.6	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.5	0.3	47.4	43.6	48.6	0.7
Queue Length 50th (ft)	2	1	101	6	47	0
Queue Length 95th (ft)	37	3	160	24	90	14
Internal Link Dist (ft)		628	769	803	396	
Turn Bay Length (ft)	225					180
Base Capacity (vph)	2058	1500	368	344	343	2099
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.10	0.49	0.03	0.23	0.17

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	563	724	125	514	38	374
v/c Ratio	0.32	0.63	0.51	0.21	no cap	0.60
Control Delay	7.2	5.6	46.3	4.6		7.8
Queue Delay	0.0	0.7	0.0	0.0		0.0
Total Delay	7.2	6.3	46.3	4.6	Error	7.8
Queue Length 50th (ft)	36	68	75	42	~49	0
Queue Length 95th (ft)	47	116	134	50	#115	72
Internal Link Dist (ft)	469			628	1158	
Turn Bay Length (ft)			225			200
Base Capacity (vph)	1787	1157	247	2450	1	668
Starvation Cap Reductn	0	169	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.73	0.51	0.21	38.00	0.56

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	3209	912	261	3274	89	90	712
v/c Ratio	1.27	0.97	1.20	1.03	0.17	0.17	1.35
Control Delay	158.1	40.1	142.4	37.2	37.8	37.8	205.4
Queue Delay	0.3	0.0	0.0	28.0	0.2	0.2	0.0
Total Delay	158.3	40.1	142.4	65.3	38.0	38.0	205.4
Queue Length 50th (ft)	~1496	618	~158	~1251	65	66	~851
Queue Length 95th (ft)	#1571	#1059	m#129	m433	112	113	#1101
Internal Link Dist (ft)	1867			161		261	
Turn Bay Length (ft)							
Base Capacity (vph)	2518	938	218	3165	521	521	528
Starvation Cap Reductn	0	0	0	992	0	0	0
Spillback Cap Reductn	275	0	0	0	130	130	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.43	0.97	1.20	1.51	0.23	0.23	1.35

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	332	2588	2460	756	756	816
v/c Ratio	1.23	0.97	1.13	1.11	1.11	1.21
Control Delay	164.9	6.9	108.9	108.5	108.5	144.8
Queue Delay	5.7	43.3	0.0	4.1	4.1	0.0
Total Delay	170.5	50.2	108.9	112.6	112.6	144.8
Queue Length 50th (ft)	~383	60	~787	~861	~861	~919
Queue Length 95th (ft)	m246	m47	#856	#1125	#1125	#1175
Internal Link Dist (ft)		161	3355		754	
Turn Bay Length (ft)						
Base Capacity (vph)	270	2678	2175	682	682	673
Starvation Cap Reductn	87	629	0	0	0	0
Spillback Cap Reductn	0	0	2	274	274	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.81	1.26	1.13	1.85	1.85	1.21

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1829	971	591	1295	173	400
v/c Ratio	0.83	1.05	1.13	0.48	no cap	0.67
Control Delay	20.9	52.2	113.7	1.6		29.2
Queue Delay	0.0	10.4	0.0	0.2		0.0
Total Delay	20.9	62.6	113.7	1.9	Error	29.2
Queue Length 50th (ft)	446	~630	~537	33	~279	80
Queue Length 95th (ft)	m288	m#877	#746	38	#424	141
Internal Link Dist (ft)	790			642	1579	
Turn Bay Length (ft)			300			500
Base Capacity (vph)	2203	922	522	2713	1	593
Starvation Cap Reductn	0	23	0	622	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.83	1.08	1.13	0.62	173.00	0.67

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	667	426	370	115	486	486	189
v/c Ratio	0.70	0.25	0.61	0.31	0.68	0.68	0.24
Control Delay	15.0	5.5	47.9	7.0	33.3	33.3	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	5.5	47.9	7.0	33.3	33.3	3.7
Queue Length 50th (ft)	130	16	141	0	312	312	0
Queue Length 95th (ft)	m156	m31	178	25	446	446	43
Internal Link Dist (ft)		642	297			1010	
Turn Bay Length (ft)	300				400		400
Base Capacity (vph)	955	1728	607	367	720	720	786
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.25	0.61	0.31	0.68	0.68	0.24

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	100	512	290	288	26	65
v/c Ratio	0.52	0.21	0.24	0.23	0.20	0.38
Control Delay	50.7	0.4	1.1	1.1	46.6	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.7	0.4	1.1	1.1	46.6	17.7
Queue Length 50th (ft)	61	0	16	16	16	0
Queue Length 95th (ft)	109	7	6	5	42	41
Internal Link Dist (ft)	501			396	912	
Turn Bay Length (ft)	200	200	200			100
Base Capacity (vph)	414	2482	1231	1238	396	388
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.21	0.24	0.23	0.07	0.17

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	525	199	1	299	25	98	457
v/c Ratio	0.30	0.14	0.01	0.77	0.20	0.51	0.24
Control Delay	4.5	0.6	45.0	48.7	46.9	51.7	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.5	0.6	45.0	48.7	46.9	51.7	1.2
Queue Length 50th (ft)	4	1	1	174	15	60	0
Queue Length 95th (ft)	121	5	6	248	41	107	17
Internal Link Dist (ft)		628		769	803	396	
Turn Bay Length (ft)	225		100				180
Base Capacity (vph)	1749	1404	99	443	331	321	1907
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.14	0.01	0.67	0.08	0.31	0.24

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	750	940	167	690	51	498
v/c Ratio	0.43	0.79	0.70	0.29	no cap	0.88
Control Delay	8.5	11.5	57.2	5.2		33.9
Queue Delay	0.0	3.5	0.0	0.0		0.0
Total Delay	8.5	15.1	57.2	5.2	Error	33.9
Queue Length 50th (ft)	100	176	108	60	~68	140
Queue Length 95th (ft)	80	232	m#193	76	#145	#317
Internal Link Dist (ft)	469			628	1158	
Turn Bay Length (ft)			225			200
Base Capacity (vph)	1758	1187	237	2395	1	607
Starvation Cap Reductn	0	164	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.92	0.70	0.29	51.00	0.82

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Cumul With Bridge Alternative AM Pk Hr - With Mitigation Measures

Scenario Report

Scenario:	Cumul + Bridge Alt AM
Command:	Cumul + Bridge Alt AM
Volume:	Cumul Bridge Alt AM
Geometry:	Cumul Proj
Impact Fee:	Default Impact Fee
Trip Generation:	AM Pk Hr
Trip Distribution:	Cumul With Bridge AM
Paths:	Cumul Bridge Alt
Routes:	Default Route
Configuration:	Default Configuration

Cumul With Bridge Alternative AM Pk Hr - With Mitigation Measures

Trip Generation Report

Forecast for AM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	750.00	ElemSchStudent	0.25	0.20	188	150	338	24.1
1	Village West	738.00	Tra Vigne SFDU	0.18	0.53	133	391	524	37.3
1	Village West	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	0.60	0.36	0	0	0	0.0
1	Village West	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt MFDU	0.10	0.41	0	0	0	0.0
1	Village West	1.00	Tra V Internal	-6.00	-6.00	-6	-6	-12	-0.9
1	Village West	0.00	GP Alt Interna	-7.00	-7.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-11.00	-7.00	0	0	0	0.0
1	Village West	0.00	Tra Vigne MFDU	0.10	0.40	0	0	0	0.0
	Zone 1 Subtotal					315	535	850	60.5
2	Village East	418.00	Tra Vigne SFDU	0.18	0.53	75	222	297	21.1
2	Village East	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
	Zone 2 Subtotal					75	222	297	21.1
3	Commercial	101.50	Tra V Comm KSF	0.60	0.36	61	37	98	7.0
3	Commercial	1.00	Tra V Pass-By	-9.00	-5.00	-9	-5	-14	-1.0
	Zone 3 Subtotal					52	32	84	6.0
4	Industrial	21.40	Indust KSF	0.15	0.03	3	1	4	0.3
	Zone 4 Subtotal					3	1	4	0.3
5	Hi Dens Res	340.00	Tra Vigne MFDU	0.10	0.40	34	136	170	12.1
	Zone 5 Subtotal					34	136	170	12.1
TOTAL						479	926	1405	100.0

Traffix 8.0.0715 (c) 2008 Dowling Assoc. Licensed to kdANDERSON TRANSP.

Cumul With Bridge Alternative AM Pk Hr - With Mitigation Measures

Trip Distribution Report

Percent Of Trips Cumul With Bridge AM

Zone	To Gates 1	2	3	4	5	6	7	8	9	10	11
1	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	1.0
2	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	1.0
3	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	1.0
4	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	1.0
5	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	1.0

Zone	To Gates 12	13	14	15	16	19	20	21	22	23	24
1	5.0	12.0	1.0	2.0	3.0	17.0	3.0	5.0	3.0	12.0	6.0
2	5.0	12.0	1.0	2.0	3.0	17.0	3.0	5.0	3.0	12.0	6.0
3	5.0	12.0	1.0	2.0	3.0	17.0	3.0	5.0	3.0	12.0	6.0
4	5.0	12.0	1.0	2.0	3.0	17.0	3.0	5.0	3.0	12.0	6.0
5	5.0	12.0	1.0	2.0	3.0	17.0	3.0	5.0	3.0	12.0	6.0

Zone	To Gates 25	26
1	0.0	2.0
2	0.0	2.0
3	0.0	2.0
4	0.0	2.0
5	0.0	2.0

Cumul With Bridge Alternative AM Pk Hr - With Mitigation Measures

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Del/ Veh	V/ C	Future LOS	Del/ Veh	V/ C	Change in
# 5 Eight Mile & Lower Sacto Rd	C	34.0	0.808	D	35.0	0.842	+ 0.984 D/V
# 8 Eight Mile Rd & West Ln	D	37.8	0.859	D	40.5	0.912	+ 2.767 D/V

Cumul With Bridge Alternative AM Pk Hr - With Mitigation Measures

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]

Cumul With Bridge Alternative AM Pk Hr - With Mitigation Measures

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.842
Loss Time (sec):	12	Average Delay (sec/veh):	35.0
Optimal Cycle:	88	Level Of Service:	D

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	4 0	1	2 0	4 0	1
Volume Module:	AM Pk Hr											
Base Vol:	105	375	236	556	582	105	130	1415	86	462	1434	296
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	105	375	236	556	582	105	130	1415	86	462	1434	296
Added Vol:	0	0	14	10	0	0	0	48	0	28	93	19
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	105	375	250	566	582	105	130	1463	86	490	1527	315
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	114	408	272	615	633	114	141	1590	93	533	1660	342
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	114	408	272	615	633	114	141	1590	93	533	1660	342
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	114	408	272	615	633	114	141	1590	93	533	1660	342
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.12	0.17	0.18	0.18	0.07	0.04	0.23	0.06	0.16	0.24	0.22
Crit Moves:			****	****				****		****		
Green/Cycle:	0.07	0.20	0.20	0.21	0.35	0.35	0.07	0.28	0.28	0.18	0.40	0.40
Volume/Cap:	0.51	0.56	0.84	0.84	0.51	0.21	0.62	0.84	0.21	0.84	0.62	0.55
Delay/Veh:	47.1	36.9	56.0	46.5	26.0	22.8	50.5	37.6	27.9	49.3	24.6	24.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.1	36.9	56.0	46.5	26.0	22.8	50.5	37.6	27.9	49.3	24.6	24.2
LOS by Move:	D	D	E	D	C	C	D	D	C	D	C	C
HCM2k95thQ:	125	305	485	538	354	108	163	659	104	490	478	354

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr - With Mitigation Measures

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	0	1	2	0 2	0	1	2	0 4	0	1	2	0 4	0	1
Lane Group:	L	T		R	L	T		R	L	T		R	L	T		R
#LnsInGrps:	2	2		1	2	2		1	2	4		1	2	4		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative AM Pk Hr - With Mitigation Measures

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.07	0.20	0.20		0.21	0.35	0.35		0.07	0.28	0.28		0.18	0.40	0.40	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.96	0.98		0.98	0.88	0.84		0.99	0.97	0.89		0.98	0.88	0.86	
Q1:		1.6	5.1	7.1	8.3	6.5	1.9		2.0	11.1	1.8	7.3	8.9	6.3		
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:		0.9	1.2	3.5	3.6	1.0	0.3		1.3	3.9	0.3	3.5	1.5	1.2		
HCM2KQueue:		2.5	6.4	10.6	11.9	7.5	2.1		3.3	15.0	2.0	10.7	10.4	7.5		
70th%Factor:	1.19	1.19	1.18		1.17	1.18	1.19		1.19	1.17	1.20		1.18	1.18	1.18	
HCM2k70thQ:		3.0	7.5	12.5	14.0	8.8	2.5		3.9	17.5	2.4	12.6	12.3	8.8		
85th%Factor:	1.58	1.54	1.51		1.50	1.53	1.58		1.57	1.48	1.58		1.51	1.51	1.53	
HCM2k85thQ:		3.9	9.8	16.0	17.8	11.4	3.3		5.1	22.2	3.2	16.2	15.7	11.5		
90th%Factor:	1.75	1.69	1.64		1.62	1.68	1.76		1.74	1.59	1.76		1.63	1.64	1.68	
HCM2k90thQ:		4.3	10.7	17.3	19.3	12.5	3.7		5.7	23.8	3.6	17.5	17.1	12.5		
95th%Factor:	2.02	1.92	1.83		1.81	1.90	2.03		2.00	1.76	2.04		1.83	1.84	1.90	
HCM2k95thQ:		5.0	12.2	19.4	21.5	14.2	4.3		6.5	26.4	4.2	19.6	19.1	14.2		
98th%Factor:	2.53	2.31	2.14		2.10	2.26	2.55		2.48	2.02	2.55		2.14	2.15	2.26	
HCM2k98thQ:		6.3	14.7	22.7	25.0	16.9	5.4		8.1	30.2	5.2	22.9	22.4	16.9		

Cumul With Bridge Alternative AM Pk Hr - With Mitigation Measures

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.912
Loss Time (sec): 12 | Average Delay (sec/veh): 40.5
Optimal Cycle: 116 | Level Of Service: D

Street Name: West Lane | Eight Mile Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	3	0 2	0 1		2	0 2	0 1		2	0 3	1 0		2	0 3	1 0	
Volume Module:	AM Pk Hr															
Base Vol:	496	381	67		130	831	407		430	1309	483		154	1305	58	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	496	381	67		130	831	407		430	1309	483		154	1305	58	
Added Vol:	46	32	42		19	6	0		0	48	24		66	92	33	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	542	413	109		149	837	407		430	1357	507		220	1397	91	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	589	449	118		162	910	442		467	1475	551		239	1518	99	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	589	449	118		162	910	442		467	1475	551		239	1518	99	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	589	449	118		162	910	442		467	1475	551		239	1518	99	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.86	0.86		0.90	0.88	0.88	
Lanes:	3.00	2.00	1.00		2.00	2.00	1.00		2.00	3.00	1.00		2.00	3.76	0.24	
Final Sat.:	5147	3538	1583		3432	3538	1583		3432	4875	1625		3432	6306	411	
Capacity Analysis Module:																
Vol/Sat:	0.11	0.13	0.07		0.05	0.26	0.28		0.14	0.30	0.34		0.07	0.24	0.24	
Crit Moves:	****						****				****		****			
Green/Cycle:	0.13	0.31	0.31		0.12	0.31	0.31		0.16	0.37	0.37		0.08	0.29	0.29	
Volume/Cap:	0.91	0.40	0.24		0.40	0.84	0.91		0.84	0.81	0.91		0.91	0.84	0.84	
Delay/Veh:	60.5	27.1	25.6		41.6	38.3	54.9		51.7	30.5	36.1		79.1	37.1	37.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	60.5	27.1	25.6		41.6	38.3	54.9		51.7	30.5	36.1		79.1	37.1	37.1	
LOS by Move:	E	C	C		D	D	D		D	C	D		E	D	D	
HCM2k95thQ:	342	240	115		138	694	730		451	708	896		226	596	596	

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr - With Mitigation Measures

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	3	0 2	0 1		2	0 2	0 1		2	0 3	1 0		2	0 3	1 0	
Lane Group:	L	T	R		L	T	R		L	RT	RT		L	RT	RT	
#LnsInGrps:	3	2	1		2	2	1		2	4	4		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.96	0.96		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.94	0.94		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.86	0.86		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative AM Pk Hr - With Mitigation Measures

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.13	0.31	0.31	0.12	0.31	0.31	0.16	0.37	0.37	0.08	0.29	0.29
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.89	0.87	0.97	0.96	0.98	0.99	0.94	0.97	1.00	0.97	0.97
Q1:	5.5	4.6	2.1	2.1	12.0	11.6	6.4	12.7	15.5	3.4	11.2	11.2
UpstreamVC:	0.42	0.42	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.34	0.34
UpstreamAdj:	0.91	0.91	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.95	0.95	0.95
EarlyArrAdj:	0.27	0.49	0.44	1.00	1.00	1.00	1.00	1.00	1.00	0.21	0.48	0.48
Q2:	1.7	0.3	0.1	0.6	3.9	5.2	3.3	3.6	5.8	1.2	2.1	2.1
HCM2KQueue:	7.2	4.9	2.3	2.7	15.9	16.8	9.8	16.2	21.3	4.6	13.3	13.3
70th%Factor:	1.18	1.19	1.19	1.19	1.17	1.17	1.18	1.17	1.16	1.19	1.17	1.17
HCM2k70thQ:	8.5	5.8	2.7	3.3	18.5	19.6	11.5	19.0	24.7	5.5	15.6	15.6
85th%Factor:	1.54	1.55	1.58	1.57	1.48	1.47	1.52	1.47	1.45	1.56	1.49	1.49
HCM2k85thQ:	11.1	7.6	3.6	4.3	23.4	24.8	14.8	24.0	30.8	7.2	19.9	19.9
90th%Factor:	1.68	1.71	1.76	1.75	1.58	1.57	1.65	1.58	1.54	1.72	1.61	1.61
HCM2k90thQ:	12.1	8.4	4.0	4.8	25.1	26.5	16.0	25.6	32.7	7.9	21.4	21.4
95th%Factor:	1.90	1.96	2.03	2.02	1.75	1.74	1.85	1.74	1.68	1.96	1.79	1.79
HCM2k95thQ:	13.7	9.6	4.6	5.5	27.7	29.2	18.0	28.3	35.8	9.0	23.8	23.8
98th%Factor:	2.27	2.39	2.54	2.51	2.00	1.97	2.17	1.99	1.89	2.40	2.06	2.06
HCM2k98thQ:	16.4	11.7	5.7	6.9	31.7	33.2	21.2	32.3	40.3	11.0	27.5	27.5

Cumul With Bridge Alternative AM Pk Hr - With Mitigation Measures

Future Queue Length Report (feet)

Node	Intersection	Northbound L	-- T	-- R	Southbound L	-- T	-- R	Eastbound L	-- T	-- R	Westbound L	-- T	-- R
#5	[HCM2k95thQ]:	125	305	485	538	354	108	163	659	104	490	478	354
#8	[HCM2k95thQ]:	342	240	115	138	694	730	451	708	896	226	596	596

Cumul With Bridge Alternative AM Pk Hr

Scenario Report

Scenario:	Cumul + Bridge Alt AM
Command:	Cumul + Bridge Alt AM
Volume:	Cumul Bridge Alt AM
Geometry:	Cumul Proj
Impact Fee:	Default Impact Fee
Trip Generation:	AM Pk Hr
Trip Distribution:	Cumul With Bridge AM
Paths:	Cumul Bridge Alt
Routes:	Default Route
Configuration:	Default Configuration

Cumul With Bridge Alternative AM Pk Hr

Trip Generation Report

Forecast for AM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	750.00	ElemSchStudent	0.25	0.20	188	150	338	24.1
1	Village West	738.00	Tra Vigne SFDU	0.18	0.53	133	391	524	37.3
1	Village West	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	0.60	0.36	0	0	0	0.0
1	Village West	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt MFDU	0.10	0.41	0	0	0	0.0
1	Village West	1.00	Tra V Internal	-6.00	-6.00	-6	-6	-12	-0.9
1	Village West	0.00	GP Alt Interna	-7.00	-7.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-11.00	-7.00	0	0	0	0.0
1	Village West	0.00	Tra Vigne MFDU	0.10	0.40	0	0	0	0.0
	Zone 1 Subtotal					315	535	850	60.5
2	Village East	418.00	Tra Vigne SFDU	0.18	0.53	75	222	297	21.1
2	Village East	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
	Zone 2 Subtotal					75	222	297	21.1
3	Commercial	101.50	Tra V Comm KSF	0.60	0.36	61	37	98	7.0
3	Commercial	1.00	Tra V Pass-By	-9.00	-5.00	-9	-5	-14	-1.0
	Zone 3 Subtotal					52	32	84	6.0
4	Industrial	21.40	Indust KSF	0.15	0.03	3	1	4	0.3
	Zone 4 Subtotal					3	1	4	0.3
5	Hi Dens Res	340.00	Tra Vigne MFDU	0.10	0.40	34	136	170	12.1
	Zone 5 Subtotal					34	136	170	12.1
TOTAL						479	926	1405	100.0

Cumul With Bridge Alternative AM Pk Hr

Trip Distribution Report

Percent Of Trips Cumul With Bridge AM

To Gates

Zone	1	2	3	4	5	6	7	8	9	10	11
1	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	1.0
2	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	1.0
3	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	1.0
4	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	1.0
5	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	1.0

To Gates

Zone	12	13	14	15	16	19	20	21	22	23	24
1	5.0	12.0	1.0	2.0	3.0	17.0	3.0	5.0	3.0	12.0	6.0
2	5.0	12.0	1.0	2.0	3.0	17.0	3.0	5.0	3.0	12.0	6.0
3	5.0	12.0	1.0	2.0	3.0	17.0	3.0	5.0	3.0	12.0	6.0
4	5.0	12.0	1.0	2.0	3.0	17.0	3.0	5.0	3.0	12.0	6.0
5	5.0	12.0	1.0	2.0	3.0	17.0	3.0	5.0	3.0	12.0	6.0

To Gates

Zone	25	26
1	0.0	2.0
2	0.0	2.0
3	0.0	2.0
4	0.0	2.0
5	0.0	2.0

Cumul With Bridge Alternative AM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	D	36.4	0.829	D	36.9	0.843	+ 0.483 D/V
# 4 Eight Mile Rd & Davis Rd	C	32.4	0.671	C	32.5	0.684	+ 0.098 D/V
# 5 Eight Mile & Lower Sacto Rd	C	34.6	0.808	D	35.8	0.842	+ 1.154 D/V
# 6 West Lane & Armstrong Road	E	65.9	1.079	E	66.0	1.079	+ 0.078 D/V
# 7 West Lane & Ham Lane	B	11.8	0.384	B	11.7	0.409	-0.082 D/V
# 8 Eight Mile Rd & West Ln	D	42.4	0.918	D	47.3	0.977	+ 4.877 D/V
# 9 Eight Mile Road & Ham Lane	C	16.6	0.456	C	20.0	0.552	+ 3.454 D/V
# 10 Eight Mile & Leach Rd/St G	B	10.4	0.436	B	18.3	0.561	+ 7.949 D/V
# 11 Eight Mile & MickeGrove/Holman	C	28.7	0.597	C	29.0	0.685	+ 0.378 D/V
# 12 Eight Mile & SR 99 W Frontage	C	25.3	0.664	C	25.3	0.676	+ 0.036 D/V
# 13 Eight Mile & SR 99 E Frontage	A	3.8	0.177	A	3.8	0.179	-0.032 D/V
# 16 West & L.C.MarkTaylor/Marlette	C	25.7	0.533	C	30.5	0.632	+ 4.817 D/V
# 17 Holman & Lt Col Mark Taylor	D	39.6	0.831	D	46.8	0.907	+ 7.255 D/V
# 18 Morada Lane & West Lane	C	29.2	0.646	C	29.8	0.674	+ 0.558 D/V
# 19 Morada Lane & Holman Road	C	33.4	0.520	C	33.3	0.539	-0.052 D/V
# 22 Morada Ln & SR99 W Frontage Rd	C	24.3	0.409	C	24.2	0.409	-0.075 D/V
# 24 West Ln & West Ln Frontage Rd	C	24.9	0.747	C	24.9	0.776	-0.086 D/V
# 25 West Lane & Knickerbocker Dr	C	23.7	0.709	C	23.5	0.738	-0.181 D/V
# 26 West Lane & Hammer Lane	C	34.8	0.812	C	34.8	0.812	-0.021 D/V
# 27 Hammer Lane & Holman Road	C	33.7	0.768	C	33.7	0.768	+ 0.011 D/V
# 45 LtCol Mark Taylor & Ham Ln (S)	B	11.3	0.119	A	9.8	0.160	-1.537 D/V
# 51 Eight Mile & Commercial DW #1	A	0.0	0.000	B	11.4	0.004	+11.369 D/V
# 52 Eight Mile & Commercial DW #2	A	0.0	0.000	B	11.5	0.013	+11.460 D/V
# 53 Eight Mile Road & Road C	A	0.6	0.267	A	9.8	0.414	+ 9.242 D/V

Cumul With Bridge Alternative AM Pk Hr

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 54 West Lane & Commercial DW #3	A	0.0	0.000	B	10.2	0.009	+10.167 D/V
# 55 West Lane & Commercial DW #4	A	0.0	0.000	B	10.1	0.002	+10.132 D/V
# 56 West Lane & Road A	A	0.0	0.000	B	10.8	0.114	+10.828 D/V
# 57 Eight Mile & Hi Dens Res DW #1	A	0.0	0.000	B	12.5	0.134	+12.504 D/V
# 58 Eight Mile & Hi Dens Res DW #2	A	0.0	0.000	B	12.7	0.136	+12.686 D/V
# 60 Eight Mile & Industrial DW #1	A	0.0	0.000	B	11.0	0.002	+11.047 D/V
# 61 Eight Mile & Industrial DW #2	A	0.0	0.000	B	11.0	0.002	+11.046 D/V

Cumul With Bridge Alternative AM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 9 Eight Mile Road & Ham Lane	??? / ???	No / Yes
# 51 Eight Mile & Commercial DW #1	??? / ???	No / No
# 52 Eight Mile & Commercial DW #2	??? / ???	No / No
# 54 West Lane & Commercial DW #3	??? / ???	No / No
# 55 West Lane & Commercial DW #4	??? / ???	No / No
# 56 West Lane & Road A	??? / ???	No / No
# 57 Eight Mile & Hi Dens Res DW #1	??? / ???	No / No
# 58 Eight Mile & Hi Dens Res DW #2	??? / ???	No / No
# 60 Eight Mile & Industrial DW #1	??? / ???	No / No
# 61 Eight Mile & Industrial DW #2	??? / ???	No / No

Cumul With Bridge Alternative AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #9 Eight Mile Road & Ham Lane

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	0	0	1	0	0	4	0	0	0	0	3	1	0
Initial Vol:	0	0		0		0	0		266		0	1837		0		0	1421		192	
ApproachDel:	xxxxxx					20.0					xxxxxx					xxxxxx				

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.5]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=266]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3716]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul With Bridge Alternative AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #9 Eight Mile Road & Ham Lane

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	0	0	1	0	0	4	0	0	0	0	3	1	0
Initial Vol:	0	0		0		0	0		266		0	1837		0		0	1421		192	

Major Street Volume: 3450
Minor Approach Volume: 266
Minor Approach Volume Threshold: -142 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul With Bridge Alternative AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #51 Eight Mile & Commercial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	0	1	0	0	4	0	0
Initial Vol:	0		0		2	0		0		0	0		1608		8	0		1709		0
ApproachDel:	11.4					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=2]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3327]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul With Bridge Alternative AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #51 Eight Mile & Commercial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	0	1	0	0	4	0	0
Initial Vol:	0		0		2	0		0		0	0		1608		8	0		1709		0

Major Street Volume: 3325
Minor Approach Volume: 2
Minor Approach Volume Threshold: -129 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul With Bridge Alternative AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #52 Eight Mile & Commercial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Initial Vol:	0		0		7	0		0		0	0		1603		8	0		1709		0
ApproachDel:	11.5					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=7]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3327]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul With Bridge Alternative AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #52 Eight Mile & Commercial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Initial Vol:	0		0		7	0		0		0	0		1603		8	0		1709		0

Major Street Volume: 3320
Minor Approach Volume: 7
Minor Approach Volume Threshold: -129 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul With Bridge Alternative AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #54 West Lane & Commercial DW #3

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	3	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1059			10	0	1563			0	0		0		0	0		0		6
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					10.2				

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=6]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2638]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul With Bridge Alternative AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #54 West Lane & Commercial DW #3

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	3	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1059			10	0	1563			0	0		0		0	0		0		6

Major Street Volume: 2632
Minor Approach Volume: 6
Minor Approach Volume Threshold: -49 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul With Bridge Alternative AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #55 West Lane & Commercial DW #4

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1067			7	0	1563			0	0		0	0	0	0		0	0	1
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					10.1				

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=1]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2638]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul With Bridge Alternative AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #55 West Lane & Commercial DW #4

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1067			7	0	1563			0	0		0	0	0	0		0	0	1

Major Street Volume: 2637
Minor Approach Volume: 1
Minor Approach Volume Threshold: -49 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul With Bridge Alternative AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #56 West Lane & Road A

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1001			50	0	1563			0	0		0		0	0		0		73
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					10.8				

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=73]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2687]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul With Bridge Alternative AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #56 West Lane & Road A

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1001			50	0	1563			0	0		0		0	0		0		73

Major Street Volume: 2614
Minor Approach Volume: 73
Minor Approach Volume Threshold: -46 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul With Bridge Alternative AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #57 Eight Mile & Hi Dens Res DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Initial Vol:	0		0		68	0		0		0	0		1635		17	0		1653		0
ApproachDel:	12.5					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=68]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3373]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul With Bridge Alternative AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #57 Eight Mile & Hi Dens Res DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Initial Vol:	0		0		68	0		0		0	0		1635		17	0		1653		0

Major Street Volume: 3305
Minor Approach Volume: 68
Minor Approach Volume Threshold: -127 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul With Bridge Alternative AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #58 Eight Mile & Hi Dens Res DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Initial Vol:	0		0		68	0		0		0	0		1686		17	0		1653		0
ApproachDel:	12.7					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=68]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3424]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul With Bridge Alternative AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #58 Eight Mile & Hi Dens Res DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Initial Vol:	0		0		68	0		0		0	0		1686		17	0		1653		0

Major Street Volume: 3356
Minor Approach Volume: 68
Minor Approach Volume Threshold: -132 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul With Bridge Alternative AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #60 Eight Mile & Industrial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	1	0	0	0	4	0	0
Initial Vol:	0		0		1	0		0		0	0		1852		2	0		1441		0
ApproachDel:	11.0					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=1]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3296]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul With Bridge Alternative AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #60 Eight Mile & Industrial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	1	0	0	0	4	0	0
Initial Vol:	0		0		1	0		0		0	0		1852		2	0		1441		0

Major Street Volume: 3295
Minor Approach Volume: 1
Minor Approach Volume Threshold: -126 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul With Bridge Alternative AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #61 Eight Mile & Industrial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	1	0	0	0	4	0	0
Initial Vol:	0		0		1	0		0		0	0		1851		2	0		1441		0
ApproachDel:	11.0					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=1]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3295]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul With Bridge Alternative AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #61 Eight Mile & Industrial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	1	0	0	0	4	0	0
Initial Vol:	0		0		1	0		0		0	0		1851		2	0		1441		0

Major Street Volume: 3294
Minor Approach Volume: 1
Minor Approach Volume Threshold: -126 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.843
Loss Time (sec):	12	Average Delay (sec/veh):	36.9
Optimal Cycle:	88	Level Of Service:	D

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	AM Pk Hr											
Base Vol:	123	347	112	450	595	209	243	1360	104	233	1415	231
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	123	347	112	450	595	209	243	1360	104	233	1415	231
Added Vol:	0	0	5	5	0	0	0	24	0	9	46	9
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	123	347	117	455	595	209	243	1384	104	242	1461	240
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	134	377	127	495	647	227	264	1504	113	263	1588	261
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	134	377	127	495	647	227	264	1504	113	263	1588	261
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	134	377	127	495	647	227	264	1504	113	263	1588	261
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	3.44	0.56
Final Sat.:	1769	3538	1583	1769	3538	1583	3432	6778	1583	3432	5699	936
Capacity Analysis Module:												
Vol/Sat:	0.08	0.11	0.08	0.28	0.18	0.14	0.08	0.22	0.07	0.08	0.28	0.28
Crit Moves:		****		****			****				****	
Green/Cycle:	0.13	0.13	0.13	0.33	0.32	0.32	0.09	0.31	0.31	0.11	0.33	0.33
Volume/Cap:	0.56	0.84	0.64	0.84	0.56	0.44	0.84	0.71	0.23	0.71	0.84	0.84
Delay/Veh:	43.7	56.3	48.1	41.7	28.6	27.3	63.1	31.4	25.6	49.2	34.2	34.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.7	56.3	48.1	41.7	28.6	27.3	63.1	31.4	25.6	49.2	34.2	34.2
LOS by Move:	D	E	D	D	C	C	E	C	C	D	C	C
HCM2k95thQ:	225	399	235	706	392	254	215	471	107	201	639	639

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	2 0	1		1 0	2 0	1		2 0	4 0	1		2 0	3 1	0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	2	1		1	2	1		2	4	1		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.98	0.98	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.96	0.96	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.90	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.13	0.13	0.13	0.33	0.32	0.32	0.09	0.31	0.31	0.11	0.33	0.33
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.99	0.98	0.96	0.91	0.89	0.99	0.94	0.87	0.99	0.96	0.96
Q1:	3.4	5.3	3.3	12.2	7.1	4.4	3.7	9.5	2.0	3.6	12.6	12.6
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.74	0.74	0.61	0.61	0.61
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.60	0.60	0.76	0.76	0.76
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.15	0.32	0.29	0.21	0.41	0.41
Q2:	1.2	3.2	1.5	4.0	1.2	0.8	0.7	0.7	0.1	0.5	1.9	1.9
HCM2KQueue:	4.6	8.5	4.8	16.2	8.3	5.2	4.4	10.2	2.1	4.1	14.5	14.5
70th%Factor:	1.19	1.18	1.19	1.17	1.18	1.19	1.19	1.18	1.19	1.19	1.17	1.17
HCM2k70thQ:	5.4	10.1	5.7	18.9	9.9	6.2	5.2	12.0	2.5	4.8	16.9	16.9
85th%Factor:	1.56	1.53	1.56	1.47	1.53	1.55	1.56	1.51	1.58	1.56	1.49	1.49
HCM2k85thQ:	7.1	13.0	7.4	23.9	12.7	8.1	6.8	15.5	3.3	6.3	21.5	21.5
90th%Factor:	1.72	1.66	1.71	1.58	1.66	1.71	1.72	1.64	1.76	1.73	1.59	1.59
HCM2k90thQ:	7.9	14.2	8.2	25.6	13.9	8.9	7.5	16.8	3.7	7.0	23.0	23.0
95th%Factor:	1.97	1.87	1.96	1.74	1.88	1.95	1.97	1.84	2.03	1.98	1.77	1.77
HCM2k95thQ:	9.0	16.0	9.4	28.3	15.7	10.2	8.6	18.8	4.3	8.0	25.6	25.6
98th%Factor:	2.40	2.22	2.39	1.99	2.23	2.37	2.42	2.16	2.55	2.43	2.03	2.03
HCM2k98thQ:	11.0	18.9	11.4	32.2	18.6	12.3	10.5	22.1	5.4	9.9	29.3	29.3

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.684
Loss Time (sec):	12	Average Delay (sec/veh):	32.5
Optimal Cycle:	57	Level Of Service:	C

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	AM Pk Hr											
Base Vol:	205	288	150	217	511	126	147	1318	179	304	1295	105
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	205	288	150	217	511	126	147	1318	179	304	1295	105
Added Vol:	0	0	10	5	0	0	0	34	0	19	65	9
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	205	288	160	222	511	126	147	1352	179	323	1360	114
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	223	313	174	241	555	137	160	1470	195	351	1478	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	223	313	174	241	555	137	160	1470	195	351	1478	124
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	223	313	174	241	555	137	160	1470	195	351	1478	124
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.88	0.88
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	3.69	0.31
Final Sat.:	1769	3538	1583	1769	3538	1583	3432	6778	1583	3432	6178	518
Capacity Analysis Module:												
Vol/Sat:	0.13	0.09	0.11	0.14	0.16	0.09	0.05	0.22	0.12	0.10	0.24	0.24
Crit Moves:	****				****			****		****		
Green/Cycle:	0.18	0.18	0.18	0.23	0.23	0.23	0.08	0.32	0.32	0.15	0.39	0.39
Volume/Cap:	0.68	0.48	0.60	0.60	0.68	0.38	0.61	0.68	0.39	0.68	0.61	0.61
Delay/Veh:	44.0	37.0	40.7	36.8	37.6	33.2	49.0	30.7	27.1	44.1	24.9	24.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.0	37.0	40.7	36.8	37.6	33.2	49.0	30.7	27.1	44.1	24.9	24.9
LOS by Move:	D	D	D	D	D	C	D	C	C	D	C	C
HCM2k95thQ:	356	235	272	337	422	178	122	454	195	312	466	466

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	2	0	1	1	0	2	0	1	2	0	4	0	1	2	0	3	1	0
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R		L	RT		RT
#LnsInGrps:	1	2	1		1	2	1		2	4	1		2	4	4					
HCM Ops Input Saturation Adj Module:																				
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12		12	12		12
CrsswalkWid:		8				8				8				8				8		
% Hev Veh:		2				2				2				2				2		
Grade:		0%				0%				0%				0%				0%		
Parking/Hr:		No				No				No				No				No		
Bus Stp/Hr:		0				0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >																			
Cnft Ped/Hr:		0				0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include				Include		
% RT Prtct:		0				0				0				0				0		
HCM Ops f(lt) Adj Case Module:																				
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																				
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98		0.98
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00		1.00
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00		1.00
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.99	0.99					
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx					
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00					
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.97	0.97					
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00					
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91					
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.90	0.89	0.83		0.90	0.88	0.88					
Delay Adjustment Factor Module:																				
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >																			
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >																			
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00					

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.18	0.18	0.18		0.23	0.23	0.23		0.08	0.32	0.32		0.15	0.39	0.39	
ArrivalType:		4				4				4				4		
ProgFactor:	0.97	0.96	0.96		0.95	0.96	0.93		0.99	0.93	0.89		0.98	0.88	0.88	
Q1:	5.6	3.9	4.3		5.7	7.1	3.0		2.2	9.1	3.7		4.7	8.6	8.6	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.71	0.71	0.71		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.64	0.64	0.64		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.14	0.34	0.31		1.00	1.00	1.00	
Q2:	1.9	0.9	1.3		1.4	1.9	0.6		0.2	0.7	0.2		1.8	1.5	1.5	
HCM2KQueue:	7.5	4.8	5.6		7.1	9.1	3.6		2.4	9.8	3.9		6.5	10.1	10.1	
70th%Factor:	1.18	1.19	1.19		1.18	1.18	1.19		1.19	1.18	1.19		1.18	1.18	1.18	
HCM2k70thQ:	8.9	5.7	6.7		8.4	10.7	4.3		2.9	11.6	4.7		7.7	11.9	11.9	
85th%Factor:	1.53	1.56	1.55		1.54	1.52	1.57		1.58	1.52	1.56		1.54	1.51	1.51	
HCM2k85thQ:	11.5	7.5	8.7		10.9	13.8	5.6		3.8	14.9	6.1		10.0	15.3	15.3	
90th%Factor:	1.67	1.71	1.70		1.68	1.65	1.73		1.75	1.64	1.73		1.69	1.64	1.64	
HCM2k90thQ:	12.6	8.2	9.6		11.9	15.0	6.2		4.2	16.2	6.8		11.0	16.6	16.6	
95th%Factor:	1.90	1.96	1.94		1.91	1.86	1.99		2.02	1.85	1.98		1.92	1.84	1.84	
HCM2k95thQ:	14.2	9.4	10.9		13.5	16.9	7.1		4.9	18.2	7.8		12.5	18.6	18.6	
98th%Factor:	2.26	2.39	2.35		2.28	2.20	2.46		2.53	2.17	2.44		2.31	2.16	2.16	
HCM2k98thQ:	17.0	11.5	13.2		16.1	19.9	8.8		6.1	21.3	9.6		15.0	21.9	21.9	

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.842
Loss Time (sec):	12	Average Delay (sec/veh):	35.8
Optimal Cycle:	88	Level Of Service:	D

Street Name:	Lower Sacramento Road							Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Y+R:	4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0		
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	4	0	1	2	0	3	1	0
Volume Module:	AM Pk Hr																			
Base Vol:	105	375	236			556	582	105			130	1415	86			462	1434	296		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	105	375	236			556	582	105			130	1415	86			462	1434	296		
Added Vol:	0	0	14			10	0	0			0	48	0			28	93	19		
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0		
Initial Fut:	105	375	250			566	582	105			130	1463	86			490	1527	315		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92		
PHF Volume:	114	408	272			615	633	114			141	1590	93			533	1660	342		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	114	408	272			615	633	114			141	1590	93			533	1660	342		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
FinalVolume:	114	408	272			615	633	114			141	1590	93			533	1660	342		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900		
Adjustment:	0.90	0.93	0.83			0.90	0.93	0.83			0.90	0.89	0.83			0.90	0.87	0.87		
Lanes:	2.00	2.00	1.00			2.00	2.00	1.00			2.00	4.00	1.00			2.00	3.32	0.68		
Final Sat.:	3432	3538	1583			3432	3538	1583			3432	6778	1583			3432	5473	1129		
Capacity Analysis Module:																				
Vol/Sat:	0.03	0.12	0.17			0.18	0.18	0.07			0.04	0.23	0.06			0.16	0.30	0.30		
Crit Moves:			****			****						****				****				
Green/Cycle:	0.07	0.20	0.20			0.21	0.35	0.35			0.06	0.28	0.28			0.18	0.41	0.41		
Volume/Cap:	0.51	0.56	0.84			0.84	0.51	0.21			0.74	0.84	0.21			0.84	0.74	0.74		
Delay/Veh:	47.1	36.9	56.0			46.5	26.0	22.8			61.2	37.6	27.9			49.3	26.3	26.3		
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
AdjDel/Veh:	47.1	36.9	56.0			46.5	26.0	22.8			61.2	37.6	27.9			49.3	26.3	26.3		
LOS by Move:	D	D	E			D	C	C			E	D	C			D	C	C		
HCM2k95thQ:	125	305	485			538	354	108			189	659	104			490	634	634		

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																				
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	4	0	1	2	0	3	1	0
Lane Group:	L		T		R	L		T		R	L		T		R	L		RT		RT
#LnsInGrps:	2		2		1	2		2		1	2		4		1	2		4		4
HCM Ops Input Saturation Adj Module:																				
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12
CrsswalkWid:			8					8					8					8		
% Hev Veh:			2					2					2					2		
Grade:			0%					0%					0%					0%		
Parking/Hr:			No					No					No					No		
Bus Stp/Hr:			0					0					0					0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																			
Cnft Ped/Hr:			0					0					0					0		
ExclusiveRT:			Include					Include					Include					Include		
% RT Prtct:			0					0					0					0		
HCM Ops f(lt) Adj Case Module:																				
f(lt) Case:	1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx		
HCM Ops Saturation Adj Module:																				
Ln Wid Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Hev Veh Adj:	0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98		
Grade Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Parking Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00		
Bus Stp Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00		
Area Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
RT Adj:	xxxx	xxxx	0.85			xxxx	xxxx	0.85			xxxx	xxxx	0.85			xxxx	0.97	0.97		
LT Adj:	0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx		
PedBike Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
HCM Sat Adj:	0.93	0.98	0.83			0.93	0.98	0.83			0.93	0.98	0.83			0.93	0.95	0.95		
Usr Sat Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Sat Adj:	0.97	0.95	1.00			0.97	0.95	1.00			0.97	0.91	1.00			0.97	0.91	0.91		
Fnl Sat Adj:	0.90	0.93	0.83			0.90	0.93	0.83			0.90	0.89	0.83			0.90	0.87	0.87		
Delay Adjustment Factor Module:																				
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																			
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >																			
DelAdjFctr:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.07	0.20	0.20	0.21	0.35	0.35	0.06	0.28	0.28	0.18	0.41	0.41
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.96	0.98	0.98	0.88	0.84	0.99	0.97	0.89	0.98	0.90	0.90
Q1:	1.6	5.1	7.1	8.3	6.5	1.9	2.0	11.1	1.8	7.3	11.7	11.7
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.9	1.2	3.5	3.6	1.0	0.3	1.8	3.9	0.3	3.5	2.6	2.6
HCM2KQueue:	2.5	6.4	10.6	11.9	7.5	2.1	3.8	15.0	2.0	10.7	14.3	14.3
70th%Factor:	1.19	1.19	1.18	1.17	1.18	1.19	1.19	1.17	1.20	1.18	1.17	1.17
HCM2k70thQ:	3.0	7.5	12.5	14.0	8.8	2.5	4.5	17.5	2.4	12.6	16.8	16.8
85th%Factor:	1.58	1.54	1.51	1.50	1.53	1.58	1.56	1.48	1.58	1.51	1.49	1.49
HCM2k85thQ:	3.9	9.8	16.0	17.8	11.4	3.3	6.0	22.2	3.2	16.2	21.3	21.3
90th%Factor:	1.75	1.69	1.64	1.62	1.68	1.76	1.73	1.59	1.76	1.63	1.60	1.60
HCM2k90thQ:	4.3	10.7	17.3	19.3	12.5	3.7	6.6	23.8	3.6	17.5	22.9	22.9
95th%Factor:	2.02	1.92	1.83	1.81	1.90	2.03	1.99	1.76	2.04	1.83	1.77	1.77
HCM2k95thQ:	5.0	12.2	19.4	21.5	14.2	4.3	7.6	26.4	4.2	19.6	25.4	25.4
98th%Factor:	2.53	2.31	2.14	2.10	2.26	2.55	2.45	2.02	2.55	2.14	2.03	2.03
HCM2k98thQ:	6.3	14.7	22.7	25.0	16.9	5.4	9.3	30.2	5.2	22.9	29.1	29.1

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec):	100	Critical Vol./Cap.(X):	1.079
Loss Time (sec):	12	Average Delay (sec/veh):	66.0
Optimal Cycle:	180	Level Of Service:	E

Street Name:	West Lane						Armstrong Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:	AM Pk Hr											
Base Vol:	28	374	249	582	533	28	37	421	22	475	430	330
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	28	374	249	582	533	28	37	421	22	475	430	330
Added Vol:	0	56	0	0	29	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	28	430	249	582	562	28	37	421	22	475	430	330
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	30	467	271	633	611	30	40	458	24	516	467	359
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	467	271	633	611	30	40	458	24	516	467	359
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	30	467	271	633	611	30	40	458	24	516	467	359
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.02	0.13	0.17	0.36	0.17	0.02	0.02	0.13	0.02	0.29	0.13	0.23
Crit Moves:			****	****				****		****		
Green/Cycle:	0.04	0.16	0.16	0.33	0.45	0.45	0.04	0.12	0.12	0.27	0.35	0.35
Volume/Cap:	0.39	0.83	1.08	1.08	0.39	0.04	0.64	1.08	0.13	1.08	0.37	0.64
Delay/Veh:	49.6	51.2	121.6	93.9	18.7	15.7	67.5	111	39.6	100.7	24.2	29.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.6	51.2	121.6	93.9	18.7	15.7	67.5	111	39.6	100.7	24.2	29.4
LOS by Move:	D	D	F	F	B	B	E	F	D	F	C	C
HCM2k95thQ:	72	453	649	1204	260	21	118	598	37	1034	242	427

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	2	0	1	1	0	2	0	1	1	0	2	0	1	1
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	2	1		1	2	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.04	0.16	0.16		0.33	0.45	0.45		0.04	0.12	0.12		0.27	0.35	0.35	
ArrivalType:	4				4				4				4			
ProgFactor:	0.99	0.99	1.00		1.00	0.79	0.74		1.00	1.00	0.96		1.00	0.86	0.91	
Q1:	0.8	6.5	7.5		17.6	4.7	0.4		1.1	6.7	0.6		14.3	4.4	7.5	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.6	3.3	7.2		12.3	0.6	0.0		1.2	6.7	0.1		10.8	0.6	1.7	
HCM2KQueue:	1.4	9.8	14.7		29.8	5.3	0.4		2.3	13.4	0.7		25.1	5.0	9.2	
70th%Factor:	1.20	1.18	1.17		1.15	1.19	1.20		1.19	1.17	1.20		1.15	1.19	1.18	
HCM2k70thQ:	1.7	11.6	17.2		34.2	6.3	0.5		2.8	15.7	0.9		28.9	5.9	10.8	
85th%Factor:	1.59	1.52	1.48		1.41	1.55	1.60		1.58	1.49	1.59		1.43	1.55	1.52	
HCM2k85thQ:	2.2	14.9	21.8		42.1	8.3	0.6		3.7	20.0	1.1		35.9	7.7	14.0	
90th%Factor:	1.77	1.64	1.59		1.49	1.71	1.79		1.76	1.60	1.79		1.51	1.71	1.65	
HCM2k90thQ:	2.5	16.1	23.4		44.5	9.1	0.7		4.1	21.5	1.3		38.0	8.5	15.2	
95th%Factor:	2.06	1.85	1.76		1.61	1.95	2.09		2.03	1.79	2.08		1.65	1.96	1.86	
HCM2k95thQ:	2.9	18.1	26.0		48.2	10.4	0.8		4.7	23.9	1.5		41.4	9.7	17.1	
98th%Factor:	2.60	2.17	2.02		1.80	2.36	2.67		2.54	2.06	2.65		1.85	2.38	2.19	
HCM2k98thQ:	3.6	21.3	29.8		53.7	12.6	1.1		5.9	27.6	1.9		46.3	11.8	20.2	

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.409
Loss Time (sec):	9	Average Delay (sec/veh):	11.7
Optimal Cycle:	30	Level Of Service:	B

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0	1	1	0
Volume Module:	AM Pk Hr											
Base Vol:	32	13	19	43	28	30	32	783	30	43	783	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	32	13	19	43	28	30	32	783	30	43	783	19
Added Vol:	0	0	19	0	0	0	0	37	28	4	25	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	32	13	38	43	28	30	32	820	58	47	808	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	35	14	41	47	30	33	35	891	63	51	878	21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	14	41	47	30	33	35	891	63	51	878	21
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	35	14	41	47	30	33	35	891	63	51	878	21
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	0.81	0.81	0.81	0.81	0.93	0.92	0.92	0.93	0.93	0.93
Lanes:	0.38	0.16	0.46	0.42	0.28	0.30	1.00	1.87	0.13	1.00	1.95	0.05
Final Sat.:	593	241	704	657	428	458	1769	3271	231	1769	3446	81
Capacity Analysis Module:												
Vol/Sat:	0.06	0.06	0.06	0.07	0.07	0.07	0.02	0.27	0.27	0.03	0.25	0.25
Crit Moves:					****			****		****		
Green/Cycle:	0.17	0.17	0.17	0.17	0.17	0.17	0.05	0.67	0.67	0.07	0.68	0.68
Volume/Cap:	0.34	0.34	0.34	0.41	0.41	0.41	0.37	0.41	0.41	0.41	0.37	0.37
Delay/Veh:	37.0	37.0	37.0	37.8	37.8	37.8	48.3	7.8	7.8	46.7	6.8	6.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.0	37.0	37.0	37.8	37.8	37.8	48.3	7.8	7.8	46.7	6.8	6.8
LOS by Move:	D	D	D	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	131	131	131	163	163	163	76	158	158	101	120	120

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	0	0	1!	0	0		0	0	1!	0	0		1	0	1	1	0		1	0	1	1	0	
Lane Group:	LTR		LTR		LTR		LTR		LTR		LTR		L		RT		RT		L		RT		RT	
#LnsInGrps:	1		1		1		1		1		1		1		2		2		1		2		2	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:			8						8						8						8			
% Hev Veh:			2						2						2						2			
Grade:			0%						0%						0%						0%			
Parking/Hr:			No						No						No						No			
Bus Stp/Hr:			0						0						0						0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0						0						0						0			
ExclusiveRT:			Include						Include						Include						Include			
% RT Prtct:			0						0						0						0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	5		5		5		5		5		5		1	xxxx		xxxx			1	xxxx		xxxx		
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98												
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
Parking Adj:	1.00	1.00	1.00	1.00	1.00	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00												
Bus Stp Adj:	1.00	1.00	1.00	1.00	1.00	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00												
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
RT Adj:	0.94	0.94	0.94	0.96	0.96	0.96	xxxx	0.99	0.99	xxxx	1.00	1.00												
LT Adj:	0.88	0.88	0.88	0.86	0.86	0.86	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx												
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
HCM Sat Adj:	0.81	0.81	0.81	0.81	0.81	0.81	0.93	0.97	0.97	0.93	0.98	0.98												
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95												
Fnl Sat Adj:	0.81	0.81	0.81	0.81	0.81	0.81	0.93	0.92	0.92	0.93	0.93	0.93												
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	100	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	16.39	16.39	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	17.39	17.39	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	17.39	17.39	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	1	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	1	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	35	47	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	0.39	0.43	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	0.43	0.39	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	0.97	1.30	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	110	90	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	3.06	2.50	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	1.33	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	3.00	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	4.07	2.95	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	0.77	0.77	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	5.75	4.51	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	11.64	12.88	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	0.84	0.78	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	0.57	0.61	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	1.57	1.54	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	1.00	1.00	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	0.16	0.16	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	0.88	0.86	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	0.88	0.86	xxxxxx	xxxxxx

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.17	0.17	0.17	0.17	0.17	0.17	0.05	0.67	0.67	0.07	0.68	0.68
ArrivalType:	4			4			4			4		
ProgFactor:	0.95	0.95	0.95	0.95	0.95	0.95	0.99	0.39	0.39	0.98	0.32	0.32
Q1:	2.1	2.1	2.1	2.6	2.6	2.6	0.9	2.5	2.5	1.3	1.8	1.8
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.5	0.5	0.5	0.7	0.7	0.7	0.6	0.7	0.7	0.6	0.6	0.6
HCM2KQueue:	2.6	2.6	2.6	3.3	3.3	3.3	1.5	3.2	3.2	2.0	2.4	2.4
70th%Factor:	1.19	1.19	1.19	1.19	1.19	1.19	1.20	1.19	1.19	1.20	1.19	1.19
HCM2k70thQ:	3.1	3.1	3.1	3.9	3.9	3.9	1.8	3.8	3.8	2.4	2.8	2.8
85th%Factor:	1.58	1.58	1.58	1.57	1.57	1.57	1.59	1.57	1.57	1.58	1.58	1.58
HCM2k85thQ:	4.1	4.1	4.1	5.1	5.1	5.1	2.3	5.0	5.0	3.1	3.7	3.7
90th%Factor:	1.75	1.75	1.75	1.74	1.74	1.74	1.77	1.74	1.74	1.76	1.76	1.76
HCM2k90thQ:	4.5	4.5	4.5	5.7	5.7	5.7	2.6	5.5	5.5	3.5	4.1	4.1
95th%Factor:	2.02	2.02	2.02	2.00	2.00	2.00	2.05	2.00	2.00	2.04	2.03	2.03
HCM2k95thQ:	5.2	5.2	5.2	6.5	6.5	6.5	3.0	6.3	6.3	4.0	4.8	4.8
98th%Factor:	2.52	2.52	2.52	2.48	2.48	2.48	2.59	2.48	2.48	2.56	2.53	2.53
HCM2k98thQ:	6.5	6.5	6.5	8.1	8.1	8.1	3.8	7.8	7.8	5.1	6.0	6.0

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.977
Loss Time (sec):	12	Average Delay (sec/veh):	47.3
Optimal Cycle:	163	Level Of Service:	D

Street Name:	West Lane								Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	2	0 2	0 1		2	0 2	0 1		2	0 3	1 0		2	0 3	1 0	
Volume Module:	AM Pk Hr															
Base Vol:	496	381	67		130	831	407		430	1309	483		154	1305	58	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	496	381	67		130	831	407		430	1309	483		154	1305	58	
Added Vol:	46	32	42		19	6	0		0	48	24		66	92	33	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	542	413	109		149	837	407		430	1357	507		220	1397	91	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	589	449	118		162	910	442		467	1475	551		239	1518	99	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	589	449	118		162	910	442		467	1475	551		239	1518	99	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	589	449	118		162	910	442		467	1475	551		239	1518	99	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.86	0.86		0.90	0.88	0.88	
Lanes:	2.00	2.00	1.00		2.00	2.00	1.00		2.00	3.00	1.00		2.00	3.76	0.24	
Final Sat.:	3432	3538	1583		3432	3538	1583		3432	4875	1625		3432	6306	411	
Capacity Analysis Module:																
Vol/Sat:	0.17	0.13	0.07		0.05	0.26	0.28		0.14	0.30	0.34		0.07	0.24	0.24	
Crit Moves:	****						****				****		****			
Green/Cycle:	0.18	0.34	0.34		0.13	0.29	0.29		0.15	0.35	0.35		0.07	0.27	0.27	
Volume/Cap:	0.98	0.38	0.22		0.38	0.90	0.98		0.90	0.87	0.98		0.98	0.90	0.90	
Delay/Veh:	71.8	25.4	24.0		40.7	45.1	71.6		60.5	34.5	47.0		97.3	42.1	42.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	71.8	25.4	24.0		40.7	45.1	71.6		60.5	34.5	47.0		97.3	42.1	42.1	
LOS by Move:	E	C	C		D	D	E		E	C	D		F	D	D	
HCM2k95thQ:	523	229	109		134	759	809		486	780	1008		245	643	643	

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	0 1		2	0 2	0 1		2	0 3	1 0		2	0 3	1 0	
Lane Group:	L	T	R		L	T	R		L	RT	RT		L	RT	RT	
#LnsInGrps:	2	2	1		2	2	1		2	4	4		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.96	0.96		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.94	0.94		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.86	0.86		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.18	0.34	0.34	0.13	0.29	0.29	0.15	0.35	0.35	0.07	0.27	0.27
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.87	0.85	0.97	0.98	1.00	0.99	0.96	0.99	1.00	0.98	0.98
Q1:	8.4	4.4	2.0	2.1	12.5	12.1	6.5	13.5	16.5	3.4	11.7	11.7
UpstreamVC:	0.42	0.42	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.34	0.34
UpstreamAdj:	0.91	0.91	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.95	0.95	0.95
EarlyArrAdj:	0.33	0.51	0.46	1.00	1.00	1.00	1.00	1.00	1.00	0.20	0.46	0.46
Q2:	3.1	0.3	0.1	0.6	5.1	6.8	4.1	4.6	7.9	1.6	2.8	2.8
HCM2KQueue:	11.5	4.7	2.1	2.6	17.6	18.9	10.6	18.2	24.4	5.0	14.5	14.5
70th%Factor:	1.17	1.19	1.19	1.19	1.16	1.16	1.18	1.16	1.15	1.19	1.17	1.17
HCM2k70thQ:	13.5	5.5	2.6	3.2	20.5	22.0	12.5	21.1	28.1	6.0	17.0	17.0
85th%Factor:	1.50	1.56	1.58	1.57	1.47	1.46	1.51	1.46	1.43	1.55	1.48	1.48
HCM2k85thQ:	17.3	7.3	3.4	4.2	25.8	27.6	16.0	26.6	34.9	7.8	21.6	21.6
90th%Factor:	1.62	1.72	1.76	1.75	1.57	1.56	1.64	1.56	1.52	1.71	1.59	1.59
HCM2k90thQ:	18.7	8.0	3.8	4.6	27.6	29.5	17.4	28.3	37.0	8.6	23.2	23.2
95th%Factor:	1.82	1.96	2.03	2.02	1.73	1.71	1.83	1.72	1.65	1.95	1.77	1.77
HCM2k95thQ:	20.9	9.1	4.4	5.3	30.4	32.4	19.4	31.2	40.3	9.8	25.7	25.7
98th%Factor:	2.11	2.40	2.55	2.52	1.96	1.93	2.14	1.95	1.85	2.38	2.03	2.03
HCM2k98thQ:	24.3	11.2	5.5	6.7	34.5	36.6	22.7	35.4	45.2	11.9	29.5	29.5

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: C[20.0]

Street Name:	Ham Lane								Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L -	T -	R		L -	T -	R		L -	T -	R		L -	T -	R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0	0	0	0	0	0	1	0	0	4	0	0	0	0	3	1	0
Volume Module:	AM Pk Hr																			
Base Vol:	0	0	0	0	0	238	0	1605	0	0	1300	155								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	0	0	0	0	0	238	0	1605	0	0	1300	155								
Added Vol:	0	0	0	0	0	28	0	232	0	0	121	37								
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0								
Initial Fut:	0	0	0	0	0	266	0	1837	0	0	1421	192								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92								
PHF Volume:	0	0	0	0	0	289	0	1997	0	0	1545	209								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	0	0	0	0	0	289	0	1997	0	0	1545	209								
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	490	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	524	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	524	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	0.55	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	83.1	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	20.0	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	*	*	*	C	*	*	*	*	*	*								
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT								
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx				20.0		xxxxxx				xxxxxx									
ApproachLOS:	*				C		*				*									

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	2%	2%	2%	2%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0
Pedestrian Walk Speed: 4.00 feet/sec				
LaneWidth:	12 feet	12 feet	12 feet	12 feet
Time Period: 0.25 hour				

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St G

Cycle (sec):	100	Critical Vol./Cap.(X):	0.561
Loss Time (sec):	12	Average Delay (sec/veh):	18.3
Optimal Cycle:	45	Level Of Service:	B

Street Name:	Leach Road/Street G						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	3 1	0	1 0	3 1	0
Volume Module:AM Pk Hr												
Base Vol:	0	0	0	167	0	7	10	1582	0	0	1598	102
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	167	0	7	10	1582	0	0	1598	102
Added Vol:	67	0	88	0	0	0	60	167	19	30	75	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	67	0	88	167	0	7	70	1749	19	30	1673	102
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	73	0	96	182	0	8	76	1901	21	33	1818	111
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	73	0	96	182	0	8	76	1901	21	33	1818	111
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	73	0	96	182	0	8	76	1901	21	33	1818	111
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	0.93	1.00	0.83	0.93	0.89	0.89	0.93	0.88	0.88
Lanes:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	3.96	0.04	1.00	3.77	0.23
Final Sat.:	1769	1900	1583	1769	0	1583	1769	6691	73	1769	6331	386
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.06	0.10	0.00	0.00	0.04	0.28	0.28	0.02	0.29	0.29
Crit Moves:			****	****			****				****	
Green/Cycle:	0.26	0.00	0.11	0.18	0.00	0.18	0.08	0.55	0.55	0.04	0.51	0.51
Volume/Cap:	0.16	0.00	0.56	0.56	0.00	0.03	0.56	0.51	0.51	0.51	0.56	0.56
Delay/Veh:	28.7	0.0	46.5	39.4	0.0	33.6	49.8	14.1	14.1	54.4	16.9	16.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.7	0.0	46.5	39.4	0.0	33.6	49.8	14.1	14.1	54.4	16.9	16.9
LOS by Move:	C	A	D	D	A	C	D	B	B	D	B	B
HCM2k95thQ:	81	0	180	272	0	10	157	344	344	89	411	411

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St G

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 1	0 1		1	0 0	1 0		1	0 3	1 0		1	0 3	1 0	
Lane Group:	L	T	R		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	4	4		1	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	xxxx	0.98		0.98	xxxx	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	1.00	1.00		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	1.00	0.83		0.93	1.00	0.83		0.93	0.98	0.98		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.91	0.91		1.00	0.91	0.91	
Fnl Sat Adj:	0.93	1.00	0.83		0.93	1.00	0.83		0.93	0.89	0.89		0.93	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	1.00		1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St G

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.26	0.00	0.11		0.18	0.00	0.18		0.08	0.55	0.55		0.04	0.51	0.51	
ArrivalType:		4				4				4				4		
ProgFactor:	0.90	1.00	0.98		0.96	1.00	0.93		0.99	0.68	0.68		0.99	0.75	0.75	
Q1:	1.4	0.0	2.5		4.4	0.0	0.2		2.0	6.2	6.2		0.9	7.6	7.6	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	0.00	1.00		1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.2	0.0	1.1		1.2	0.0	0.0		1.1	1.0	1.0		0.9	1.2	1.2	
HCM2KQueue:	1.6	0.0	3.6		5.6	0.0	0.2		3.1	7.2	7.2		1.7	8.8	8.8	
70th%Factor:	1.20	1.20	1.19		1.19	1.20	1.20		1.19	1.18	1.18		1.20	1.18	1.18	
HCM2k70thQ:	1.9	0.0	4.3		6.7	0.0	0.2		3.7	8.6	8.6		2.1	10.4	10.4	
85th%Factor:	1.58	1.60	1.57		1.55	1.60	1.60		1.57	1.54	1.54		1.58	1.52	1.52	
HCM2k85thQ:	2.5	0.0	5.7		8.7	0.0	0.3		4.9	11.1	11.1		2.8	13.4	13.4	
90th%Factor:	1.77	1.80	1.73		1.70	1.80	1.80		1.74	1.68	1.68		1.77	1.66	1.66	
HCM2k90thQ:	2.8	0.0	6.3		9.6	0.0	0.3		5.4	12.1	12.1		3.1	14.6	14.6	
95th%Factor:	2.05	2.10	1.99		1.94	2.10	2.09		2.00	1.90	1.90		2.04	1.87	1.87	
HCM2k95thQ:	3.2	0.0	7.2		10.9	0.0	0.4		6.3	13.8	13.8		3.6	16.5	16.5	
98th%Factor:	2.59	2.70	2.46		2.35	2.70	2.69		2.49	2.27	2.27		2.57	2.21	2.21	
HCM2k98thQ:	4.1	0.0	8.9		13.2	0.0	0.5		7.8	16.4	16.4		4.5	19.4	19.4	

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Cycle (sec):	100	Critical Vol./Cap.(X):	0.685
Loss Time (sec):	12	Average Delay (sec/veh):	29.0
Optimal Cycle:	57	Level Of Service:	C

Street Name:	Micke Grove Road/Holman Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	4 0	1
Volume Module:	AM Pk Hr											
Base Vol:	280	70	21	45	205	251	230	1189	316	56	1191	17
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	280	70	21	45	205	251	230	1189	316	56	1191	17
Added Vol:	40	5	7	0	3	16	32	103	120	4	49	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	320	75	28	45	208	267	262	1292	436	60	1240	17
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	348	82	30	49	226	290	285	1404	474	65	1348	18
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	348	82	30	49	226	290	285	1404	474	65	1348	18
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	348	82	30	49	226	290	285	1404	474	65	1348	18
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	3538	1583	1769	3538	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.10	0.02	0.02	0.03	0.06	0.18	0.08	0.21	0.30	0.02	0.20	0.01
Crit Moves:	****					****			****	****		
Green/Cycle:	0.15	0.19	0.19	0.23	0.27	0.27	0.14	0.44	0.44	0.03	0.33	0.33
Volume/Cap:	0.69	0.12	0.10	0.12	0.24	0.69	0.61	0.47	0.69	0.69	0.61	0.04
Delay/Veh:	44.3	33.8	33.7	30.9	28.8	37.5	42.9	20.1	25.5	67.0	28.7	22.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.3	33.8	33.7	30.9	28.8	37.5	42.9	20.1	25.5	67.0	28.7	22.9
LOS by Move:	D	C	C	C	C	D	D	C	C	E	C	C
HCM2k95thQ:	310	55	40	58	133	412	250	337	509	56	396	16

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	4 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	2	1	1	2	1	2	4	1	2	4	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Fnl Sat Adj:	0.90	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.15	0.19	0.19	0.23	0.27	0.27	0.14	0.44	0.44	0.03	0.33	0.33
ArrivalType:	4			4			4			4		
ProgFactor:	0.98	0.93	0.93	0.91	0.90	0.95	0.98	0.81	0.86	1.00	0.91	0.84
Q1:	4.6	0.9	0.6	1.0	2.3	6.9	3.7	6.2	9.2	0.9	7.9	0.3
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68	0.68	0.68
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68	0.68	0.68
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.08	0.37	0.34
Q2:	1.8	0.1	0.1	0.1	0.3	2.0	1.4	0.9	2.0	0.2	0.6	0.0
HCM2KQueue:	6.5	1.1	0.8	1.1	2.6	8.8	5.1	7.1	11.2	1.1	8.4	0.3
70th%Factor:	1.19	1.20	1.20	1.20	1.19	1.18	1.19	1.18	1.18	1.20	1.18	1.20
HCM2k70thQ:	7.7	1.3	0.9	1.3	3.1	10.4	6.1	8.4	13.1	1.3	10.0	0.4
85th%Factor:	1.54	1.59	1.59	1.59	1.57	1.52	1.55	1.54	1.51	1.59	1.53	1.60
HCM2k85thQ:	10.0	1.7	1.2	1.8	4.2	13.4	8.0	10.9	16.8	1.7	12.9	0.5
90th%Factor:	1.69	1.78	1.79	1.78	1.75	1.66	1.71	1.68	1.63	1.78	1.66	1.79
HCM2k90thQ:	10.9	1.9	1.4	2.0	4.6	14.6	8.8	11.9	18.2	1.9	14.0	0.5
95th%Factor:	1.92	2.07	2.08	2.06	2.02	1.87	1.95	1.91	1.82	2.06	1.88	2.09
HCM2k95thQ:	12.4	2.2	1.6	2.3	5.3	16.5	10.0	13.5	20.4	2.2	15.8	0.6
98th%Factor:	2.31	2.62	2.64	2.62	2.52	2.21	2.37	2.28	2.12	2.62	2.22	2.68
HCM2k98thQ:	14.9	2.8	2.0	2.9	6.6	19.5	12.2	16.1	23.7	2.8	18.8	0.8

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Eight Mile & SR 99 W Frontage

Cycle (sec):	100	Critical Vol./Cap.(X):	0.676
Loss Time (sec):	12	Average Delay (sec/veh):	25.3
Optimal Cycle:	56	Level Of Service:	C

Street Name:	SR 99 West Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1	0	1 0	0	1	0	3	0 1	2 0	2 1 0
Volume Module:	AM Pk Hr											
Base Vol:	1	4	81	332	5	3	4	1236	1	131	1251	211
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	4	81	332	5	3	4	1236	1	131	1251	211
Added Vol:	0	0	0	0	0	0	0	109	0	0	53	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	4	81	332	5	3	4	1345	1	131	1304	211
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	1	4	88	361	5	3	4	1462	1	142	1417	229
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	4	88	361	5	3	4	1462	1	142	1417	229
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	4	88	361	5	3	4	1462	1	142	1417	229
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.84	0.84	0.93	0.93	0.93	0.93	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	0.05	0.95	1.00	0.62	0.38	1.00	3.00	1.00	2.00	2.58	0.42
Final Sat.:	1769	75	1521	1769	1099	659	1769	5083	1583	3432	4283	693
Capacity Analysis Module:												
Vol/Sat:	0.00	0.06	0.06	0.20	0.00	0.00	0.00	0.29	0.00	0.04	0.33	0.33
Crit Moves:		****		****			****				****	
Green/Cycle:	0.04	0.09	0.09	0.30	0.34	0.34	0.00	0.43	0.43	0.06	0.49	0.49
Volume/Cap:	0.01	0.68	0.68	0.68	0.01	0.01	0.68	0.67	0.00	0.67	0.68	0.68
Delay/Veh:	45.9	57.1	57.1	34.1	21.6	21.6	196.3	23.6	16.2	53.8	20.3	20.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.9	57.1	57.1	34.1	21.6	21.6	196.3	23.6	16.2	53.8	20.3	20.3
LOS by Move:	D	E	E	C	C	C	F	C	B	D	C	C
HCM2k95thQ:	2	202	202	467	8	8	9	517	1	118	532	532

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0	1	2	0	2	1	0
Lane Group:	L	RT		RT	L	RT		RT	L	T		R	L	RT		RT
#LnsInGrps:	1	1		1	1	1		1	1	3		1	2	3		3
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.86	0.86		xxxx	0.94	0.94		xxxx	xxxx	0.85		xxxx	0.98	0.98	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.84	0.84		0.93	0.93	0.93		0.93	0.98	0.83		0.93	0.96	0.96	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.84	0.84		0.93	0.93	0.93		0.93	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.04	0.09	0.09		0.30	0.34	0.34		0.00	0.43	0.43		0.06	0.49	0.49	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.99	0.99		0.94	0.83	0.83		1.00	0.86	0.75		0.99	0.82	0.82	
Q1:	0.0	2.5	2.5		8.2	0.1	0.1		0.1	10.3	0.0		2.0	10.4	10.4	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.47	0.47	0.47		0.33	0.33	0.33	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.88	0.88	0.88		0.95	0.95	0.95	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.03	0.56	0.51		0.19	0.65	0.65	
Q2:	0.0	1.6	1.6		1.9	0.0	0.0		0.1	1.1	0.0		0.3	1.3	1.3	
HCM2KQueue:	0.0	4.1	4.1		10.2	0.1	0.1		0.2	11.4	0.0		2.3	11.7	11.7	
70th%Factor:	1.20	1.19	1.19		1.18	1.20	1.20		1.20	1.18	1.20		1.19	1.17	1.17	
HCM2k70thQ:	0.1	4.9	4.9		12.0	0.2	0.2		0.2	13.4	0.0		2.8	13.8	13.8	
85th%Factor:	1.60	1.56	1.56		1.51	1.60	1.60		1.60	1.51	1.60		1.58	1.50	1.50	
HCM2k85thQ:	0.1	6.4	6.4		15.4	0.2	0.2		0.3	17.1	0.0		3.7	17.7	17.7	
90th%Factor:	1.80	1.73	1.73		1.64	1.80	1.80		1.80	1.63	1.80		1.76	1.62	1.62	
HCM2k90thQ:	0.1	7.0	7.0		16.7	0.3	0.3		0.3	18.5	0.0		4.1	19.1	19.1	
95th%Factor:	2.10	1.98	1.98		1.84	2.10	2.10		2.09	1.82	2.10		2.03	1.81	1.81	
HCM2k95thQ:	0.1	8.1	8.1		18.7	0.3	0.3		0.4	20.7	0.0		4.7	21.3	21.3	
98th%Factor:	2.70	2.43	2.43		2.16	2.69	2.69		2.69	2.12	2.70		2.54	2.11	2.11	
HCM2k98thQ:	0.1	9.9	9.9		21.9	0.4	0.4		0.5	24.1	0.0		5.9	24.7	24.7	

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Eight Mile & SR 99 E Frontage

Cycle (sec):	100	Critical Vol./Cap.(X):	0.179
Loss Time (sec):	12	Average Delay (sec/veh):	3.8
Optimal Cycle:	27	Level Of Service:	A

Street Name:	SR 99 East Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	2 0	1	1 0	1 1	0
Volume Module:	AM Pk Hr											
Base Vol:	5	1	3	8	2	5	5	470	5	8	470	3
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	1	3	8	2	5	5	470	5	8	470	3
Added Vol:	0	0	0	0	0	0	0	9	0	0	5	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	1	3	8	2	5	5	479	5	8	475	3
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	5	1	3	9	2	5	5	521	5	9	516	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	1	3	9	2	5	5	521	5	9	516	3
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	5	1	3	9	2	5	5	521	5	9	516	3
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.87	0.87	0.93	0.88	0.88	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	1.00	0.25	0.75	1.00	0.29	0.71	1.00	2.00	1.00	1.00	1.99	0.01
Final Sat.:	1769	413	1240	1769	475	1188	1769	3538	1583	1769	3512	22
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.15	0.15
Crit Moves:	****				****		****				****	
Green/Cycle:	0.02	0.01	0.01	0.03	0.03	0.03	0.02	0.81	0.81	0.03	0.82	0.82
Volume/Cap:	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.00	0.18	0.18	0.18
Delay/Veh:	51.3	52.1	52.1	49.2	49.7	49.7	51.3	2.1	1.8	49.4	1.9	1.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.3	52.1	52.1	49.2	49.7	49.7	51.3	2.1	1.8	49.4	1.9	1.9
LOS by Move:	D	D	D	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	18	17	17	23	22	22	9	11	0	23	11	11

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	0 1	0	1	0	0 1	0	1	0	2 0	1	1	0	1 1	0	
Lane Group:	L	RT	RT		L	RT	RT		L	T	R		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	2	1		1	2	2	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.89	0.89		xxxx	0.89	0.89		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.87	0.87		0.93	0.88	0.88		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	0.95	
Fnl Sat Adj:	0.93	0.87	0.87		0.93	0.88	0.88		0.93	0.93	0.83		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.02	0.01	0.01	0.03	0.03	0.03	0.02	0.81	0.81	0.03	0.82	0.82
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	1.00	1.00	0.99	0.99	0.99	1.00	0.00	0.00	0.99	0.00	0.00
Q1:	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.0	0.0	0.2	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.19	0.19	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.99	0.99	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.09	0.93	0.84	1.00	1.00	1.00
Q2:	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.2	0.0	0.2	0.2	0.2
HCM2KQueue:	0.4	0.3	0.3	0.4	0.4	0.4	0.2	0.2	0.0	0.4	0.2	0.2
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	0.4	0.4	0.4	0.5	0.5	0.5	0.2	0.2	0.0	0.5	0.3	0.3
85th%Factor:	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
HCM2k85thQ:	0.6	0.5	0.5	0.7	0.7	0.7	0.3	0.3	0.0	0.7	0.3	0.3
90th%Factor:	1.79	1.79	1.79	1.79	1.79	1.79	1.80	1.80	1.80	1.79	1.80	1.80
HCM2k90thQ:	0.6	0.6	0.6	0.8	0.7	0.7	0.3	0.4	0.0	0.8	0.4	0.4
95th%Factor:	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.10	2.09	2.09	2.09
HCM2k95thQ:	0.7	0.7	0.7	0.9	0.9	0.9	0.4	0.4	0.0	0.9	0.5	0.5
98th%Factor:	2.67	2.68	2.68	2.67	2.67	2.67	2.69	2.68	2.70	2.67	2.68	2.68
HCM2k98thQ:	0.9	0.9	0.9	1.2	1.1	1.1	0.5	0.6	0.0	1.2	0.6	0.6

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 West & L.C.MarkTaylor/Marlette

Cycle (sec): 100 Critical Vol./Cap.(X): 0.632
Loss Time (sec): 12 Average Delay (sec/veh): 30.5
Optimal Cycle: 51 Level Of Service: C

Street Name:	West Lane						Lt.Col.Mark Taylor/Marlette Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 1	0	1 0	4 0	1	1 0	1 0	1	1 0	0 1	0
Volume Module:	AM Pk Hr											
Base Vol:	162	778	36	58	1309	110	132	105	138	70	102	28
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	162	778	36	58	1309	110	132	105	138	70	102	28
Added Vol:	0	84	40	36	52	7	9	15	0	164	39	13
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	162	862	76	94	1361	117	141	120	138	234	141	41
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	176	937	83	102	1479	127	153	130	150	254	153	45
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	176	937	83	102	1479	127	153	130	150	254	153	45
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	176	937	83	102	1479	127	153	130	150	254	153	45
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.88	0.88	0.93	0.89	0.83	0.93	0.98	0.83	0.93	0.95	0.95
Lanes:	1.00	3.68	0.32	1.00	4.00	1.00	1.00	1.00	1.00	1.00	0.77	0.23
Final Sat.:	1769	6154	543	1769	6778	1583	1769	1862	1583	1769	1393	405
Capacity Analysis Module:												
Vol/Sat:	0.10	0.15	0.15	0.06	0.22	0.08	0.09	0.07	0.09	0.14	0.11	0.11
Crit Moves:	****				****				****	****		
Green/Cycle:	0.16	0.36	0.36	0.14	0.35	0.35	0.17	0.15	0.15	0.23	0.21	0.21
Volume/Cap:	0.63	0.42	0.42	0.42	0.63	0.23	0.52	0.47	0.63	0.63	0.52	0.52
Delay/Veh:	44.1	23.9	23.9	40.6	28.0	23.5	39.7	40.1	45.4	38.1	36.3	36.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.1	23.9	23.9	40.6	28.0	23.5	39.7	40.1	45.4	38.1	36.3	36.3
LOS by Move:	D	C	C	D	C	C	D	D	D	D	D	D
HCM2k95thQ:	289	277	277	130	415	111	234	200	259	363	275	275

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #16 West & L.C.MarkTaylor/Marlette

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 3	1	0	1	0 4	0	1	1	0 1	0	1	1	0 0	1	0
Lane Group:	L	RT		RT	L	T		R	L	T		R	L	RT		RT
#LnsInGrps:	1	4		4	1	4		1	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.99	0.99		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.97	0.97		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	0.91		1.00	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.88	0.88		0.93	0.89	0.83		0.93	0.98	0.83		0.93	0.95	0.95	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #16 West & L.C.MarkTaylor/Marlette

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.16	0.36	0.36		0.14	0.35	0.35		0.17	0.15	0.15		0.23	0.21	0.21	
ArrivalType:		4				4				4				4		
ProgFactor:	0.97	0.86	0.86		0.97	0.91	0.85		0.96	0.97	0.98		0.96	0.95	0.95	
Q1:	4.5	5.0	5.0		2.5	8.6	2.1		3.7	3.2	3.8		6.1	4.6	4.6	
UpstreamVC:	0.00	0.00	0.00		0.90	0.90	0.90		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.32	0.32	0.32		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		0.10	0.18	0.16		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	1.5	0.7	0.7		0.1	0.3	0.0		1.0	0.8	1.5		1.6	1.0	1.0	
HCM2KQueue:	6.0	5.7	5.7		2.6	8.9	2.2		4.8	4.0	5.3		7.7	5.7	5.7	
70th%Factor:	1.19	1.19	1.19		1.19	1.18	1.19		1.19	1.19	1.19		1.18	1.19	1.19	
HCM2k70thQ:	7.1	6.8	6.8		3.1	10.5	2.6		5.7	4.8	6.3		9.1	6.7	6.7	
85th%Factor:	1.55	1.55	1.55		1.58	1.52	1.58		1.56	1.56	1.55		1.53	1.55	1.55	
HCM2k85thQ:	9.3	8.9	8.9		4.1	13.6	3.4		7.4	6.3	8.3		11.8	8.8	8.8	
90th%Factor:	1.70	1.70	1.70		1.75	1.66	1.76		1.72	1.73	1.71		1.67	1.70	1.70	
HCM2k90thQ:	10.2	9.7	9.7		4.5	14.7	3.8		8.2	7.0	9.1		12.8	9.6	9.6	
95th%Factor:	1.93	1.94	1.94		2.02	1.87	2.03		1.96	1.98	1.95		1.89	1.94	1.94	
HCM2k95thQ:	11.6	11.1	11.1		5.2	16.6	4.4		9.4	8.0	10.4		14.5	11.0	11.0	
98th%Factor:	2.33	2.34	2.34		2.52	2.20	2.55		2.39	2.43	2.36		2.25	2.35	2.35	
HCM2k98thQ:	14.0	13.4	13.4		6.5	19.6	5.6		11.4	9.8	12.6		17.3	13.3	13.3	

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

Cycle (sec):	100	Critical Vol./Cap.(X):	0.907
Loss Time (sec):	12	Average Delay (sec/veh):	46.8
Optimal Cycle:	113	Level Of Service:	D

Street Name:	Holman Road								Lt. Col. Mark Taylor Street								
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Y+R:	4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0		
Lanes:	1	0	3	0	1	1	0	3	0	1	1	0	1	0	1	1	0	0	1	0
Volume Module:	AM Pk Hr																			
Base Vol:	38	235	159			298	348	30			38	439	30			297	439	159		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	38	235	159			298	348	30			38	439	30			297	439	159		
Added Vol:	6	7	0			61	36	16			20	50	10			0	34	24		
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0		
Initial Fut:	44	242	159			359	384	46			58	489	40			297	473	183		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92		
PHF Volume:	48	263	173			390	417	50			63	532	43			323	514	199		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	48	263	173			390	417	50			63	532	43			323	514	199		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
FinalVolume:	48	263	173			390	417	50			63	532	43			323	514	199		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900		
Adjustment:	0.93	0.89	0.83			0.93	0.89	0.83			0.93	0.98	0.83			0.93	0.94	0.94		
Lanes:	1.00	3.00	1.00			1.00	3.00	1.00			1.00	1.00	1.00			1.00	0.72	0.28		
Final Sat.:	1769	5083	1583			1769	5083	1583			1769	1862	1583			1769	1286	498		
Capacity Analysis Module:																				
Vol/Sat:	0.03	0.05	0.11			0.22	0.08	0.03			0.04	0.29	0.03			0.18	0.40	0.40		
Crit Moves:			****			****						****				****				
Green/Cycle:	0.09	0.12	0.12			0.24	0.27	0.27			0.04	0.31	0.31			0.20	0.47	0.47		
Volume/Cap:	0.30	0.43	0.91			0.91	0.30	0.12			0.84	0.91	0.09			0.91	0.84	0.84		
Delay/Veh:	43.6	41.3	83.4			59.2	28.9	27.4			102.3	50.6	24.2			64.8	30.8	30.8		
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
AdjDel/Veh:	43.6	41.3	83.4			59.2	28.9	27.4			102.3	50.6	24.2			64.8	30.8	30.8		
LOS by Move:	D	D	F			E	C	C			F	D	C			E	C	C		
HCM2k95thQ:	67	132	298			671	172	54			118	746	40			593	845	845		

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																				
Lanes:	1	0	3	0	1	1	0	3	0	1	1	0	1	0	1	1	0	0	1	0
Lane Group:	L		T		R	L		T		R	L		T		R	L		RT		RT
#LnsInGrps:	1		3		1	1		3		1	1		1		1	1		1		1
HCM Ops Input Saturation Adj Module:																				
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12
CrsswalkWid:			8					8					8					8		
% Hev Veh:			2					2					2					2		
Grade:			0%					0%					0%					0%		
Parking/Hr:			No					No					No					No		
Bus Stp/Hr:			0					0					0					0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																			
Cnft Ped/Hr:			0					0					0					0		
ExclusiveRT:			Include					Include					Include					Include		
% RT Prtct:			0					0					0					0		
HCM Ops f(lt) Adj Case Module:																				
f(lt) Case:	1		xxxx		xxxx	1		xxxx		xxxx	1		xxxx		xxxx	1		xxxx		xxxx
HCM Ops Saturation Adj Module:																				
Ln Wid Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Hev Veh Adj:	0.98		0.98		0.98	0.98		0.98		0.98	0.98		0.98		0.98	0.98		0.98		0.98
Grade Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Parking Adj:	xxxx		xxxx		1.00	xxxx		xxxx		1.00	xxxx		xxxx		1.00	xxxx		1.00		1.00
Bus Stp Adj:	xxxx		xxxx		1.00	xxxx		xxxx		1.00	xxxx		xxxx		1.00	xxxx		1.00		1.00
Area Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
RT Adj:	xxxx		xxxx		0.85	xxxx		xxxx		0.85	xxxx		xxxx		0.85	xxxx		0.96		0.96
LT Adj:	0.95		xxxx		xxxxx	0.95		xxxx		xxxxx	0.95		xxxx		xxxxx	0.95		xxxx		xxxxx
PedBike Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
HCM Sat Adj:	0.93		0.98		0.83	0.93		0.98		0.83	0.93		0.98		0.83	0.93		0.94		0.94
Usr Sat Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
MLF Sat Adj:	1.00		0.91		1.00	1.00		0.91		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Fnl Sat Adj:	0.93		0.89		0.83	0.93		0.89		0.83	0.93		0.98		0.83	0.93		0.94		0.94
Delay Adjustment Factor Module:																				
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																			
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																			
DelAdjFctr:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.09	0.12	0.12	0.24	0.27	0.27	0.04	0.31	0.31	0.20	0.47	0.47
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.97	1.00	0.99	0.90	0.88	1.00	0.98	0.85	0.99	0.90	0.90
Q1:	1.2	2.4	4.7	10.4	3.0	0.9	1.7	13.8	0.7	8.7	15.6	15.6
UpstreamVC:	0.36	0.36	0.36	0.00	0.00	0.00	0.16	0.16	0.16	0.00	0.00	0.00
UpstreamAdj:	0.94	0.94	0.94	0.00	0.00	0.00	0.99	0.99	0.99	0.00	0.00	0.00
EarlyArrAdj:	0.23	0.28	0.26	1.00	1.00	1.00	0.15	0.53	0.48	1.00	1.00	1.00
Q2:	0.1	0.2	1.5	4.9	0.4	0.1	0.6	3.4	0.0	4.6	4.3	4.3
HCM2KQueue:	1.3	2.6	6.2	15.3	3.5	1.1	2.3	17.3	0.8	13.3	19.9	19.9
70th%Factor:	1.20	1.19	1.19	1.17	1.19	1.20	1.19	1.16	1.20	1.17	1.16	1.16
HCM2k70thQ:	1.6	3.1	7.4	17.9	4.1	1.3	2.8	20.1	0.9	15.6	23.1	23.1
85th%Factor:	1.59	1.57	1.54	1.48	1.57	1.59	1.58	1.47	1.59	1.49	1.45	1.45
HCM2k85thQ:	2.1	4.1	9.6	22.6	5.4	1.7	3.7	25.3	1.2	19.8	28.9	28.9
90th%Factor:	1.77	1.75	1.69	1.59	1.74	1.78	1.76	1.57	1.78	1.61	1.55	1.55
HCM2k90thQ:	2.3	4.6	10.5	24.2	6.0	1.9	4.1	27.1	1.4	21.3	30.8	30.8
95th%Factor:	2.06	2.02	1.93	1.76	2.00	2.07	2.03	1.73	2.07	1.79	1.70	1.70
HCM2k95thQ:	2.7	5.3	11.9	26.8	6.9	2.2	4.7	29.9	1.6	23.7	33.8	33.8
98th%Factor:	2.60	2.52	2.32	2.01	2.47	2.62	2.54	1.97	2.64	2.06	1.92	1.92
HCM2k98thQ:	3.4	6.6	14.4	30.7	8.5	2.8	5.9	33.9	2.0	27.3	38.1	38.1

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.674
Loss Time (sec): 12 Average Delay (sec/veh): 29.8
Optimal Cycle: 56 Level Of Service: C

Street Name:	West Lane						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	2	0	1	2	0	2	0	1
Volume Module:	AM Pk Hr											
Base Vol:	300	907	133	85	1527	81	100	253	264	234	215	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	300	907	133	85	1527	81	100	253	264	234	215	38
Added Vol:	0	81	0	53	146	17	10	0	0	12	1	33
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	300	988	133	138	1673	98	110	253	264	246	216	71
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	326	1074	145	150	1818	107	120	275	287	267	235	77
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	326	1074	145	150	1818	107	120	275	287	267	235	77
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	326	1074	145	150	1818	107	120	275	287	267	235	77
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3538	7448	1583	3538	7448	1583	3538	3724	1583	3538	3724	1583
Capacity Analysis Module:												
Vol/Sat:	0.09	0.14	0.09	0.04	0.24	0.07	0.03	0.07	0.18	0.08	0.06	0.05
Crit Moves:	****				****				****	****		
Green/Cycle:	0.14	0.39	0.39	0.11	0.36	0.36	0.13	0.27	0.27	0.11	0.25	0.25
Volume/Cap:	0.67	0.37	0.24	0.37	0.67	0.19	0.25	0.27	0.67	0.67	0.25	0.20
Delay/Veh:	44.8	22.1	21.0	41.6	27.6	22.0	39.2	29.0	36.9	47.2	30.3	30.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.8	22.1	21.0	41.6	27.6	22.0	39.2	29.0	36.9	47.2	30.3	30.0
LOS by Move:	D	C	C	D	C	C	D	C	D	D	C	C
HCM2k95thQ:	289	248	128	124	527	97	90	155	403	254	137	91

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	4	0 1	2	0	4	0 1	2	0	2	0 1	2	0	2	0 1
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	4	1		2	4	1		2	2	1		2	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.14	0.39	0.39		0.11	0.36	0.36		0.13	0.27	0.27		0.11	0.25	0.25	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.84	0.82		0.97	0.91	0.83		0.96	0.90	0.95		0.98	0.91	0.91	
Q1:	4.2	4.5	2.2		1.9	9.7	1.7		1.4	2.7	6.7		3.5	2.4	1.5	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	1.8	0.6	0.3		0.6	1.9	0.2		0.3	0.4	1.9		1.7	0.3	0.2	
HCM2KQueue:	6.0	5.1	2.5		2.5	11.6	1.9		1.8	3.1	8.6		5.2	2.7	1.8	
70th%Factor:	1.19	1.19	1.19		1.19	1.17	1.20		1.20	1.19	1.18		1.19	1.19	1.20	
HCM2k70thQ:	7.1	6.0	3.0		2.9	13.6	2.3		2.1	3.7	10.2		6.2	3.2	2.1	
85th%Factor:	1.55	1.55	1.58		1.58	1.50	1.58		1.58	1.57	1.53		1.55	1.57	1.58	
HCM2k85thQ:	9.2	7.9	4.0		3.9	17.5	3.0		2.8	4.9	13.1		8.1	4.3	2.8	
90th%Factor:	1.70	1.71	1.75		1.75	1.62	1.76		1.77	1.74	1.66		1.71	1.75	1.77	
HCM2k90thQ:	10.1	8.7	4.4		4.3	18.9	3.4		3.1	5.4	14.3		8.9	4.8	3.1	
95th%Factor:	1.93	1.95	2.02		2.02	1.81	2.04		2.04	2.01	1.87		1.95	2.02	2.04	
HCM2k95thQ:	11.5	9.9	5.1		5.0	21.1	3.9		3.6	6.2	16.1		10.2	5.5	3.6	
98th%Factor:	2.33	2.38	2.52		2.53	2.11	2.56		2.57	2.49	2.22		2.37	2.51	2.57	
HCM2k98thQ:	13.9	12.1	6.4		6.2	24.5	4.9		4.5	7.7	19.1		12.4	6.8	4.6	

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.539
Loss Time (sec): 12 | Average Delay (sec/veh): 33.3
Optimal Cycle: 43 | Level Of Service: C

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:	AM Pk Hr											
Base Vol:	157	356	106	128	609	80	94	487	135	207	467	61
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	157	356	106	128	609	80	94	487	135	207	467	61
Added Vol:	2	12	0	0	24	23	1	48	4	0	28	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	159	368	106	128	633	103	95	535	139	207	495	61
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	173	400	115	139	688	112	103	582	151	225	538	66
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	173	400	115	139	688	112	103	582	151	225	538	66
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	173	400	115	139	688	112	103	582	151	225	538	66
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.10	0.08	0.07	0.08	0.14	0.07	0.06	0.11	0.10	0.13	0.11	0.04
Crit Moves:	****				****			****		****		
Green/Cycle:	0.18	0.22	0.22	0.22	0.25	0.25	0.16	0.21	0.21	0.24	0.29	0.29
Volume/Cap:	0.54	0.36	0.34	0.36	0.54	0.28	0.37	0.54	0.45	0.54	0.37	0.15
Delay/Veh:	39.0	33.6	33.7	33.9	32.9	30.6	38.3	35.6	35.3	34.9	28.4	26.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.0	33.6	33.7	33.9	32.9	30.6	38.3	35.6	35.3	34.9	28.4	26.6
LOS by Move:	D	C	C	C	C	C	D	D	D	C	C	C
HCM2k95thQ:	225	173	136	165	298	124	151	295	209	273	207	66

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	1	3	1	1	3	1	1	3	1	1	3	1
HCM Ops Adjusted Lane Utilization Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Fnl Sat Adj:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.18	0.22	0.22	0.22	0.25	0.25	0.16	0.21	0.21	0.24	0.29	0.29
ArrivalType:		4			4			4			4	
ProgFactor:	0.96	0.93	0.93	0.93	0.94	0.91	0.96	0.95	0.94	0.94	0.90	0.88
Q1:	4.2	3.2	2.5	3.1	5.7	2.3	2.5	5.0	3.4	5.2	3.9	1.2
UpstreamVC:	0.36	0.36	0.36	0.30	0.30	0.30	0.00	0.00	0.00	0.36	0.36	0.36
UpstreamAdj:	0.94	0.94	0.94	0.96	0.96	0.96	0.00	0.00	0.00	0.94	0.94	0.94
EarlyArrAdj:	0.35	0.40	0.36	0.40	0.45	0.41	1.00	1.00	1.00	0.41	0.48	0.43
Q2:	0.4	0.2	0.2	0.2	0.5	0.2	0.6	1.1	0.8	0.5	0.3	0.1
HCM2KQueue:	4.6	3.5	2.7	3.3	6.2	2.4	3.0	6.1	4.2	5.6	4.2	1.3
70th%Factor:	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.20
HCM2k70thQ:	5.5	4.1	3.2	3.9	7.4	2.9	3.6	7.3	5.0	6.7	5.0	1.5
85th%Factor:	1.56	1.57	1.57	1.57	1.54	1.58	1.57	1.54	1.56	1.55	1.56	1.59
HCM2k85thQ:	7.1	5.4	4.3	5.2	9.6	3.9	4.7	9.5	6.6	8.7	6.5	2.0
90th%Factor:	1.72	1.74	1.75	1.74	1.69	1.75	1.74	1.69	1.72	1.70	1.72	1.78
HCM2k90thQ:	7.9	6.0	4.7	5.7	10.5	4.3	5.3	10.4	7.3	9.6	7.2	2.3
95th%Factor:	1.97	1.99	2.02	2.00	1.93	2.02	2.01	1.93	1.97	1.94	1.98	2.06
HCM2k95thQ:	9.0	6.9	5.5	6.6	11.9	4.9	6.1	11.8	8.4	10.9	8.3	2.6
98th%Factor:	2.40	2.47	2.51	2.48	2.32	2.53	2.49	2.32	2.42	2.35	2.42	2.61
HCM2k98thQ:	11.0	8.5	6.8	8.2	14.4	6.2	7.5	14.2	10.3	13.2	10.2	3.3

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 Morada Ln & SR99 W Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.409
Loss Time (sec):	12	Average Delay (sec/veh):	24.2
Optimal Cycle:	36	Level Of Service:	C

Street Name:	SR 99 West Frontage Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	2 0	0 1	0	1 0	2 1	0	1 0	2 0	1
Volume Module:	AM Pk Hr											
Base Vol:	3	27	45	417	35	11	16	468	2	90	506	273
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	27	45	417	35	11	16	468	2	90	506	273
Added Vol:	0	0	0	0	0	0	0	48	0	0	28	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	27	45	417	35	11	16	516	2	90	534	273
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	3	29	49	453	38	12	17	561	2	98	580	297
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	29	49	453	38	12	17	561	2	98	580	297
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	29	49	453	38	12	17	561	2	98	580	297
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.90	0.94	0.94	0.93	0.89	0.89	0.93	0.93	0.83
Lanes:	2.00	1.00	1.00	2.00	0.76	0.24	1.00	2.99	0.01	1.00	2.00	1.00
Final Sat.:	3432	1862	1583	3432	1366	429	1769	5059	20	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.02	0.03	0.13	0.03	0.03	0.01	0.11	0.11	0.06	0.16	0.19
Crit Moves:			****	****			****					****
Green/Cycle:	0.01	0.08	0.08	0.32	0.38	0.38	0.02	0.32	0.32	0.16	0.46	0.46
Volume/Cap:	0.07	0.21	0.41	0.41	0.07	0.07	0.41	0.34	0.34	0.34	0.36	0.41
Delay/Veh:	49.4	44.2	46.4	26.7	19.5	19.5	54.4	26.0	26.0	38.0	17.7	18.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.4	44.2	46.4	26.7	19.5	19.5	54.4	26.0	26.0	38.0	17.7	18.5
LOS by Move:	D	D	D	C	B	B	D	C	C	D	B	B
HCM2k95thQ:	6	52	98	252	40	40	28	202	202	126	226	230

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #22 Morada Ln & SR99 W Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 1	0	1	2	0 0	1	0	1	0 2	1	0	1	0 2	0	1
Lane Group:	L	T		R	L	RT		RT	L	RT		RT	L	T		R
#LnsInGrps:	2	1		1	2	1		1	1	3		3	1	2		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.96	0.96		xxxx	1.00	1.00		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.94	0.94		0.93	0.98	0.98		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		0.97	1.00	1.00		1.00	0.91	0.91		1.00	0.95	1.00	
Fnl Sat Adj:	0.90	0.98	0.83		0.90	0.94	0.94		0.93	0.89	0.89		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #22 Morada Ln & SR99 W Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.01	0.08	0.08		0.32	0.38	0.38		0.02	0.32	0.32		0.16	0.46	0.46	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.98	0.98		0.89	0.80	0.80		1.00	0.88	0.88		0.96	0.77	0.78	
Q1:		0.0	0.7		1.3	4.5	0.7		0.7	0.5	3.8		3.8	2.3	4.2	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.54	0.54	0.54		0.23	0.23	0.23	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.83	0.83	0.83		0.98	0.98	0.98	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.09	0.45	0.45		0.34	0.66	0.59	
Q2:		0.1	0.3		0.6	0.7	0.1		0.1	0.2	0.2		0.2	0.4	0.4	
HCM2KQueue:		0.1	1.0		1.9	5.2	0.8		0.8	0.5	4.1		4.1	2.5	4.6	
70th%Factor:	1.20	1.20	1.20		1.19	1.20	1.20		1.20	1.19	1.19		1.19	1.19	1.19	
HCM2k70thQ:		0.1	1.2		2.3	6.1	0.9		0.9	0.6	4.9		4.9	3.0	5.5	
85th%Factor:	1.60	1.59	1.58		1.55	1.59	1.59		1.59	1.56	1.56		1.58	1.56	1.56	
HCM2k85thQ:		0.2	1.6		3.0	8.0	1.2		1.2	0.9	6.4		6.4	3.9	7.2	
90th%Factor:	1.80	1.78	1.76		1.71	1.78	1.78		1.79	1.73	1.73		1.75	1.72	1.72	
HCM2k90thQ:		0.2	1.8		3.4	8.8	1.4		1.4	1.0	7.0		7.0	4.4	7.9	
95th%Factor:	2.10	2.07	2.04		1.95	2.07	2.07		2.08	1.98	1.98		2.02	1.96	1.96	
HCM2k95thQ:		0.3	2.1		3.9	10.1	1.6		1.6	1.1	8.1		8.1	5.0	9.0	
98th%Factor:	2.69	2.63	2.56		2.37	2.64	2.64		2.66	2.43	2.43		2.53	2.40	2.40	
HCM2k98thQ:		0.3	2.6		4.9	12.3	2.1		2.1	1.4	9.9		9.9	6.3	11.0	

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 West Ln & West Ln Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.776
Loss Time (sec):	12	Average Delay (sec/veh):	24.9
Optimal Cycle:	72	Level Of Service:	C

Street Name:	West Lane						West Lane Frontage Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3	1 0	1 0	3	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:	AM Pk Hr											
Base Vol:	222	1170	53	17	1912	29	40	32	208	78	21	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	222	1170	53	17	1912	29	40	32	208	78	21	6
Added Vol:	0	81	0	0	157	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	222	1251	53	17	2069	29	40	32	208	78	21	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	241	1360	58	18	2249	32	43	35	226	85	23	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	241	1360	58	18	2249	32	43	35	226	85	23	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	241	1360	58	18	2249	32	43	35	226	85	23	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.89	0.89	0.93	0.85	0.85	0.93	0.95	0.95
Lanes:	1.00	3.84	0.16	1.00	3.94	0.06	1.00	0.13	0.87	1.00	0.78	0.22
Final Sat.:	1769	6463	274	1769	6671	93	1769	216	1404	1769	1400	400
Capacity Analysis Module:												
Vol/Sat:	0.14	0.21	0.21	0.01	0.34	0.34	0.02	0.16	0.16	0.05	0.02	0.02
Crit Moves:	****				****			****		****		
Green/Cycle:	0.18	0.58	0.58	0.03	0.43	0.43	0.16	0.21	0.21	0.06	0.11	0.11
Volume/Cap:	0.78	0.36	0.36	0.36	0.78	0.78	0.15	0.78	0.78	0.78	0.15	0.15
Delay/Veh:	50.9	11.1	11.1	52.0	25.5	25.5	36.2	48.2	48.2	74.9	40.9	40.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.9	11.1	11.1	52.0	25.5	25.5	36.2	48.2	48.2	74.9	40.9	40.9
LOS by Move:	D	B	B	D	C	C	D	D	D	E	D	D
HCM2k95thQ:	346	187	187	52	712	712	60	435	435	215	46	46

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	3	1 0		1 0	3	1 0		1 0	0	1 0		1 0	0	1 0	
Lane Group:	L	RT	RT		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	4	4		1	4	4		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.99	0.99		xxxx	1.00	1.00		xxxx	0.87	0.87		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.97	0.97		0.93	0.98	0.98		0.93	0.85	0.85		0.93	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	0.91		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.89		0.93	0.89	0.89		0.93	0.85	0.85		0.93	0.95	0.95	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.18	0.58	0.58	0.03	0.43	0.43	0.16	0.21	0.21	0.06	0.11	0.11
ArrivalType:	4			4			4			4		
ProgFactor:	0.98	0.59	0.59	0.99	0.90	0.90	0.94	0.98	0.98	0.99	0.97	0.97
Q1:	6.3	3.4	3.4	0.5	13.3	13.3	1.0	6.7	6.7	2.3	0.7	0.7
UpstreamVC:	0.45	0.45	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.89	0.89	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.33	0.69	0.69	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	1.0	0.4	0.4	0.5	3.0	3.0	0.2	2.7	2.7	2.1	0.2	0.2
HCM2KQueue:	7.3	3.8	3.8	1.0	16.3	16.3	1.2	9.4	9.4	4.4	0.9	0.9
70th%Factor:	1.18	1.19	1.19	1.20	1.17	1.17	1.20	1.18	1.18	1.19	1.20	1.20
HCM2k70thQ:	8.6	4.5	4.5	1.2	19.1	19.1	1.4	11.0	11.0	5.2	1.1	1.1
85th%Factor:	1.54	1.56	1.56	1.59	1.47	1.47	1.59	1.52	1.52	1.56	1.59	1.59
HCM2k85thQ:	11.2	5.9	5.9	1.6	24.1	24.1	1.8	14.2	14.2	6.8	1.4	1.4
90th%Factor:	1.68	1.73	1.73	1.78	1.58	1.58	1.78	1.65	1.65	1.72	1.78	1.78
HCM2k90thQ:	12.2	6.5	6.5	1.8	25.8	25.8	2.1	15.5	15.5	7.5	1.6	1.6
95th%Factor:	1.90	1.99	1.99	2.07	1.74	1.74	2.06	1.86	1.86	1.97	2.07	2.07
HCM2k95thQ:	13.8	7.5	7.5	2.1	28.5	28.5	2.4	17.4	17.4	8.6	1.8	1.8
98th%Factor:	2.27	2.45	2.45	2.63	1.98	1.98	2.61	2.19	2.19	2.41	2.63	2.63
HCM2k98thQ:	16.5	9.2	9.2	2.6	32.4	32.4	3.0	20.5	20.5	10.6	2.3	2.3

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 West Lane & Knickerbocker Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.738
Loss Time (sec):	12	Average Delay (sec/veh):	23.5
Optimal Cycle:	65	Level Of Service:	C

Street Name:	West Lane						Knickerbocker Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3	1 0	1 0	3	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:	AM Pk Hr											
Base Vol:	126	1286	35	92	2101	140	166	78	103	72	83	49
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	126	1286	35	92	2101	140	166	78	103	72	83	49
Added Vol:	0	81	0	0	157	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	126	1367	35	92	2258	140	166	78	103	72	83	49
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	137	1486	38	100	2454	152	180	85	112	78	90	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	137	1486	38	100	2454	152	180	85	112	78	90	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	137	1486	38	100	2454	152	180	85	112	78	90	53
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.88	0.88	0.93	0.90	0.90	0.93	0.93	0.93
Lanes:	1.00	3.90	0.10	1.00	3.77	0.23	1.00	0.43	0.57	1.00	0.63	0.37
Final Sat.:	1769	6582	169	1769	6325	392	1769	734	970	1769	1105	652
Capacity Analysis Module:												
Vol/Sat:	0.08	0.23	0.23	0.06	0.39	0.39	0.10	0.12	0.12	0.04	0.08	0.08
Crit Moves:	****				****		****				****	
Green/Cycle:	0.10	0.50	0.50	0.13	0.53	0.53	0.14	0.18	0.18	0.07	0.11	0.11
Volume/Cap:	0.74	0.45	0.45	0.45	0.74	0.74	0.74	0.64	0.64	0.64	0.74	0.74
Delay/Veh:	57.8	15.9	15.9	41.9	19.2	19.2	52.5	42.6	42.6	56.4	56.9	56.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	57.8	15.9	15.9	41.9	19.2	19.2	52.5	42.6	42.6	56.4	56.9	56.9
LOS by Move:	E	B	B	D	B	B	D	D	D	E	E	E
HCM2k95thQ:	203	281	281	133	597	597	331	312	312	175	286	286

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 3	1	0	1	0 3	1	0	1	0 0	1	0	1	0 0	1	0
Lane Group:	L	RT		RT	L	RT		RT	L	RT		RT	L	RT		RT
#LnsInGrps:	1	4		4	1	4		4	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	1.00	1.00		xxxx	0.99	0.99		xxxx	0.92	0.92		xxxx	0.94	0.94	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.98		0.93	0.97	0.97		0.93	0.90	0.90		0.93	0.93	0.93	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	0.91		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.89		0.93	0.88	0.88		0.93	0.90	0.90		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.10	0.50	0.50		0.13	0.53	0.53		0.14	0.18	0.18		0.07	0.11	0.11	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.73	0.73		0.97	0.80	0.80		0.98	0.97	0.97		0.99	0.99	0.99	
Q1:	3.6	5.4	5.4		2.5	12.3	12.3		4.7	4.9	4.9		2.1	3.8	3.8	
UpstreamVC:	0.71	0.71	0.71		0.78	0.78	0.78		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.64	0.64	0.64		0.54	0.54	0.54		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	0.17	0.45	0.45		0.16	0.39	0.39		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.4	0.4	0.4		0.1	1.1	1.1		2.2	1.6	1.6		1.4	2.1	2.1	
HCM2KQueue:	4.1	5.8	5.8		2.6	13.4	13.4		6.9	6.5	6.5		3.5	5.9	5.9	
70th%Factor:	1.19	1.19	1.19		1.19	1.17	1.17		1.18	1.18	1.18		1.19	1.19	1.19	
HCM2k70thQ:	4.9	6.9	6.9		3.1	15.7	15.7		8.2	7.7	7.7		4.2	7.0	7.0	
85th%Factor:	1.56	1.55	1.55		1.57	1.49	1.49		1.54	1.54	1.54		1.57	1.55	1.55	
HCM2k85thQ:	6.4	9.0	9.0		4.1	19.9	19.9		10.7	10.0	10.0		5.5	9.2	9.2	
90th%Factor:	1.73	1.70	1.70		1.75	1.61	1.61		1.68	1.69	1.69		1.74	1.70	1.70	
HCM2k90thQ:	7.1	9.9	9.9		4.6	21.5	21.5		11.7	11.0	11.0		6.1	10.1	10.1	
95th%Factor:	1.98	1.93	1.93		2.02	1.79	1.79		1.91	1.92	1.92		1.99	1.93	1.93	
HCM2k95thQ:	8.1	11.2	11.2		5.3	23.9	23.9		13.2	12.5	12.5		7.0	11.4	11.4	
98th%Factor:	2.43	2.34	2.34		2.52	2.06	2.06		2.29	2.31	2.31		2.46	2.33	2.33	
HCM2k98thQ:	10.0	13.6	13.6		6.6	27.5	27.5		15.9	15.0	15.0		8.7	13.8	13.8	

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.812
Loss Time (sec):	12	Average Delay (sec/veh):	34.8
Optimal Cycle:	80	Level Of Service:	C

Street Name:	West Lane						Hammer Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	4 0	1	2 0	4 0	1	2 0	4 0	1	2 0	4 0	1
Volume Module:	AM Pk Hr											
Base Vol:	113	920	268	696	1429	124	155	782	93	539	806	380
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	113	920	268	696	1429	124	155	782	93	539	806	380
Added Vol:	0	81	0	0	157	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	113	1001	268	696	1586	124	155	782	93	539	806	380
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	123	1088	291	757	1724	135	168	850	101	586	876	413
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	123	1088	291	757	1724	135	168	850	101	586	876	413
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	123	1088	291	757	1724	135	168	850	101	586	876	413
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.04	0.16	0.18	0.22	0.25	0.09	0.05	0.13	0.06	0.17	0.13	0.26
Crit Moves:			****	****			****					****
Green/Cycle:	0.06	0.23	0.23	0.27	0.44	0.44	0.06	0.16	0.16	0.22	0.32	0.32
Volume/Cap:	0.58	0.71	0.81	0.81	0.58	0.20	0.81	0.78	0.39	0.78	0.40	0.81
Delay/Veh:	49.8	37.2	49.8	39.5	21.6	17.5	67.4	43.7	38.5	41.7	26.6	40.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.8	37.2	49.8	39.5	21.6	17.5	67.4	43.7	38.5	41.7	26.6	40.8
LOS by Move:	D	D	D	D	C	B	E	D	D	D	C	D
HCM2k95thQ:	144	440	487	498	413	94	228	409	153	395	236	507

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2 0	4 0	1		2 0	4 0	1		2 0	4 0	1		2 0	4 0	1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	4	1		2	4	1		2	4	1		2	4	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.06	0.23	0.23	0.27	0.44	0.44	0.06	0.16	0.16	0.22	0.32	0.32
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.96	0.98	0.97	0.84	0.77	1.00	0.98	0.96	0.97	0.89	0.95
Q1:	1.7	7.4	7.5	9.8	8.3	1.8	2.4	6.1	2.4	7.7	4.6	10.1
UpstreamVC:	0.00	0.00	0.00	0.74	0.74	0.74	0.00	0.00	0.00	0.77	0.77	0.77
UpstreamAdj:	0.00	0.00	0.00	0.60	0.60	0.60	0.00	0.00	0.00	0.55	0.55	0.55
EarlyArrAdj:	1.00	1.00	1.00	0.28	0.39	0.35	1.00	1.00	1.00	0.23	0.30	0.27
Q2:	1.2	2.1	3.1	1.1	0.5	0.1	2.3	2.6	0.6	0.7	0.2	1.1
HCM2KQueue:	2.9	9.5	10.6	10.9	8.9	1.8	4.6	8.7	3.0	8.4	4.8	11.1
70th%Factor:	1.19	1.18	1.18	1.18	1.18	1.20	1.19	1.18	1.19	1.18	1.19	1.18
HCM2k70thQ:	3.4	11.2	12.5	12.8	10.4	2.2	5.5	10.3	3.6	9.9	5.7	13.1
85th%Factor:	1.57	1.52	1.51	1.51	1.52	1.58	1.56	1.52	1.57	1.53	1.56	1.51
HCM2k85thQ:	4.5	14.4	16.1	16.4	13.5	2.9	7.2	13.3	4.8	12.9	7.5	16.8
90th%Factor:	1.75	1.65	1.64	1.63	1.66	1.76	1.72	1.66	1.74	1.66	1.71	1.63
HCM2k90thQ:	5.0	15.7	17.4	17.8	14.7	3.3	8.0	14.5	5.3	14.0	8.3	18.1
95th%Factor:	2.01	1.85	1.83	1.83	1.87	2.04	1.96	1.87	2.01	1.88	1.96	1.82
HCM2k95thQ:	5.7	17.6	19.5	19.9	16.5	3.8	9.1	16.3	6.1	15.8	9.4	20.3
98th%Factor:	2.50	2.18	2.14	2.13	2.21	2.57	2.40	2.21	2.49	2.22	2.39	2.12
HCM2k98thQ:	7.1	20.7	22.8	23.2	19.5	4.7	11.1	19.3	7.6	18.7	11.5	23.6

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.768
Loss Time (sec):	12	Average Delay (sec/veh):	33.7
Optimal Cycle:	70	Level Of Service:	C

Street Name:	Hammer Lane						Holman Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 2	1 0	2	0 3	0 1	2	0 3	1 0	2	0 3	1 0
Volume Module:	AM Pk Hr											
Base Vol:	327	311	82	183	641	307	329	1506	305	182	1506	83
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	327	311	82	183	641	307	329	1506	305	182	1506	83
Added Vol:	0	14	0	0	28	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	327	325	82	183	669	307	329	1506	305	182	1506	83
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	355	353	89	199	727	334	358	1637	332	198	1637	90
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	355	353	89	199	727	334	358	1637	332	198	1637	90
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	355	353	89	199	727	334	358	1637	332	198	1637	90
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.87	0.87	0.90	0.89	0.83	0.90	0.87	0.87	0.90	0.88	0.88
Lanes:	2.00	2.40	0.60	2.00	3.00	1.00	2.00	3.33	0.67	2.00	3.79	0.21
Final Sat.:	3432	3937	993	3432	5083	1583	3432	5495	1113	3432	6372	351
Capacity Analysis Module:												
Vol/Sat:	0.10	0.09	0.09	0.06	0.14	0.21	0.10	0.30	0.30	0.06	0.26	0.26
Crit Moves:	****					****	****				****	
Green/Cycle:	0.13	0.25	0.25	0.16	0.27	0.27	0.14	0.39	0.39	0.08	0.33	0.33
Volume/Cap:	0.77	0.36	0.36	0.36	0.52	0.77	0.77	0.76	0.76	0.76	0.77	0.77
Delay/Veh:	49.3	31.2	31.2	37.8	31.1	41.4	49.2	27.4	27.4	57.1	31.4	31.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.3	31.2	31.2	37.8	31.1	41.4	49.2	27.4	27.4	57.1	31.4	31.4
LOS by Move:	D	C	C	D	C	D	D	C	C	E	C	C
HCM2k95thQ:	346	197	197	131	300	432	262	574	574	236	620	620

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	1	0	2	0 3	0	1	2	0 3	1	0	2	0 3	1	0
Lane Group:	L	RT		RT	L	T		R	L	RT		RT	L	RT		RT
#LnsInGrps:	2	3		3	2	3		1	2	4		4	2	4		4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.97	0.97		xxxx	xxxx	0.85		xxxx	0.98	0.98		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.95	0.95		0.93	0.98	0.83		0.93	0.96	0.96		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	0.91		0.97	0.91	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.87	0.87		0.90	0.89	0.83		0.90	0.87	0.87		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.13	0.25	0.25		0.16	0.27	0.27		0.14	0.39	0.39		0.08	0.33	0.33	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.92	0.92		0.96	0.93	0.96		0.99	0.91	0.91		0.99	0.94	0.94	
Q1:	4.8	3.4	3.4		2.4	5.8	8.2		4.9	11.8	11.8		2.8	11.1	11.1	
UpstreamVC:	0.00	0.00	0.00		0.54	0.54	0.54		0.78	0.78	0.78		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.83	0.83	0.83		0.54	0.54	0.54		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		0.29	0.41	0.37		0.17	0.32	0.32		1.00	1.00	1.00	
Q2:	2.4	0.6	0.6		0.2	0.4	1.1		0.5	1.0	1.0		2.1	2.9	2.9	
HCM2KQueue:	7.3	4.0	4.0		2.6	6.2	9.3		5.4	12.8	12.8		4.8	14.0	14.0	
70th%Factor:	1.18	1.19	1.19		1.19	1.19	1.18		1.19	1.17	1.17		1.19	1.17	1.17	
HCM2k70thQ:	8.6	4.7	4.7		3.1	7.4	11.0		6.4	15.0	15.0		5.7	16.3	16.3	
85th%Factor:	1.54	1.56	1.56		1.58	1.54	1.52		1.55	1.50	1.50		1.56	1.49	1.49	
HCM2k85thQ:	11.2	6.2	6.2		4.1	9.6	14.1		8.4	19.1	19.1		7.5	20.8	20.8	
90th%Factor:	1.68	1.73	1.73		1.75	1.69	1.65		1.71	1.61	1.61		1.71	1.60	1.60	
HCM2k90thQ:	12.2	6.9	6.9		4.5	10.5	15.3		9.2	20.6	20.6		8.3	22.3	22.3	
95th%Factor:	1.90	1.98	1.98		2.02	1.92	1.86		1.94	1.79	1.79		1.96	1.78	1.78	
HCM2k95thQ:	13.8	7.9	7.9		5.2	12.0	17.3		10.5	23.0	23.0		9.4	24.8	24.8	
98th%Factor:	2.27	2.44	2.44		2.52	2.32	2.19		2.36	2.07	2.07		2.39	2.04	2.04	
HCM2k98thQ:	16.5	9.7	9.7		6.5	14.4	20.3		12.7	26.5	26.5		11.5	28.5	28.5	

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #45 LtCol Mark Taylor & Ham Ln (S)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.160
Loss Time (sec):	9	Average Delay (sec/veh):	9.8
Optimal Cycle:	22	Level Of Service:	A

Street Name:	Ham Lane (South)						Lt. Col. Mark Taylor Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	0	1	0	0	0	0	0	0	1
	1	0	2	0	0							
Volume Module:	AM Pk Hr											
Base Vol:	1	0	27	0	0	0	0	207	1	42	197	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	0	27	0	0	0	0	207	1	42	197	0
Added Vol:	21	0	0	0	0	0	0	80	36	0	55	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	22	0	27	0	0	0	0	287	37	42	252	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	24	0	29	0	0	0	0	312	40	46	274	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	0	29	0	0	0	0	312	40	46	274	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	24	0	29	0	0	0	0	312	40	46	274	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.92	0.92	0.93	0.93	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.77	0.23	1.00	2.00	0.00
Final Sat.:	1769	0	1583	0	0	0	0	3081	397	1769	3538	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.10	0.10	0.03	0.08	0.00
Crit Moves:			****					****		****		
Green/Cycle:	0.12	0.00	0.12	0.00	0.00	0.00	0.00	0.63	0.63	0.16	0.79	0.00
Volume/Cap:	0.12	0.00	0.16	0.00	0.00	0.00	0.00	0.16	0.16	0.16	0.10	0.00
Delay/Veh:	39.9	0.0	40.2	0.0	0.0	0.0	0.0	7.5	7.5	36.4	2.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.9	0.0	40.2	0.0	0.0	0.0	0.0	7.5	7.5	36.4	2.3	0.0
LOS by Move:	D	A	D	A	A	A	A	A	A	D	A	A
HCM2k95thQ:	37	0	46	0	0	0	0	56	56	55	2	0

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #45 LtCol Mark Taylor & Ham Ln (S)

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	1	0	0	0	1		0	0	0	0	0		0	0	1	1	0		1	0	2	0	0	
Lane Group:	L		xxxx		R		xxxx	xxxx		xxxx		xxxx	RT			RT			L		T		xxxx	
#LnsInGrps:	1		0		1		0	0		0		0	2			2			1		2		0	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12	12		12		12	12			12			12		12		12	
CrsswalkWid:			8					8					8								8			
% Hev Veh:			2					2					2								2			
Grade:			0%					0%					0%								0%			
Parking/Hr:			No					No					No								No			
Bus Stp/Hr:			0					0					0								0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0					0					0								0			
ExclusiveRT:			Include					Include					Include								Include			
% RT Prtct:			0					0					0								0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx		xxxx		xxxx	xxxx		xxxx		xxxx	xxxx		xxxx		xxxx			1	xxxx		xxxx		
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	xxxx		1.00		xxxx	xxxx	xxxxx		xxxx		1.00		1.00		1.00		1.00	xxxxx					
Hev Veh Adj:	0.98	xxxx		0.98		xxxx	xxxx	xxxxx		xxxx		0.98		0.98		0.98		0.98	xxxxx					
Grade Adj:	1.00	xxxx		1.00		xxxx	xxxx	xxxxx		xxxx		1.00		1.00		1.00		1.00	xxxxx					
Parking Adj:	xxxx	xxxx		1.00		xxxx	xxxx	xxxxx		xxxx		1.00		1.00		xxxx		1.00	xxxxx					
Bus Stp Adj:	xxxx	xxxx		1.00		xxxx	xxxx	xxxxx		xxxx		1.00		1.00		xxxx		1.00	xxxxx					
Area Adj:	1.00	xxxx		1.00		xxxx	xxxx	xxxxx		xxxx		1.00		1.00		1.00		1.00	xxxxx					
RT Adj:	xxxx	xxxx		0.85		xxxx	xxxx	xxxxx		xxxx		0.98		0.98		xxxx		xxxx	xxxxx					
LT Adj:	0.95	xxxx		xxxxx		xxxx	xxxx	xxxxx		xxxx		xxxx		xxxxx		0.95		xxxx	xxxxx					
PedBike Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00	1.00		1.00			
HCM Sat Adj:	0.93	1.00		0.83		1.00	1.00		1.00		0.96	0.96		0.93		0.98		1.00						
Usr Sat Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00						
MLF Sat Adj:	1.00	1.00		1.00		1.00	1.00		1.00		0.95	0.95		1.00		0.95		1.00						
Fnl Sat Adj:	0.93	1.00		0.83		1.00	1.00		1.00		0.92	0.92		0.93		0.93		1.00						
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	0.00		1.00		0.00	0.00		0.00		1.00	1.00		1.00		1.00		0.00						

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #45 LtCol Mark Taylor & Ham Ln (S)

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.12	0.00	0.12	0.00	0.00	0.00	0.00	0.63	0.63	0.16	0.79	0.00
ArrivalType:		4			4			4			4	
ProgFactor:	0.96	1.00	0.96	1.00	1.00	1.00	1.00	0.44	0.44	0.94	0.00	1.00
Q1:	0.6	0.0	0.7	0.0	0.0	0.0	0.0	0.9	0.9	1.0	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.84	0.84	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.42	0.42	0.00
EarlyArrAdj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.80	0.80	0.15	0.39	0.00
Q2:	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0
HCM2KQueue:	0.7	0.0	0.9	0.0	0.0	0.0	0.0	1.1	1.1	1.1	0.0	0.0
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	0.8	0.0	1.1	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.1	0.0
85th%Factor:	1.59	1.60	1.59	1.60	1.60	1.60	1.60	1.59	1.59	1.59	1.60	1.60
HCM2k85thQ:	1.1	0.0	1.4	0.0	0.0	0.0	0.0	1.7	1.7	1.7	0.1	0.0
90th%Factor:	1.79	1.80	1.78	1.80	1.80	1.80	1.80	1.78	1.78	1.78	1.80	1.80
HCM2k90thQ:	1.3	0.0	1.6	0.0	0.0	0.0	0.0	1.9	1.9	1.9	0.1	0.0
95th%Factor:	2.08	2.10	2.07	2.10	2.10	2.10	2.10	2.06	2.06	2.07	2.10	2.10
HCM2k95thQ:	1.5	0.0	1.9	0.0	0.0	0.0	0.0	2.2	2.2	2.2	0.1	0.0
98th%Factor:	2.65	2.70	2.63	2.70	2.70	2.70	2.70	2.62	2.62	2.62	2.70	2.70
HCM2k98thQ:	1.9	0.0	2.4	0.0	0.0	0.0	0.0	2.8	2.8	2.8	0.1	0.0

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #51 Eight Mile & Commercial DW #1

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[11.4]

Street Name:	Commercial Site Driveway #1						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	0	4	0	1	0	0	4	0	0
Volume Module:	AM Pk Hr																				
Base Vol:	0	0	0	0	0	0	0	1507	0	0	1517	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	1507	0	0	1517	0
Added Vol:	0	0	0	0	0	0	0	104	5	0	192	0
Pass-By Vol:	0	0	2	0	0	0	0	-3	3	0	0	0
Initial Fut:	0	0	2	0	0	0	0	1608	8	0	1709	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	2	0	0	0	0	1748	9	0	1858	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	2	0	0	0	0	1748	9	0	1858	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	437	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	567	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	567	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.3	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	11.4	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	11.4			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

```
Intersection #51 Eight Mile & Commercial DW #1
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                                         #17              #22
Dist(miles):                                        0.250            0.250
Speed (mph):                                         1.00             1.00
SignalIndex:                                        #8               #53
Cycle Time:                                           100 secs         100 secs
InitVolume:                                       149  1357        102  1607
Saturation:                                      3432  4875       1769  6778
ArrivalType:                                        4     4          4     4
G/C:                                             0.13  0.35       0.15  0.76
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                                              0.167 0.463      0.202 1.011
gq1:                                             3.62 14.96       4.60 -0.27
gq2:                                             0.22  8.83       0.38 -0.12
gq:                                              3.84 23.79       4.99 -0.39
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                                              0.350            0.350
beta:                                               0.741            0.741
ta (secs):                                        900.000          900.000
F:                                                  0.004            0.004
f:                                              1.000 1.000      1.000 1.000
vcmax:                                             56   471         37   -11
vcg:                                               61   532         42   588
vcmin:                                           3000  3000       3000  3000
tp:                                               0.0   0.0        0.0   0.0
p:                                                  0.000            0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:                                       0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:2212  3605   437 2295  3614   464    0 xxxxx xxxxx    0 xxxxx xxxxx
AdjCnflVol: 2212  3605   437 2295  3614   464    0 xxxxx xxxxx    0 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
ConflictVol:2212  3605   437 2295  3614   464    0 xxxxx xxxxx    0 xxxxx xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap:   37     5   567   21     5   545 1622 xxxxx xxxxx 1622 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
Potent Cap.:  37     5   567   21     5   545 1622 xxxxx xxxxx 1622 xxxxx xxxxx
```


Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

```
Intersection #52 Eight Mile & Commercial DW #2
Average Delay (sec/veh):      0.0       Worst Case Level Of Service: B[ 11.5]
Street Name:   Commercial Site Driveway #2             Eight Mile Road
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  0    0  0  3  1  0    0  0  4  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:AM Pk Hr
Base Vol:       0    0     0     0    0     0     0 1507     0     0 1517     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0     0    0     0     0 1507     0     0 1517     0
Added Vol:      0    0     5     0    0     0     0   99     5     0  192     0
Pass-By Vol:    0    0     2     0    0     0     0   -3     3     0    0     0
Initial Fut:    0    0     7     0    0     0     0 1603     8     0 1709     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0     8     0    0     0     0 1742     9     0 1858     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     8     0    0     0     0 1742     9     0 1858     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   440  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx   565  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx   565  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.01  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   1.0  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx  11.5 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     B     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      11.5           xxxxxx            xxxxxx            xxxxxx
ApproachLOS:         B                 *                 *                 *
```

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #52 Eight Mile & Commercial DW #2

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:							#17			#22		
Dist(miles):							0.250			0.250		
Speed (mph):							1.00			1.00		
SignalIndex:							#8			#53		
Cycle Time:							100 secs			100 secs		
InitVolume:				149	1357				102	1607		
Saturation:				3432	4875				1769	6778		
ArrivalType:				4	4				4	4		
G/C:				0.13	0.35				0.15	0.76		
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:				0.167	0.463				0.202	1.011		
gq1:				3.62	14.96				4.60	-0.27		
gq2:				0.22	8.83				0.38	-0.12		
gq:				3.84	23.79				4.99	-0.39		
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:							0.350			0.350		
beta:							0.741			0.741		
ta (secs):							900.000			900.000		
F:							0.004			0.004		
f:				1.000	1.000				1.000	1.000		
vcmax:				56	471				37	-11		
vcg:				61	532				42	588		
vcmin:				3000	3000				3000	3000		
tp:				0.0	0.0				0.0	0.0		
p:							0.000			0.000		
*** Computation 3: Platoon Event Periods												
pdom/psubo:							0.000/0.000/Unconstrained					
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	2211	3604	440	2293	3609	464	0	xxxxx	xxxxx	0	xxxxx	xxxxx
AdjCnflVol:	2211	3604	440	2293	3609	464	0	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
ConflictVol:	2211	3604	440	2293	3609	464	0	xxxxx	xxxxx	0	xxxxx	xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	37	5	565	21	5	545	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
Potent Cap.:	37	5	565	21	5	545	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #53 Eight Mile Road & Road C

Cycle (sec):	100	Critical Vol./Cap.(X):	0.414
Loss Time (sec):	9	Average Delay (sec/veh):	9.8
Optimal Cycle:	30	Level Of Service:	A

Street Name:	Road C						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0
Volume Module:	AM Pk Hr											
Base Vol:	0	0	0	0	0	0	0	1507	0	0	1517	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	1507	0	0	1517	0
Added Vol:	102	0	78	0	0	0	0	54	49	104	90	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	102	0	78	0	0	0	0	1561	49	104	1607	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	111	0	85	0	0	0	0	1697	53	113	1747	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	111	0	85	0	0	0	0	1697	53	113	1747	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	111	0	85	0	0	0	0	1697	53	113	1747	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.89	0.83	0.93	0.89	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	4.00	1.00	1.00	4.00	0.00
Final Sat.:	1769	0	1583	0	0	0	0	6778	1583	1769	6778	0
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.05	0.00	0.00	0.00	0.00	0.25	0.03	0.06	0.26	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.15	0.00	0.15	0.00	0.00	0.00	0.00	0.60	0.60	0.15	0.76	0.00
Volume/Cap:	0.41	0.00	0.35	0.00	0.00	0.00	0.00	0.41	0.06	0.41	0.34	0.00
Delay/Veh:	39.5	0.0	39.0	0.0	0.0	0.0	0.0	10.5	8.1	39.2	4.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.5	0.0	39.0	0.0	0.0	0.0	0.0	10.5	8.1	39.2	4.0	0.0
LOS by Move:	D	A	D	A	A	A	A	B	A	D	A	A
HCM2k95thQ:	168	0	129	0	0	0	0	197	17	170	27	0

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #53 Eight Mile Road & Road C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0	1	0	4	0	0
Lane Group:	L	xxxx		R	xxxx	xxxx	xxxx	xxxx	T		R		L		T	xxxx
#LnsInGrps:	1	0		1	0	0	0	0	4		1		1		4	0
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12				
CrsswalkWid:	8			8			8			8						
% Hev Veh:	2			2			2			2						
Grade:	0%			0%			0%			0%						
Parking/Hr:	No			No			No			No						
Bus Stp/Hr:	0			0			0			0						
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0			0			0			0						
ExclusiveRT:	Include			Include			Include			Include						
% RT Prtct:	0			0			0			0						
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx				1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	1.00	1.00	1.00	1.00	xxxxx				
Hev Veh Adj:	0.98	xxxx	0.98	xxxx	xxxx	xxxxx	xxxx	0.98	0.98	0.98	0.98	xxxxx				
Grade Adj:	1.00	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	1.00	1.00	1.00	1.00	xxxxx				
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	1.00	xxxxx				
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	1.00	xxxxx				
Area Adj:	1.00	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	1.00	1.00	1.00	1.00	xxxxx				
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	xxxxx	xxxx	xxxx	0.85	xxxx	xxxx	xxxxx				
LT Adj:	0.95	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.95	xxxx	xxxxx				
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
HCM Sat Adj:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.98	0.83	0.93	0.98	1.00				
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00				
Fnl Sat Adj:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.89	0.83	0.93	0.89	1.00				
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00				

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #53 Eight Mile Road & Road C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.15	0.00	0.15	0.00	0.00	0.00	0.00	0.60	0.60	0.15	0.76	0.00				
ArrivalType:	4				4				4				4			
ProgFactor:	0.96	1.00	0.96	1.00	1.00	1.00	1.00	0.55	0.50	0.96	0.00	1.00				
Q1:	2.7	0.0	2.0	0.0	0.0	0.0	0.0	3.8	0.3	2.7	0.0	0.0				
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.87	0.00	0.00	0.00				
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.37	0.00	0.00	0.00				
EarlyArrAdj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.29	0.26	1.00	1.00	0.00				
Q2:	0.7	0.0	0.5	0.0	0.0	0.0	0.0	0.2	0.0	0.7	0.5	0.0				
HCM2KQueue:	3.4	0.0	2.6	0.0	0.0	0.0	0.0	4.0	0.3	3.4	0.5	0.0				
70th%Factor:	1.19	1.20	1.19	1.20	1.20	1.20	1.20	1.19	1.20	1.19	1.20	1.20				
HCM2k70thQ:	4.0	0.0	3.1	0.0	0.0	0.0	0.0	4.7	0.4	4.1	0.6	0.0				
85th%Factor:	1.57	1.60	1.58	1.60	1.60	1.60	1.60	1.56	1.60	1.57	1.59	1.60				
HCM2k85thQ:	5.3	0.0	4.0	0.0	0.0	0.0	0.0	6.2	0.5	5.3	0.8	0.0				
90th%Factor:	1.74	1.80	1.75	1.80	1.80	1.80	1.80	1.73	1.79	1.74	1.79	1.80				
HCM2k90thQ:	5.9	0.0	4.5	0.0	0.0	0.0	0.0	6.9	0.6	5.9	0.9	0.0				
95th%Factor:	2.00	2.10	2.02	2.10	2.10	2.10	2.10	1.98	2.09	2.00	2.08	2.10				
HCM2k95thQ:	6.7	0.0	5.2	0.0	0.0	0.0	0.0	7.9	0.7	6.8	1.1	0.0				
98th%Factor:	2.47	2.70	2.52	2.70	2.70	2.70	2.70	2.44	2.68	2.47	2.66	2.70				
HCM2k98thQ:	8.3	0.0	6.4	0.0	0.0	0.0	0.0	9.7	0.8	8.4	1.4	0.0				

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #54 West Lane & Commercial DW #3

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[10.2]

Street Name:	West Lane								Commercial Site Driveway #3							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	3	1	0	0	0	2	0	0	0	0	0	0	0	1
Volume Module:AM Pk Hr																
Base Vol:	0	945	0	0	1468	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	945	0	0	1468	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	117	7	0	95	0	0	0	0	0	0	0	0	0	0	4
Pass-By Vol:	0	-3	3	0	0	0	0	0	0	0	0	0	0	0	0	2
Initial Fut:	0	1059	10	0	1563	0	0	0	0	0	0	0	0	0	0	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	1151	11	0	1699	0	0	0	0	0	0	0	0	0	0	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	1151	11	0	1699	0	0	0	0	0	0	0	0	0	0	7
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9				
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3				
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	293				
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	703				
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	703				
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01				
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.7				
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	10.2				
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	B				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*				
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			10.2						
ApproachLOS:	*			*			*			B						

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #54 West Lane & Commercial DW #3

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HevVeh:	2%				2%				2%				2%			
Grade:	0%				0%				0%				0%			
Peds/Hour:	0				0				0				0			
Pedestrian Walk Speed: 4.00 feet/sec																
LaneWidth:	12 feet				12 feet				12 feet				12 feet			
Time Period: 0.25 hour																
Upstream Signals:																
Link Index:	#99															
Dist(miles):	0.250															
Speed (mph):	1.00															
SignalIndex:	#8															
Cycle Time:	100 secs															
InitVolume:	220	837														
Saturation:	3432	3538														
ArrivalType:	4	4														
G/C:	0.07	0.29														
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection																
P:	0.095	0.381														
gq1:	5.80	14.64														
gq2:	0.54	6.74														
gq:	6.34	21.38														
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons																
alpha:	0.400															
beta:	0.714															
ta (secs):	900.000															
F:	0.004															
f:	1.000	1.000														
vcmax:	83	282														
vcg:	84	305														
vcmin:	2000	2000														
tp:	0.0	0.0														
p:	0.000															
*** Computation 3: Platoon Event Periods																
pdom/psubo:	0.000/0.000/Unconstrained															
*** Computation 4: Conflicting Flows During Each Unblocked Period																
InitCnflVol:	0	xxxxx	xxxxx	0	xxxxx	xxxxx	1987	2861	849	2006	2855	293				
AdjCnflVol:	0	xxxxx	xxxxx	0	xxxxx	xxxxx	1987	2861	849	2006	2855	293				
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000				
ConflictVol:	0	xxxxx	xxxxx	0	xxxxx	xxxxx	1987	2861	849	2006	2855	293				
*** Computation 5: Capacity for Subject Movement During Unblocked Period																
InitPotCap:	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx	36	17	304	52	17	703				
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000				
Potent Cap.:	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx	36	17	304	52	17	703				

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #55 West Lane & Commercial DW #4

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[10.1]

Street Name:	West Lane								Commercial Site Driveway #4							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	1
Volume Module:AM Pk Hr																
Base Vol:	0	945	0	0	1468	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	945	0	0	1468	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	122	7	0	95	0	0	0	0	0	0	0	0	0	0	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1067	7	0	1563	0	0	0	0	0	0	0	0	0	0	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	1160	8	0	1699	0	0	0	0	0	0	0	0	0	0	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	1160	8	0	1699	0	0	0	0	0	0	0	0	0	0	1

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3

Capacity Module:

Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	294
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	703
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	703
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.1
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	10.1
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	B
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			10.1		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #55 West Lane & Commercial DW #4

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			12 feet			12 feet			12 feet	

Time Period: 0.25 hour

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #56 West Lane & Road A

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[10.8]

Street Name:	West Lane				Road A			
Approach:	North Bound		South Bound		East Bound		West Bound	
Movement:	L - T - R		L - T - R		L - T - R		L - T - R	
Control:	Uncontrolled		Uncontrolled		Stop Sign		Stop Sign	
Rights:	Include		Include		Include		Include	
Lanes:	0 0 3 1 0		0 0 4 0 0		0 0 0 0 0		0 0 0 0 1	
Volume Module:AM Pk Hr								
Base Vol:	0 945	0	0 1468	0	0	0	0	0	0
Growth Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00
Initial Bse:	0 945	0	0 1468	0	0	0	0	0	0
Added Vol:	0 56	50	0 95	0	0	0	0	0	73
PasserByVol:	0 0	0	0 0	0	0	0	0	0	0
Initial Fut:	0 1001	50	0 1563	0	0	0	0	0	73
User Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00
PHF Adj:	0.92 0.92	0.92	0.92 0.92	0.92	0.92 0.92	0.92	0.92 0.92	0.92
PHF Volume:	0 1088	54	0 1699	0	0	0	0	0	79
Reduct Vol:	0 0	0	0 0	0	0	0	0	0	0
FinalVolume:	0 1088	54	0 1699	0	0	0	0	0	79
Critical Gap Module:								
Critical Gp:	xxxxx xxxx	xxxxx	xxxxx xxxx	xxxxx	xxxxx xxxx	xxxxx	xxxxx xxxx	6.9
FollowUpTim:	xxxxx xxxx	xxxxx	xxxxx xxxx	xxxxx	xxxxx xxxx	xxxxx	xxxxx xxxx	3.3
Capacity Module:								
Cnflict Vol:	xxxx xxxx	xxxxx	xxxx xxxx	xxxxx	xxxx xxxx	xxxxx	xxxx xxxx	299
Potent Cap.:	xxxx xxxx	xxxxx	xxxx xxxx	xxxxx	xxxx xxxx	xxxxx	xxxx xxxx	697
Move Cap.:	xxxx xxxx	xxxxx	xxxx xxxx	xxxxx	xxxx xxxx	xxxxx	xxxx xxxx	697
Volume/Cap:	xxxx xxxx	xxxx	xxxx xxxx	xxxx	xxxx xxxx	xxxx	xxxx xxxx	0.11
Level Of Service Module:								
2Way95thQ:	xxxx xxxx	xxxxx	xxxx xxxx	xxxxx	xxxx xxxx	xxxxx	xxxx xxxx	9.6
Control Del:	xxxxx xxxx	xxxxx	xxxxx xxxx	xxxxx	xxxxx xxxx	xxxxx	xxxxx xxxx	10.8
LOS by Move:	* *	*	* *	*	* *	*	* *	B
Movement:	LT - LTR - RT		LT - LTR - RT		LT - LTR - RT		LT - LTR - RT	
Shared Cap.:	xxxx xxxx	xxxxx	xxxx xxxx	xxxxx	xxxx xxxx	xxxxx	xxxx xxxx	xxxxx
SharedQueue:	xxxxx xxxx	xxxxx	xxxxx xxxx	xxxxx	xxxxx xxxx	xxxxx	xxxxx xxxx	xxxxx
Shrd ConDel:	xxxxx xxxx	xxxxx	xxxxx xxxx	xxxxx	xxxxx xxxx	xxxxx	xxxxx xxxx	xxxxx
Shared LOS:	* *	*	* *	*	* *	*	* *	*
ApproachDel:	xxxxxx		xxxxxx		xxxxxx		10.8	
ApproachLOS:	*		*		*		B	

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #56 West Lane & Road A

Approach:	North Bound		South Bound		East Bound		West Bound	
Movement:	L - T - R		L - T - R		L - T - R		L - T - R	
HevVeh:	2%		2%		2%		2%	
Grade:	0%		0%		0%		0%	
Peds/Hour:	0		0		0		0	
Pedestrian Walk Speed: 4.00 feet/sec								
LaneWidth:	12 feet		12 feet		12 feet		12 feet	
Time Period: 0.25 hour								
Upstream Signals:								
Link Index:	#106		#99					
Dist(miles):	0.250		0.250					
Speed (mph):	1.00		1.00					
SignalIndex:	#16		#8					
Cycle Time:	100 secs		100 secs					
InitVolume:	141 862		220 837					
Saturation:	1769 6154		3432 3538					
ArrivalType:	4 4		4 4					
G/C:	0.17 0.36		0.07 0.29					
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection								
P:	0.222 0.486		0.095 0.381					
gq1:	6.20 7.20		5.80 14.64					
gq2:	0.74 1.65		0.54 6.74					
gq:	6.94 8.86		6.34 21.38					
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons								
alpha:	0.350		0.350					
beta:	0.741		0.741					
ta (secs):	900.000		900.000					
F:	0.004		0.004					
f:	1.000 1.000		1.000 1.000					
vcmax:	52 229		92 309					
vcg:	57 331		93 334					
vcmin:	3000 3000		3000 3000					
tp:	0.0 0.0		0.0 0.0					
p:	0.000		0.000					
*** Computation 3: Platoon Event Periods								
pdom/psubo:	0.000/0.000/Unconstrained							
*** Computation 4: Conflicting Flows During Each Unblocked Period								
InitCnflVol:	0 xxxxx xxxxx		0 xxxxx xxxxx	1971	2841	425	1540	2814	299
AdjCnflVol:	0 xxxxx xxxxx		0 xxxxx xxxxx	1971	2841	425	1540	2814	299
UpstreamAdj:	1.00 x.xxx x.xxx		1.00 x.xxx x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	0 xxxxx xxxxx		0 xxxxx xxxxx	1971	2841	425	1540	2814	299
*** Computation 5: Capacity for Subject Movement During Unblocked Period								
InitPotCap:	1622 xxxxx xxxxx		1622 xxxxx xxxxx	37	17	578	106	18	697
UpstreamAdj:	1.00 x.xxx x.xxx		1.00 x.xxx x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
Potent Cap.:	1622 xxxxx xxxxx		1622 xxxxx xxxxx	37	17	578	106	18	697

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #57 Eight Mile & Hi Dens Res DW #1

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[12.5]

Street Name:	High Density Resid Driveway #1									Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Volume Module:AM Peak Hour																				
Base Vol:	0	0	0	0	0	0	0	0	0	1507	0	0	1517	0						
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Initial Bse:	0	0	0	0	0	0	0	0	0	1507	0	0	1517	0						
Added Vol:	0	0	68	0	0	0	0	0	0	128	17	0	136	0						
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
Initial Fut:	0	0	68	0	0	0	0	0	0	1635	17	0	1653	0						
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92						
PHF Volume:	0	0	74	0	0	0	0	0	0	1777	18	0	1797	0						
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
FinalVolume:	0	0	74	0	0	0	0	0	0	1777	18	0	1797	0						
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	454	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	554	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	554	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	0.13	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	11.5	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	12.5	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*								
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT										
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	12.5			xxxxxx			xxxxxx			xxxxxx										
ApproachLOS:	B			*			*			*										

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #57 Eight Mile & Hi Dens Res DW #1

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HevVeh:	2%					2%					2%					2%				
Grade:	0%					0%					0%					0%				
Peds/Hour:	0					0					0					0				
Pedestrian Walk Speed: 4.00 feet/sec																				
LaneWidth:	12 feet					12 feet					12 feet					12 feet				

Time Period: 0.25 hour

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #58 Eight Mile & Hi Dens Res DW #2

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[12.7]

Street Name:	High Density Resid Driveway #2									Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Volume Module:	AM Peak Hour																			
Base Vol:	0	0	0	0	0	0	0	0	0	1507	0	0	1517	0						
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Initial Bse:	0	0	0	0	0	0	0	0	0	1507	0	0	1517	0						
Added Vol:	0	0	68	0	0	0	0	0	0	179	17	0	136	0						
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
Initial Fut:	0	0	68	0	0	0	0	0	0	1686	17	0	1653	0						
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92						
PHF Volume:	0	0	74	0	0	0	0	0	0	1833	18	0	1797	0						
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
FinalVolume:	0	0	74	0	0	0	0	0	0	1833	18	0	1797	0						
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	467	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	542	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	542	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	0.14	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	11.7	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	12.7	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*								
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT										
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	12.7			xxxxxx			xxxxxx			xxxxxx										
ApproachLOS:	B			*			*			*										

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #58 Eight Mile & Hi Dens Res DW #2

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HevVeh:	2%					2%					2%					2%				
Grade:	0%					0%					0%					0%				
Peds/Hour:	0					0					0					0				
Pedestrian Walk Speed: 4.00 feet/sec																				
LaneWidth:	12 feet					12 feet					12 feet					12 feet				
Time Period: 0.25 hour																				

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #60 Eight Mile & Industrial DW #1

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[11.0]

Street Name:	Industrial Site Driveway #2						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	1	0 0	0 0	0	0 0	4 1	0	0 0	4 0	0
Volume Module:AM Pk Hr												
Base Vol:	0	0	0	0	0	0	0	1605	0	0	1300	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	1605	0	0	1300	0
Added Vol:	0	0	1	0	0	0	0	247	2	0	141	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	1	0	0	0	0	1852	2	0	1441	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	1	0	0	0	0	2013	2	0	1566	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	1	0	0	0	0	2013	2	0	1566	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	404	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	596	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	596	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.1	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	11.0	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	11.0			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #60 Eight Mile & Industrial DW #1

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
HevVeh:			2%			2%			2%			2%
Grade:			0%			0%			0%			0%
Peds/Hour:			0			0			0			0
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:			12 feet			12 feet			12 feet			12 feet
Time Period: 0.25 hour												

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #61 Eight Mile & Industrial DW #2

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[11.0]

Street Name:	Industrial Site Driveway #2						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	1	0 0	0 0	0	0 0	4 1	0	0 0	4 0	0
Volume Module:AM Pk Hr												
Base Vol:	0	0	0	0	0	0	0	1605	0	0	1300	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	1605	0	0	1300	0
Added Vol:	0	0	1	0	0	0	0	246	2	0	141	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	1	0	0	0	0	1851	2	0	1441	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	1	0	0	0	0	2012	2	0	1566	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	1	0	0	0	0	2012	2	0	1566	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	403	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	597	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	597	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.1	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	11.0	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	11.0			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #61 Eight Mile & Industrial DW #2

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
HevVeh:			2%			2%			2%			2%
Grade:			0%			0%			0%			0%
Peds/Hour:			0			0			0			0
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:			12 feet			12 feet			12 feet			12 feet
Time Period: 0.25 hour												

Cumul With Bridge Alternative AM Pk Hr

Future Queue Length Report (feet)

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
#3	[HCM2k95thQ]:	225	399	235	706	392	254	215	471	107	201	639	639
#4	[HCM2k95thQ]:	356	235	272	337	422	178	122	454	195	312	466	466
#5	[HCM2k95thQ]:	125	305	485	538	354	108	189	659	104	490	634	634
#6	[HCM2k95thQ]:	72	453	649	1204	260	21	118	598	37	1034	242	427
#7	[HCM2k95thQ]:	131	131	131	163	163	163	76	158	158	101	120	120
#8	[HCM2k95thQ]:	523	229	109	134	759	809	486	780	1008	245	643	643
#9	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	83.1	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#10	[HCM2k95thQ]:	81	0	180	272	0	10	157	344	344	89	411	411
#11	[HCM2k95thQ]:	310	55	40	58	133	412	250	337	509	56	396	16
#12	[HCM2k95thQ]:	2	202	202	467	8	8	9	517	1	118	532	532
#13	[HCM2k95thQ]:	18	17	17	23	22	22	9	11	0	23	11	11
#16	[HCM2k95thQ]:	289	277	277	130	415	111	234	200	259	363	275	275
#17	[HCM2k95thQ]:	67	132	298	671	172	54	118	746	40	593	845	845
#18	[HCM2k95thQ]:	289	248	128	124	527	97	90	155	403	254	137	91
#19	[HCM2k95thQ]:	225	173	136	165	298	124	151	295	209	273	207	66
#22	[HCM2k95thQ]:	6	52	98	252	40	40	28	202	202	126	226	230
#24	[HCM2k95thQ]:	346	187	187	52	712	712	60	435	435	215	46	46
#25	[HCM2k95thQ]:	203	281	281	133	597	597	331	312	312	175	286	286
#26	[HCM2k95thQ]:	144	440	487	498	413	94	228	409	153	395	236	507
#27	[HCM2k95thQ]:	346	197	197	131	300	432	262	574	574	236	620	620
#45	[HCM2k95thQ]:	37	0	46	0	0	0	0	56	56	55	2	0
#51	[2Way95thQ]:	xxxx	xxxx	0.3	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#52	[2Way95thQ]:	xxxx	xxxx	1.0	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#53	[HCM2k95thQ]:	168	0	129	0	0	0	0	197	17	170	27	0
#54	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.7
#55	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.1
#56	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	9.6
#57	[2Way95thQ]:	xxxx	xxxx	11.5	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#58	[2Way95thQ]:	xxxx	xxxx	11.7	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#60	[2Way95thQ]:	xxxx	xxxx	0.1	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#61	[2Way95thQ]:	xxxx	xxxx	0.1	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

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Cumul With Bridge Alternative PM Pk Hr - With Mitigation Measures

Scenario Report

Scenario:	Cumul + Bridge Alt PM
Command:	Cumul + Bridge Alt PM
Volume:	Cumul Bridge Alt PM
Geometry:	Cumul Proj
Impact Fee:	Default Impact Fee
Trip Generation:	PM Pk Hr
Trip Distribution:	Cumul With Bridge PM
Paths:	Cumul Bridge Alt
Routes:	Default Route
Configuration:	Default Configuration

Cumul With Bridge Alternative PM Pk Hr - With Mitigation Measures

Trip Generation Report

Forecast for PM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	750.00	ElemSchStudent	0.07	0.08	53	60	113	7.2
1	Village West	738.00	Tra Vigne SFDU	0.52	0.30	384	221	605	38.7
1	Village West	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	2.63	2.85	0	0	0	0.0
1	Village West	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
1	Village West	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
1	Village West	0.00	GP Alt MFDU	0.41	0.22	0	0	0	0.0
1	Village West	1.00	Tra V Internal	-64.00	-64.00	-64	-64	-128	-8.2
1	Village West	0.00	GP Alt Interna	-76.00	-76.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-106.00	-111.00	0	0	0	0
1	Village West	0.00	Tra Vigne MFDU	0.12	0.48	0	0	0	0.0
	Zone 1 Subtotal					373	217	590	37.8
2	Village East	418.00	Tra Vigne SFDU	0.52	0.30	217	125	342	21.9
2	Village East	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
2	Village East	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
2	Village East	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
	Zone 2 Subtotal					217	125	342	21.9
3	Commercial	101.50	Tra V Comm KSF	2.86	3.10	290	315	605	38.7
3	Commercial	1.00	Tra V Pass-By	-90.00	-94.00	-90	-94	-184	-11.8
	Zone 3 Subtotal					200	221	421	27.0
4	Industrial	21.40	Indust KSF	0.05	0.17	1	4	5	0.3
	Zone 4 Subtotal					1	4	5	0.3
5	Hi Dens Res	340.00	Tra Vigne MFDU	0.12	0.48	41	163	204	13.1
	Zone 5 Subtotal					41	163	204	13.1
TOTAL						832	730	1562	100.0

Cumul With Bridge Alternative PM Pk Hr - With Mitigation Measures

Trip Distribution Report

Percent Of Trips Cumul With Bridge PM

Zone	To Gates 1	2	3	4	5	6	7	8	9	10	11
1	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	2.0
2	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	2.0
3	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	2.0
4	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	2.0
5	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	2.0

Zone	To Gates 12	13	14	15	16	17	19	20	21	22	23
1	5.0	13.0	1.0	2.0	3.0	1.0	20.0	3.0	5.0	3.0	14.0
2	5.0	13.0	1.0	2.0	3.0	1.0	20.0	3.0	5.0	3.0	14.0
3	5.0	13.0	1.0	2.0	3.0	1.0	20.0	3.0	5.0	3.0	14.0
4	5.0	13.0	1.0	2.0	3.0	1.0	20.0	3.0	5.0	3.0	14.0
5	5.0	13.0	1.0	2.0	3.0	1.0	20.0	3.0	5.0	3.0	14.0

Cumul With Bridge Alternative PM Pk Hr - With Mitigation Measures

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in D/V
# 5 Eight Mile & Lower Sacto Rd	E	63.9	1.082	E	73.2	1.131	+ 9.328
# 8 Eight Mile Rd & West Ln	E	67.7	1.106	E	78.3	1.132	+10.582

Cumul With Bridge Alternative PM Pk Hr - With Mitigation Measures

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]

Cumul With Bridge Alternative PM Pk Hr - With Mitigation Measures

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.131
Loss Time (sec):	12	Average Delay (sec/veh):	73.2
Optimal Cycle:	180	Level Of Service:	E

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	4 0	1	2 0	4 0	1
Volume Module:	PM Pk Hr											
Base Vol:	168	781	414	626	502	107	208	1903	88	520	1917	517
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	168	781	414	626	502	107	208	1903	88	520	1917	517
Added Vol:	0	0	25	17	0	0	0	83	0	22	73	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	168	781	439	643	502	107	208	1986	88	542	1990	532
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	183	849	477	699	546	116	226	2159	96	589	2163	578
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	183	849	477	699	546	116	226	2159	96	589	2163	578
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	183	849	477	699	546	116	226	2159	96	589	2163	578
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.05	0.24	0.30	0.20	0.15	0.07	0.07	0.32	0.06	0.17	0.32	0.37
Crit Moves:			****	****				****		****		
Green/Cycle:	0.11	0.27	0.27	0.18	0.33	0.33	0.07	0.28	0.28	0.15	0.37	0.37
Volume/Cap:	0.46	0.90	1.13	1.13	0.46	0.22	1.00	1.13	0.21	1.13	0.87	1.00
Delay/Veh:	42.3	46.9	121.3	119.0	26.7	24.3	104.9	102	27.7	123.2	33.0	67.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.3	46.9	121.3	119.0	26.7	24.3	104.9	102	27.7	123.2	33.0	67.6
LOS by Move:	D	D	F	F	C	C	F	F	C	F	C	E
HCM2k95thQ:	160	727	1037	842	309	116	334	1224	106	743	825	1006

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr - With Mitigation Measures

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	0	1	2	0 2	0	1	2	0 4	0	1	2	0 4	0	1
Lane Group:	L	T		R	L	T		R	L	T		R	L	T		R
#LnsInGrps:	2	2		1	2	2		1	2	4		1	2	4		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative PM Pk Hr - With Mitigation Measures

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.11	0.27	0.27		0.18	0.33	0.33		0.07	0.28	0.28		0.15	0.37	0.37	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.98	1.00		1.00	0.89	0.86		1.00	1.00	0.89		1.00	0.96	1.00	
Q1:		2.4	11.8	13.3	10.0	5.6	2.0		3.2	16.5	1.8		8.4	14.7	16.0	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:		0.8	5.0	11.9	9.8	0.8	0.3		3.8	13.9	0.3		8.7	4.7	8.3	
HCM2KQueue:		3.2	16.8	25.2	19.8	6.4	2.3		7.0	30.4	2.1		17.2	19.4	24.3	
70th%Factor:	1.19	1.17	1.15		1.16	1.19	1.19		1.18	1.15	1.19		1.17	1.16	1.15	
HCM2k70thQ:		3.8	19.5	29.0	23.0	7.6	2.7		8.3	34.9	2.5		20.0	22.5	28.1	
85th%Factor:	1.57	1.47	1.43		1.45	1.54	1.58		1.54	1.41	1.58		1.47	1.46	1.43	
HCM2k85thQ:		5.0	24.7	36.0	28.8	9.9	3.6		10.8	42.8	3.3		25.2	28.2	34.8	
90th%Factor:	1.74	1.57	1.51		1.55	1.69	1.76		1.68	1.49	1.76		1.57	1.55	1.52	
HCM2k90thQ:		5.6	26.4	38.1	30.7	10.9	4.0		11.8	45.2	3.7		27.0	30.0	36.9	
95th%Factor:	2.00	1.74	1.65		1.70	1.92	2.03		1.91	1.61	2.03		1.73	1.70	1.66	
HCM2k95thQ:		6.4	29.1	41.5	33.7	12.4	4.6		13.4	49.0	4.2		29.7	33.0	40.2	
98th%Factor:	2.48	1.98	1.84		1.92	2.31	2.54		2.28	1.80	2.55		1.97	1.93	1.85	
HCM2k98thQ:		7.9	33.1	46.4	38.0	14.9	5.8		16.0	54.6	5.3		33.8	37.3	45.1	

Cumul With Bridge Alternative PM Pk Hr - With Mitigation Measures

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	1.132
Loss Time (sec):	12	Average Delay (sec/veh):	78.3
Optimal Cycle:	180	Level Of Service:	E

Street Name:	West Lane								Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	3	0	2	0 1	2	0	2	0 1	2	0	3	1 0	2	0	3	1 0
Volume Module:	PM Pk Hr															
Base Vol:	801	837	121		151	760	422		693	1737	505		179	1720	104	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	801	837	121		151	760	422		693	1737	505		179	1720	104	
Added Vol:	35	30	52		39	7	0		0	97	28		82	74	20	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	836	867	173		190	767	422		693	1834	533		261	1794	124	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	909	942	188		207	834	459		753	1993	579		284	1950	135	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	909	942	188		207	834	459		753	1993	579		284	1950	135	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	909	942	188		207	834	459		753	1993	579		284	1950	135	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.86	0.86		0.90	0.88	0.88	
Lanes:	3.00	2.00	1.00		2.00	2.00	1.00		2.00	3.10	0.90		2.00	3.74	0.26	
Final Sat.:	5147	3538	1583		3432	3538	1583		3432	5073	1474		3432	6276	434	
Capacity Analysis Module:																
Vol/Sat:	0.18	0.27	0.12		0.06	0.24	0.29		0.22	0.39	0.39		0.08	0.31	0.31	
Crit Moves:	****						****		****					****		
Green/Cycle:	0.16	0.34	0.34		0.08	0.26	0.26		0.19	0.39	0.39		0.08	0.27	0.27	
Volume/Cap:	1.13	0.79	0.35		0.79	0.92	1.13		1.13	1.02	1.02		1.02	1.13	1.13	
Delay/Veh:	117.1	33.8	25.4		60.7	50.6	123.2		117.7	52.6	52.6		103.9	103	103.3	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	117.1	33.8	25.4		60.7	50.6	123.2		117.7	52.6	52.6		103.9	103	103.3	
LOS by Move:	F	C	C		E	D	F		F	D	D		F	F	F	
HCM2k95thQ:	647	585	179		253	741	1008		891	1201	1201		297	1108	1108	

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr - With Mitigation Measures

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	3	0	2	0 1	2	0	2	0 1	2	0	3	1 0	2	0	3	1 0
Lane Group:	L		T	R	L		T	R	L		RT	RT	L		RT	RT
#LnsInGrps:	3		2	1	2		2	1	2		4	4	2		4	4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.97	0.97		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.95	0.95		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.86	0.86		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative PM Pk Hr - With Mitigation Measures

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.16	0.34	0.34	0.08	0.26	0.26	0.19	0.39	0.39	0.08	0.27	0.27
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.95	0.87	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	8.7	11.8	3.4	2.9	11.7	12.7	10.8	19.6	19.6	4.1	15.9	15.9
UpstreamVC:	0.71	0.71	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.41	0.41
UpstreamAdj:	0.64	0.64	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.91	0.91	0.91
EarlyArrAdj:	0.22	0.36	0.32	1.00	1.00	1.00	1.00	1.00	1.00	0.21	0.45	0.45
Q2:	6.0	1.3	0.2	2.3	5.4	11.6	10.4	10.1	10.1	2.1	11.2	11.2
HCM2KQueue:	14.7	13.1	3.6	5.2	17.1	24.4	21.1	29.7	29.7	6.2	27.1	27.1
70th%Factor:	1.17	1.17	1.19	1.19	1.17	1.15	1.16	1.15	1.15	1.19	1.15	1.15
HCM2k70thQ:	17.1	15.3	4.3	6.2	20.0	28.1	24.5	34.1	34.1	7.3	31.2	31.2
85th%Factor:	1.48	1.49	1.57	1.55	1.47	1.43	1.45	1.41	1.41	1.54	1.42	1.42
HCM2k85thQ:	21.8	19.5	5.6	8.1	25.2	34.9	30.6	42.0	42.0	9.5	38.6	38.6
90th%Factor:	1.59	1.61	1.73	1.71	1.57	1.52	1.54	1.49	1.49	1.69	1.50	1.50
HCM2k90thQ:	23.3	21.0	6.2	8.9	26.9	37.0	32.5	44.3	44.3	10.4	40.8	40.8
95th%Factor:	1.77	1.79	1.99	1.95	1.73	1.65	1.69	1.61	1.61	1.93	1.63	1.63
HCM2k95thQ:	25.9	23.4	7.2	10.1	29.7	40.3	35.6	48.0	48.0	11.9	44.3	44.3
98th%Factor:	2.02	2.07	2.46	2.37	1.97	1.85	1.90	1.80	1.80	2.32	1.82	1.82
HCM2k98thQ:	29.7	27.0	8.9	12.3	33.7	45.2	40.1	53.6	53.6	14.3	49.5	49.5

Cumul With Bridge Alternative PM Pk Hr - With Mitigation Measures

Future Queue Length Report (feet)

Node	Intersection	Northbound L -- T -- R			Southbound L -- T -- R			Eastbound L -- T -- R			Westbound L -- T -- R		
#5	[HCM2k95thQ]:	160	727	1037	842	309	116	334	1224	106	743	825	1006
#8	[HCM2k95thQ]:	647	585	179	253	741	1008	891	1201	1201	297	1108	1108

Cumul With Bridge Alternative PM Pk Hr

Scenario Report

Scenario:	Cumul + Bridge Alt PM
Command:	Cumul + Bridge Alt PM
Volume:	Cumul Bridge Alt PM
Geometry:	Cumul Proj
Impact Fee:	Default Impact Fee
Trip Generation:	PM Pk Hr
Trip Distribution:	Cumul With Bridge PM
Paths:	Cumul Bridge Alt
Routes:	Default Route
Configuration:	Default Configuration

Cumul With Bridge Alternative PM Pk Hr

Trip Generation Report

Forecast for PM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	750.00	ElemSchStudent	0.07	0.08	53	60	113	7.2
1	Village West	738.00	Tra Vigne SFDU	0.52	0.30	384	221	605	38.7
1	Village West	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	2.63	2.85	0	0	0	0.0
1	Village West	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
1	Village West	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
1	Village West	0.00	GP Alt MFDU	0.41	0.22	0	0	0	0.0
1	Village West	1.00	Tra V Internal	-64.00	-64.00	-64	-64	-128	-8.2
1	Village West	0.00	GP Alt Interna	-76.00	-76.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-106.00	-111.00	0	0	0	0
1	Village West	0.00	Tra Vigne MFDU	0.12	0.48	0	0	0	0.0
	Zone 1 Subtotal					373	217	590	37.8
2	Village East	418.00	Tra Vigne SFDU	0.52	0.30	217	125	342	21.9
2	Village East	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
2	Village East	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
2	Village East	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
	Zone 2 Subtotal					217	125	342	21.9
3	Commercial	101.50	Tra V Comm KSF	2.86	3.10	290	315	605	38.7
3	Commercial	1.00	Tra V Pass-By	-90.00	-94.00	-90	-94	-184	-11.8
	Zone 3 Subtotal					200	221	421	27.0
4	Industrial	21.40	Indust KSF	0.05	0.17	1	4	5	0.3
	Zone 4 Subtotal					1	4	5	0.3
5	Hi Dens Res	340.00	Tra Vigne MFDU	0.12	0.48	41	163	204	13.1
	Zone 5 Subtotal					41	163	204	13.1
TOTAL						832	730	1562	100.0

Traffix 8.0.0715 (c) 2008 Dowling Assoc. Licensed to kdANDERSON TRANSP.

Cumul With Bridge Alternative PM Pk Hr

Trip Distribution Report

Percent Of Trips Cumul With Bridge PM

Zone	To Gates 1	2	3	4	5	6	7	8	9	10	11
1	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	2.0
2	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	2.0
3	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	2.0
4	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	2.0
5	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	2.0

Zone	To Gates 12	13	14	15	16	17	19	20	21	22	23
1	5.0	13.0	1.0	2.0	3.0	1.0	20.0	3.0	5.0	3.0	14.0
2	5.0	13.0	1.0	2.0	3.0	1.0	20.0	3.0	5.0	3.0	14.0
3	5.0	13.0	1.0	2.0	3.0	1.0	20.0	3.0	5.0	3.0	14.0
4	5.0	13.0	1.0	2.0	3.0	1.0	20.0	3.0	5.0	3.0	14.0
5	5.0	13.0	1.0	2.0	3.0	1.0	20.0	3.0	5.0	3.0	14.0

Cumul With Bridge Alternative PM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	F	91.5	1.197	F	95.0	1.210	+ 3.509 D/V
# 4 Eight Mile Rd & Davis Rd	D	38.5	0.826	D	39.5	0.851	+ 1.065 D/V
# 5 Eight Mile & Lower Sacto Rd	E	76.9	1.082	F	89.9	1.131	+13.025 D/V
# 6 West Lane & Armstrong Road	F	142.1	1.374	F	144.2	1.374	+ 2.069 D/V
# 7 West Lane & Ham Lane	B	12.6	0.499	B	13.2	0.525	+ 0.690 D/V
# 8 Eight Mile Rd & West Ln	F	92.0	1.203	F	109.1	1.233	+17.125 D/V
# 9 Eight Mile Road & Ham Lane	D	29.2	0.662	F	52.1	0.863	+22.900 D/V
# 10 Eight Mile & Leach Rd/St G	A	9.4	0.561	B	17.6	0.671	+ 8.167 D/V
# 11 Eight Mile & MickeGrove/Holman	C	32.0	0.794	D	36.3	0.882	+ 4.229 D/V
# 12 Eight Mile & SR 99 W Frontage	C	31.1	0.886	C	32.5	0.916	+ 1.403 D/V
# 13 Eight Mile & SR 99 E Frontage	A	4.0	0.239	A	4.0	0.245	-0.056 D/V
# 16 West & L.C.MarkTaylor/Marlette	C	29.2	0.670	C	32.7	0.714	+ 3.480 D/V
# 17 Holman & Lt Col Mark Taylor	E	73.4	1.053	F	95.5	1.175	+22.121 D/V
# 18 Morada Lane & West Lane	C	30.8	0.719	C	31.4	0.746	+ 0.659 D/V
# 19 Morada Lane & Holman Road	C	34.9	0.626	C	35.0	0.638	+ 0.087 D/V
# 22 Morada Ln & SR99 W Frontage Rd	C	24.6	0.651	C	24.4	0.651	-0.144 D/V
# 24 West Ln & West Ln Frontage Rd	C	28.8	0.846	C	29.3	0.873	+ 0.533 D/V
# 25 West Lane & Knickerbocker Dr	C	32.8	0.856	C	33.7	0.884	+ 0.927 D/V
# 26 West Lane & Hammer Lane	F	85.0	1.243	F	93.7	1.249	+ 8.729 D/V
# 27 Hammer Lane & Holman Road	D	51.7	1.029	D	51.7	1.029	-0.038 D/V
# 45 LtCol Mark Taylor & Ham Ln (S)	B	12.5	0.155	B	11.5	0.181	-0.989 D/V
# 51 Eight Mile & Commercial DW #1	A	0.0	0.000	B	13.5	0.074	+13.537 D/V
# 52 Eight Mile & Commercial DW #2	A	0.0	0.000	B	14.8	0.168	+14.814 D/V
# 53 Eight Mile Road & Road C	A	0.6	0.353	B	10.0	0.562	+ 9.398 D/V

Cumul With Bridge Alternative PM Pk Hr

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 54 West Lane & Commercial DW #3	A	0.0	0.000	B	13.3	0.125	+13.296 D/V
# 55 West Lane & Commercial DW #4	A	0.0	0.000	B	12.4	0.017	+12.360 D/V
# 56 West Lane & Road A	A	0.0	0.000	B	13.0	0.070	+12.998 D/V
# 57 Eight Mile & Hi Dens Res DW #1	A	0.0	0.000	C	15.3	0.201	+15.277 D/V
# 58 Eight Mile & Hi Dens Res DW #2	A	0.0	0.000	C	15.6	0.206	+15.604 D/V
# 60 Eight Mile & Industrial DW #1	A	0.0	0.000	B	12.4	0.004	+12.418 D/V
# 61 Eight Mile & Industrial DW #2	A	0.0	0.000	B	12.4	0.004	+12.421 D/V

Cumul With Bridge Alternative PM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 9 Eight Mile Road & Ham Lane	??? / ???	Yes / Yes
# 51 Eight Mile & Commercial DW #1	??? / ???	No / No
# 52 Eight Mile & Commercial DW #2	??? / ???	No / No
# 54 West Lane & Commercial DW #3	??? / ???	No / No
# 55 West Lane & Commercial DW #4	??? / ???	No / No
# 56 West Lane & Road A	??? / ???	No / No
# 57 Eight Mile & Hi Dens Res DW #1	??? / ???	No / No
# 58 Eight Mile & Hi Dens Res DW #2	??? / ???	No / No
# 60 Eight Mile & Industrial DW #1	??? / ???	No / No
# 61 Eight Mile & Industrial DW #2	??? / ???	No / No

Cumul With Bridge Alternative PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #9 Eight Mile Road & Ham Lane

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	0	0	1	0	0	4	0	0	0	0	3	1	0
Initial Vol:	0	0		0		0	0		298		0	2455		0		0	1972		322	
ApproachDel:	xxxxxx					52.1					xxxxxx					xxxxxx				

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=4.3]
   SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=298]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=5047]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul With Bridge Alternative PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #9 Eight Mile Road & Ham Lane

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	0	0	1	0	0	4	0	0	0	0	3	1	0
Initial Vol:	0	0		0		0	0		298		0	2455		0		0	1972		322	

Major Street Volume: 4749
Minor Approach Volume: 298
Minor Approach Volume Threshold: -252 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul With Bridge Alternative PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #51 Eight Mile & Commercial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	0	1	0	0	4	0	0
Initial Vol:	0		0		31	0		0		0	0		2147		51	0		2181		0
ApproachDel:	13.5					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=31]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=4410]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul With Bridge Alternative PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #51 Eight Mile & Commercial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	0	1	0	0	4	0	0
Initial Vol:	0		0		31	0		0		0	0		2147		51	0		2181		0

Major Street Volume: 4379
Minor Approach Volume: 31
Minor Approach Volume Threshold: -224 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul With Bridge Alternative PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #52 Eight Mile & Commercial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Initial Vol:	0		0		68	0		0		0	0		2126		51	0		2181		0
ApproachDel:	14.8					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=68]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=4426]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul With Bridge Alternative PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #52 Eight Mile & Commercial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Initial Vol:	0		0		68	0		0		0	0		2126		51	0		2181		0

Major Street Volume: 4358
Minor Approach Volume: 68
Minor Approach Volume Threshold: -222 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul With Bridge Alternative PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #54 West Lane & Commercial DW #3

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	3	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1821			59	0	1561			0	0		0		0	0		0		57
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					13.3				

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=57]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3498]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul With Bridge Alternative PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #54 West Lane & Commercial DW #3

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	3	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1821			59	0	1561			0	0		0		0	0		0		57

Major Street Volume: 3441
Minor Approach Volume: 57
Minor Approach Volume Threshold: -141 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul With Bridge Alternative PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #55 West Lane & Commercial DW #4

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1871			29	0	1561			0	0		0		0	0		0		8
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					12.4				

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=8]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3469]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul With Bridge Alternative PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #55 West Lane & Commercial DW #4

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1871			29	0	1561			0	0		0		0	0		0		8

Major Street Volume: 3461
Minor Approach Volume: 8
Minor Approach Volume Threshold: -143 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul With Bridge Alternative PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #56 West Lane & Road A

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1869			65	0	1561			0	0		0		0	0		0		31
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					13.0				

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=31]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3526]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul With Bridge Alternative PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #56 West Lane & Road A

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1869			65	0	1561			0	0		0		0	0		0		31

Major Street Volume: 3495
Minor Approach Volume: 31
Minor Approach Volume Threshold: -146 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul With Bridge Alternative PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #57 Eight Mile & Hi Dens Res DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Initial Vol:	0		0		81	0		0		0	0		2200		21	0		2207		0
ApproachDel:	15.3					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=81]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=4509]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul With Bridge Alternative PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #57 Eight Mile & Hi Dens Res DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Initial Vol:	0		0		81	0		0		0	0		2200		21	0		2207		0

Major Street Volume: 4428
Minor Approach Volume: 81
Minor Approach Volume Threshold: -228 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul With Bridge Alternative PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #58 Eight Mile & Hi Dens Res DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Initial Vol:	0		0		81	0		0		0	0		2261		21	0		2207		0
ApproachDel:	15.6					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.4]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=81]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=4570]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul With Bridge Alternative PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #58 Eight Mile & Hi Dens Res DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Initial Vol:	0		0		81	0		0		0	0		2261		21	0		2207		0

Major Street Volume: 4489
Minor Approach Volume: 81
Minor Approach Volume Threshold: -233 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul With Bridge Alternative PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #60 Eight Mile & Industrial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	1	0	0	0	4	0	0
Initial Vol:	0		0		2	0		0		0	0		2473		1	0		1982		0
ApproachDel:	12.4					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=2]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=4458]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul With Bridge Alternative PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #60 Eight Mile & Industrial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	1	0	0	0	4	0	0
Initial Vol:	0		0		2	0		0		0	0		2473		1	0		1982		0

Major Street Volume: 4456
Minor Approach Volume: 2
Minor Approach Volume Threshold: -230 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
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Cumul With Bridge Alternative PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #61 Eight Mile & Industrial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	1	0	0	0	4	0	0
Initial Vol:	0		0		2	0		0		0	0		2474		1	0		1982		0
ApproachDel:	12.4					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=2]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=4459]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul With Bridge Alternative PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #61 Eight Mile & Industrial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	1	0	0	0	4	0	0
Initial Vol:	0		0		2	0		0		0	0		2474		1	0		1982		0

Major Street Volume: 4457
Minor Approach Volume: 2
Minor Approach Volume Threshold: -230 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.210
Loss Time (sec):	12	Average Delay (sec/veh):	95.0
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	PM Pk Hr											
Base Vol:	199	736	198	519	536	220	397	1847	111	270	1911	410
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	199	736	198	519	536	220	397	1847	111	270	1911	410
Added Vol:	0	0	8	8	0	0	0	42	0	7	37	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	199	736	206	527	536	220	397	1889	111	277	1948	417
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	216	800	224	573	583	239	432	2053	121	301	2117	453
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	216	800	224	573	583	239	432	2053	121	301	2117	453
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	216	800	224	573	583	239	432	2053	121	301	2117	453
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	3.29	0.71
Final Sat.:	1769	3538	1583	1769	3538	1583	3432	6778	1583	3432	5437	1164
Capacity Analysis Module:												
Vol/Sat:	0.12	0.23	0.14	0.32	0.16	0.15	0.13	0.30	0.08	0.09	0.39	0.39
Crit Moves:		****		****			****				****	
Green/Cycle:	0.19	0.19	0.19	0.27	0.26	0.26	0.10	0.33	0.33	0.10	0.32	0.32
Volume/Cap:	0.63	1.21	0.76	1.21	0.63	0.58	1.21	0.92	0.23	0.92	1.21	1.21
Delay/Veh:	40.8	149	49.2	149.6	34.1	34.3	162.8	38.8	24.5	74.4	133	133.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.8	149	49.2	149.6	34.1	34.3	162.8	38.8	24.5	74.4	133	133.2
LOS by Move:	D	F	D	F	C	C	F	D	C	E	F	F
HCM2k95thQ:	329	1025	386	1304	408	322	509	674	107	250	1431	1431

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L - T - R				L - T - R				L - T - R				L - T - R			
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	2 0	1		1 0	2 0	1		2 0	4 0	1		2 0	3 1	0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	2	1		1	2	1		2	4	1		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.90	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.19	0.19	0.19	0.27	0.26	0.26	0.10	0.33	0.33	0.10	0.32	0.32
ArrivalType:		4			4			4			4	
ProgFactor:	0.96	1.00	0.98	1.00	0.94	0.94	1.00	0.98	0.86	1.00	1.00	1.00
Q1:	5.3	11.7	5.8	15.9	7.1	5.4	6.2	14.7	2.1	4.3	19.6	19.6
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.99	0.99	0.83	0.83	0.83
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.11	0.11	0.45	0.45	0.45
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.03	0.06	0.06	0.11	0.24	0.24
Q2:	1.6	13.1	2.5	16.7	1.6	1.3	5.0	0.6	0.0	0.9	16.6	16.6
HCM2KQueue:	6.9	24.8	8.2	32.6	8.7	6.7	11.2	15.4	2.1	5.1	36.2	36.2
70th%Factor:	1.18	1.15	1.18	1.14	1.18	1.18	1.18	1.17	1.19	1.19	1.14	1.14
HCM2k70thQ:	8.2	28.7	9.7	37.3	10.3	8.0	13.1	17.9	2.5	6.1	41.3	41.3
85th%Factor:	1.54	1.43	1.53	1.40	1.52	1.54	1.51	1.48	1.58	1.55	1.39	1.39
HCM2k85thQ:	10.6	35.6	12.5	45.7	13.3	10.4	16.8	22.7	3.3	7.9	50.4	50.4
90th%Factor:	1.68	1.52	1.67	1.48	1.66	1.69	1.63	1.59	1.76	1.71	1.47	1.47
HCM2k90thQ:	11.6	37.7	13.7	48.2	14.5	11.3	18.2	24.4	3.7	8.7	53.1	53.1
95th%Factor:	1.91	1.65	1.88	1.60	1.87	1.91	1.82	1.76	2.03	1.95	1.58	1.58
HCM2k95thQ:	13.1	41.0	15.4	52.2	16.3	12.9	20.4	27.0	4.3	10.0	57.3	57.3
98th%Factor:	2.29	1.85	2.23	1.78	2.21	2.30	2.12	2.01	2.55	2.37	1.76	1.76
HCM2k98thQ:	15.8	45.9	18.3	58.1	19.3	15.4	23.7	30.8	5.4	12.1	63.8	63.8

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.851
Loss Time (sec):	12	Average Delay (sec/veh):	39.5
Optimal Cycle:	91	Level Of Service:	D

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	PM Pk Hr											
Base Vol:	327	602	261	246	451	130	232	1740	185	343	1710	182
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	327	602	261	246	451	130	232	1740	185	343	1710	182
Added Vol:	0	0	17	8	0	0	0	58	0	15	51	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	327	602	278	254	451	130	232	1798	185	358	1761	189
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	355	654	302	276	490	141	252	1954	201	389	1914	205
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	355	654	302	276	490	141	252	1954	201	389	1914	205
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	355	654	302	276	490	141	252	1954	201	389	1914	205
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.88	0.88
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	3.61	0.39
Final Sat.:	1769	3538	1583	1769	3538	1583	3432	6778	1583	3432	6029	647
Capacity Analysis Module:												
Vol/Sat:	0.20	0.18	0.19	0.16	0.14	0.09	0.07	0.29	0.13	0.11	0.32	0.32
Crit Moves:			****	****				****		****		
Green/Cycle:	0.24	0.22	0.22	0.18	0.17	0.17	0.09	0.34	0.34	0.13	0.38	0.38
Volume/Cap:	0.83	0.82	0.85	0.85	0.83	0.54	0.83	0.85	0.37	0.85	0.83	0.83
Delay/Veh:	49.1	43.9	54.6	58.3	50.2	40.3	61.7	34.0	25.5	56.5	30.2	30.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.1	43.9	54.6	58.3	50.2	40.3	61.7	34.0	25.5	56.5	30.2	30.2
LOS by Move:	D	D	D	E	D	D	E	C	C	E	C	C
HCM2k95thQ:	570	555	525	498	467	224	190	626	187	405	757	757

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	2	0	1	1	0	2	0	1	2	0	4	0	1	2
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	2	1		1	2	1		2	4	1		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.90	0.89	0.83		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.24	0.22	0.22		0.18	0.17	0.17		0.09	0.34	0.34		0.13	0.38	0.38	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.98	0.98		0.99	0.99	0.97		0.99	0.96	0.87		0.99	0.94	0.94	
Q1:	9.1	8.9	7.9		7.3	6.8	3.5		3.5	13.3	3.7		5.4	13.7	13.7	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.92	0.92	0.92		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.28	0.28	0.28		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.07	0.15	0.14		1.00	1.00	1.00	
Q2:	3.6	3.4	3.7		3.6	3.3	1.1		0.3	0.8	0.1		3.3	3.8	3.8	
HCM2KQueue:	12.7	12.3	11.6		10.9	10.1	4.5		3.8	14.1	3.8		8.7	17.6	17.6	
70th%Factor:	1.17	1.17	1.17		1.18	1.18	1.19		1.19	1.17	1.19		1.18	1.16	1.16	
HCM2k70thQ:	14.9	14.5	13.6		12.8	11.9	5.4		4.6	16.5	4.5		10.2	20.4	20.4	
85th%Factor:	1.50	1.50	1.50		1.51	1.51	1.56		1.56	1.49	1.56		1.52	1.47	1.47	
HCM2k85thQ:	19.0	18.5	17.4		16.4	15.3	7.1		6.0	21.0	5.9		13.2	25.7	25.7	
90th%Factor:	1.61	1.62	1.62		1.63	1.64	1.72		1.73	1.60	1.73		1.66	1.57	1.57	
HCM2k90thQ:	20.5	19.9	18.8		17.8	16.6	7.8		6.6	22.5	6.5		14.4	27.5	27.5	
95th%Factor:	1.80	1.80	1.82		1.83	1.84	1.97		1.99	1.77	1.99		1.87	1.73	1.73	
HCM2k95thQ:	22.8	22.2	21.0		19.9	18.7	8.9		7.6	25.0	7.5		16.2	30.3	30.3	
98th%Factor:	2.08	2.09	2.11		2.13	2.16	2.40		2.45	2.04	2.45		2.21	1.96	1.96	
HCM2k98thQ:	26.4	25.7	24.4		23.2	21.9	10.9		9.4	28.7	9.2		19.2	34.4	34.4	

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.131
Loss Time (sec):	12	Average Delay (sec/veh):	89.9
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Lower Sacramento Road							Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Y+R:	4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0		
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	4	0	1	2	0	3	1	0
Volume Module:	PM Pk Hr																			
Base Vol:	168	781	414			626	502	107			208	1903	88			520	1917	517		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	168	781	414			626	502	107			208	1903	88			520	1917	517		
Added Vol:	0	0	25			17	0	0			0	83	0			22	73	15		
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0		
Initial Fut:	168	781	439			643	502	107			208	1986	88			542	1990	532		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92		
PHF Volume:	183	849	477			699	546	116			226	2159	96			589	2163	578		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	183	849	477			699	546	116			226	2159	96			589	2163	578		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
FinalVolume:	183	849	477			699	546	116			226	2159	96			589	2163	578		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900		
Adjustment:	0.90	0.93	0.83			0.90	0.93	0.83			0.90	0.89	0.83			0.90	0.86	0.86		
Lanes:	2.00	2.00	1.00			2.00	2.00	1.00			2.00	4.00	1.00			2.00	3.16	0.84		
Final Sat.:	3432	3538	1583			3432	3538	1583			3432	6778	1583			3432	5177	1384		
Capacity Analysis Module:																				
Vol/Sat:	0.05	0.24	0.30			0.20	0.15	0.07			0.07	0.32	0.06			0.17	0.42	0.42		
Crit Moves:			****			****						****				****				
Green/Cycle:	0.11	0.27	0.27			0.18	0.33	0.33			0.06	0.28	0.28			0.15	0.37	0.37		
Volume/Cap:	0.46	0.90	1.13			1.13	0.46	0.22			1.12	1.13	0.21			1.13	1.12	1.12		
Delay/Veh:	42.3	46.9	121.3			119.0	26.7	24.3			144.9	102	27.7			123.2	89.8	89.8		
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
AdjDel/Veh:	42.3	46.9	121.3			119.0	26.7	24.3			144.9	102	27.7			123.2	89.8	89.8		
LOS by Move:	D	D	F			F	C	C			F	F	C			F	F	F		
HCM2k95thQ:	160	727	1037			842	309	116			372	1224	106			743	1447	1447		

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																				
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	4	0	1	2	0	3	1	0
Lane Group:	L		T		R	L		T		R	L		T		R	L		RT		RT
#LnsInGrps:	2		2		1	2		2		1	2		4		1	2		4		4
HCM Ops Input Saturation Adj Module:																				
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12
CrsswalkWid:			8					8					8					8		
% Hev Veh:			2					2					2					2		
Grade:			0%					0%					0%					0%		
Parking/Hr:			No					No					No					No		
Bus Stp/Hr:			0					0					0					0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >																			
Cnft Ped/Hr:			0					0					0					0		
ExclusiveRT:			Include					Include					Include					Include		
% RT Prtct:			0					0					0					0		
HCM Ops f(lt) Adj Case Module:																				
f(lt) Case:	1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx		
HCM Ops Saturation Adj Module:																				
Ln Wid Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Hev Veh Adj:	0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98		
Grade Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Parking Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00		
Bus Stp Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00		
Area Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
RT Adj:	xxxx	xxxx	0.85			xxxx	xxxx	0.85			xxxx	xxxx	0.85			xxxx	0.97	0.97		
LT Adj:	0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx		
PedBike Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
HCM Sat Adj:	0.93	0.98	0.83			0.93	0.98	0.83			0.93	0.98	0.83			0.93	0.95	0.95		
Usr Sat Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Sat Adj:	0.97	0.95	1.00			0.97	0.95	1.00			0.97	0.91	1.00			0.97	0.91	0.91		
Fnl Sat Adj:	0.90	0.93	0.83			0.90	0.93	0.83			0.90	0.89	0.83			0.90	0.86	0.86		
Delay Adjustment Factor Module:																				
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >																			
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >																			
DelAdjFctr:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.11	0.27	0.27	0.18	0.33	0.33	0.06	0.28	0.28	0.15	0.37	0.37
ArrivalType:	4				4				4				4			
ProgFactor:	0.98	0.98	1.00	1.00	0.89	0.86	1.00	1.00	0.89	1.00	1.00	1.00
Q1:	2.4	11.8	13.3	10.0	5.6	2.0	3.2	16.5	1.8	8.4	20.9	20.9
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.8	5.0	11.9	9.8	0.8	0.3	4.6	13.9	0.3	8.7	15.8	15.8
HCM2KQueue:	3.2	16.8	25.2	19.8	6.4	2.3	7.9	30.4	2.1	17.2	36.7	36.7
70th%Factor:	1.19	1.17	1.15	1.16	1.19	1.19	1.18	1.15	1.19	1.17	1.14	1.14
HCM2k70thQ:	3.8	19.5	29.0	23.0	7.6	2.7	9.3	34.9	2.5	20.0	41.8	41.8
85th%Factor:	1.57	1.47	1.43	1.45	1.54	1.58	1.53	1.41	1.58	1.47	1.39	1.39
HCM2k85thQ:	5.0	24.7	36.0	28.8	9.9	3.6	12.1	42.8	3.3	25.2	50.9	50.9
90th%Factor:	1.74	1.57	1.51	1.55	1.69	1.76	1.67	1.49	1.76	1.57	1.46	1.46
HCM2k90thQ:	5.6	26.4	38.1	30.7	10.9	4.0	13.2	45.2	3.7	27.0	53.7	53.7
95th%Factor:	2.00	1.74	1.65	1.70	1.92	2.03	1.89	1.61	2.03	1.73	1.58	1.58
HCM2k95thQ:	6.4	29.1	41.5	33.7	12.4	4.6	14.9	49.0	4.2	29.7	57.9	57.9
98th%Factor:	2.48	1.98	1.84	1.92	2.31	2.54	2.25	1.80	2.55	1.97	1.76	1.76
HCM2k98thQ:	7.9	33.1	46.4	38.0	14.9	5.8	17.7	54.6	5.3	33.8	64.5	64.5

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec):	100	Critical Vol./Cap.(X):	1.374
Loss Time (sec):	12	Average Delay (sec/veh):	144.2
Optimal Cycle:	180	Level Of Service:	F

Street Name:	West Lane								Armstrong Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	2	0 1	1	0	2	0 1	1	0	2	0 1	1	0	2	0 1
Volume Module:	PM Pk Hr															
Base Vol:	45	764	437		660	457	29		58	572	23		534	575	569	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	45	764	437		660	457	29		58	572	23		534	575	569	
Added Vol:	0	44	0		0	50	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	45	808	437		660	507	29		58	572	23		534	575	569	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	49	878	475		717	551	32		63	622	25		580	625	618	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	49	878	475		717	551	32		63	622	25		580	625	618	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	49	878	475		717	551	32		63	622	25		580	625	618	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Lanes:	1.00	2.00	1.00		1.00	2.00	1.00		1.00	2.00	1.00		1.00	2.00	1.00	
Final Sat.:	1769	3538	1583		1769	3538	1583		1769	3538	1583		1769	3538	1583	
Capacity Analysis Module:																
Vol/Sat:	0.03	0.25	0.30		0.41	0.16	0.02		0.04	0.18	0.02		0.33	0.18	0.39	
Crit Moves:			****		****					****			****			
Green/Cycle:	0.08	0.22	0.22		0.30	0.44	0.44		0.03	0.13	0.13		0.24	0.34	0.34	
Volume/Cap:	0.36	1.14	1.37		1.37	0.36	0.05		1.16	1.37	0.12		1.37	0.53	1.16	
Delay/Veh:	45.4	116	224.9		215.6	19.0	16.3		222.1	226	38.9		221.0	27.2	125.8	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	45.4	116	224.9		215.6	19.0	16.3		222.1	226	38.9		221.0	27.2	125.8	
LOS by Move:	D	F	F		F	B	B		F	F	D		F	C	F	
HCM2k95thQ:	92	1019	1297		1836	236	22		252	964	38		1531	363	1314	

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 2	0 1		1	0 2	0 1		1	0 2	0 1		1	0 2	0 1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	2	1		1	2	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.08	0.22	0.22		0.30	0.44	0.44		0.03	0.13	0.13		0.24	0.34	0.34	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	1.00	1.00		1.00	0.79	0.75		1.00	1.00	0.96		1.00	0.90	1.00	
Q1:	1.3	12.8	13.2		19.9	4.3	0.4		1.8	9.1	0.6		16.1	6.6	17.2	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.5	11.8	19.3		27.7	0.6	0.0		3.4	14.1	0.1		22.9	1.1	15.8	
HCM2KQueue:	1.8	24.7	32.5		47.6	4.8	0.4		5.2	23.1	0.7		39.1	7.7	32.9	
70th%Factor:	1.20	1.15	1.14		1.13	1.19	1.20		1.19	1.16	1.20		1.14	1.18	1.14	
HCM2k70thQ:	2.1	28.5	37.1		53.8	5.7	0.5		6.1	26.8	0.9		44.4	9.1	37.7	
85th%Factor:	1.58	1.43	1.40		1.36	1.56	1.60		1.55	1.44	1.59		1.38	1.53	1.40	
HCM2k85thQ:	2.8	35.3	45.5		64.8	7.5	0.7		8.0	33.3	1.2		54.0	11.8	46.1	
90th%Factor:	1.77	1.52	1.48		1.44	1.71	1.79		1.71	1.53	1.79		1.46	1.67	1.48	
HCM2k90thQ:	3.2	37.4	48.0		68.4	8.2	0.8		8.8	35.3	1.3		56.9	12.8	48.6	
95th%Factor:	2.04	1.65	1.60		1.54	1.96	2.09		1.95	1.67	2.08		1.57	1.89	1.60	
HCM2k95thQ:	3.7	40.8	51.9		73.4	9.4	0.9		10.1	38.6	1.5		61.3	14.5	52.6	
98th%Factor:	2.57	1.85	1.78		1.73	2.39	2.67		2.37	1.87	2.65		1.75	2.25	1.78	
HCM2k98thQ:	4.6	45.7	57.8		82.1	11.5	1.1		12.3	43.2	1.9		68.3	17.3	58.6	

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.525
Loss Time (sec):	9	Average Delay (sec/veh):	13.2
Optimal Cycle:	36	Level Of Service:	B

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0	1	1	0
Volume Module:	PM Pk Hr											
Base Vol:	53	32	36	47	23	29	53	1043	29	47	1043	36
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	32	36	47	23	29	53	1043	29	47	1043	36
Added Vol:	0	0	16	0	0	0	0	28	22	4	45	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	53	32	52	47	23	29	53	1071	51	51	1088	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	58	35	57	51	25	32	58	1164	55	55	1183	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	58	35	57	51	25	32	58	1164	55	55	1183	39
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	58	35	57	51	25	32	58	1164	55	55	1183	39
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.80	0.80	0.80	0.75	0.75	0.75	0.93	0.92	0.92	0.93	0.93	0.93
Lanes:	0.39	0.23	0.38	0.48	0.23	0.29	1.00	1.91	0.09	1.00	1.94	0.06
Final Sat.:	587	355	576	678	332	418	1769	3353	160	1769	3407	113
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.08	0.08	0.08	0.03	0.35	0.35	0.03	0.35	0.35
Crit Moves:		****					****				****	
Green/Cycle:	0.19	0.19	0.19	0.19	0.19	0.19	0.06	0.66	0.66	0.06	0.66	0.66
Volume/Cap:	0.52	0.52	0.52	0.40	0.40	0.40	0.52	0.52	0.52	0.52	0.52	0.52
Delay/Veh:	38.5	38.5	38.5	36.8	36.8	36.8	50.1	8.9	8.9	50.3	9.0	9.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.5	38.5	38.5	36.8	36.8	36.8	50.1	8.9	8.9	50.3	9.0	9.0
LOS by Move:	D	D	D	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	227	227	227	158	158	158	126	241	241	123	246	246

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	0	0	1!	0	0		0	0	1!	0	0		1	0	1	1	0		1	0	1	1	0	
Lane Group:	LTR		LTR		LTR		LTR		LTR		LTR		L		RT		RT		L		RT		RT	
#LnsInGrps:	1		1		1		1		1		1		1		2		2		1		2		2	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:			8						8						8						8			
% Hev Veh:			2						2						2						2			
Grade:			0%						0%						0%						0%			
Parking/Hr:			No						No						No						No			
Bus Stp/Hr:			0						0						0						0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0						0						0						0			
ExclusiveRT:			Include						Include						Include						Include			
% RT Prtct:			0						0						0						0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	5		5		5		5		5		5		1	xxxx		xxxx			1	xxxx		xxxx		
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98												
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
Parking Adj:	1.00	1.00	1.00	1.00	1.00	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00												
Bus Stp Adj:	1.00	1.00	1.00	1.00	1.00	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00												
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
RT Adj:	0.95	0.95	0.95	0.96	0.96	0.96	xxxx	0.99	0.99	xxxx	1.00	1.00												
LT Adj:	0.86	0.86	0.86	0.80	0.80	0.80	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx												
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
HCM Sat Adj:	0.80	0.80	0.80	0.75	0.75	0.75	0.93	0.97	0.97	0.93	0.98	0.98												
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95												
Fnl Sat Adj:	0.80	0.80	0.80	0.75	0.75	0.75	0.93	0.92	0.92	0.93	0.93	0.93												
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	100	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	17.69	17.69	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	18.69	18.69	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	18.69	18.69	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	1	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	1	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	58	51	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	0.39	0.48	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	0.48	0.39	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	1.60	1.42	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	108	149	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	3.00	4.14	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	1.33	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	3.00	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	2.57	3.06	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	0.75	0.75	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	5.42	7.77	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	13.27	10.92	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	1.43	2.35	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	0.53	0.61	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	1.56	1.62	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	1.26	1.77	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	0.15	0.16	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	0.86	0.80	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	0.86	0.80	xxxxxx	xxxxxx

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.19	0.19	0.19	0.19	0.19	0.19	0.06	0.66	0.66	0.06	0.66	0.66
ArrivalType:	4			4			4			4		
ProgFactor:	0.96	0.96	0.96	0.95	0.95	0.95	0.99	0.42	0.42	0.99	0.43	0.43
Q1:	3.6	3.6	3.6	2.5	2.5	2.5	1.5	3.8	3.8	1.5	3.9	3.9
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	1.0	1.0	1.0	0.7	0.7	0.7	1.0	1.1	1.1	1.0	1.1	1.1
HCM2KQueue:	4.6	4.6	4.6	3.1	3.1	3.1	2.5	4.9	4.9	2.4	5.0	5.0
70th%Factor:	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19
HCM2k70thQ:	5.5	5.5	5.5	3.8	3.8	3.8	3.0	5.9	5.9	2.9	6.0	6.0
85th%Factor:	1.56	1.56	1.56	1.57	1.57	1.57	1.58	1.55	1.55	1.58	1.55	1.55
HCM2k85thQ:	7.2	7.2	7.2	4.9	4.9	4.9	3.9	7.7	7.7	3.8	7.8	7.8
90th%Factor:	1.72	1.72	1.72	1.74	1.74	1.74	1.75	1.71	1.71	1.75	1.71	1.71
HCM2k90thQ:	7.9	7.9	7.9	5.5	5.5	5.5	4.4	8.4	8.4	4.3	8.6	8.6
95th%Factor:	1.96	1.96	1.96	2.00	2.00	2.00	2.02	1.96	1.96	2.02	1.95	1.95
HCM2k95thQ:	9.1	9.1	9.1	6.3	6.3	6.3	5.1	9.6	9.6	4.9	9.8	9.8
98th%Factor:	2.40	2.40	2.40	2.48	2.48	2.48	2.53	2.38	2.38	2.53	2.38	2.38
HCM2k98thQ:	11.1	11.1	11.1	7.8	7.8	7.8	6.3	11.8	11.8	6.2	12.0	12.0

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	1.233
Loss Time (sec):	12	Average Delay (sec/veh):	109.1
Optimal Cycle:	180	Level Of Service:	F

Street Name:	West Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	3	1	0	2	0	3	1	0
Volume Module:	PM Pk Hr											
Base Vol:	801	837	121	151	760	422	693	1737	505	179	1720	104
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	801	837	121	151	760	422	693	1737	505	179	1720	104
Added Vol:	35	30	52	39	7	0	0	97	28	82	74	20
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	836	867	173	190	767	422	693	1834	533	261	1794	124
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	909	942	188	207	834	459	753	1993	579	284	1950	135
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	909	942	188	207	834	459	753	1993	579	284	1950	135
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	909	942	188	207	834	459	753	1993	579	284	1950	135
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.86	0.86	0.90	0.88	0.88
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.10	0.90	2.00	3.74	0.26
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	5073	1474	3432	6276	434
Capacity Analysis Module:												
Vol/Sat:	0.26	0.27	0.12	0.06	0.24	0.29	0.22	0.39	0.39	0.08	0.31	0.31
Crit Moves:	****					****	****				****	
Green/Cycle:	0.21	0.37	0.37	0.08	0.24	0.24	0.18	0.36	0.36	0.07	0.25	0.25
Volume/Cap:	1.23	0.73	0.32	0.73	1.00	1.23	1.23	1.11	1.11	1.11	1.23	1.23
Delay/Veh:	155.6	29.4	23.1	53.7	70.0	164.3	159.6	86.9	86.9	133.8	147	147.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	155.6	29.4	23.1	53.7	70.0	164.3	159.6	86.9	86.9	133.8	147	147.5
LOS by Move:	F	C	C	D	E	F	F	F	F	F	F	F
HCM2k95thQ:	1043	537	167	234	836	1119	984	1358	1358	335	1259	1259

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	2	0	2	0	1		2	0	2	0	1		2	0	3	1	0		2	0	3	1	0	
Lane Group:	L		T		R		L		T		R		L		RT		RT		L		RT		RT	
#LnsInGrps:	2		2		1		2		2		1		2		4		4		2		4		4	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:	8						8						8						8					
% Hev Veh:	2						2						2						2					
Grade:	0%						0%						0%						0%					
Parking/Hr:	No						No						No						No					
Bus Stp/Hr:	0						0						0						0					
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:	0						0						0						0					
ExclusiveRT:	Include						Include						Include						Include					
% RT Prtct:	0						0						0						0					
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx		
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
Hev Veh Adj:	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98
Grade Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
Parking Adj:	xxxx	xxxx		1.00		xxxx	xxxx	1.00		xxxx		1.00	xxxx	1.00		1.00		xxxx	1.00	1.00		xxxx		1.00
Bus Stp Adj:	xxxx	xxxx		1.00		xxxx	xxxx	1.00		xxxx		1.00	xxxx	1.00		1.00		xxxx	1.00	1.00		xxxx		1.00
Area Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
RT Adj:	xxxx	xxxx		0.85		xxxx	xxxx	0.85		xxxx		0.97	0.97			xxxx		0.99	0.99					
LT Adj:	0.95	xxxx		xxxxx		0.95	xxxx	xxxxx		0.95		xxxx	xxxxx			0.95		xxxx	xxxxx					
PedBike Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
HCM Sat Adj:	0.93	0.98		0.83		0.93	0.98	0.83		0.93		0.95	0.95			0.93		0.97	0.97					
Usr Sat Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
MLF Sat Adj:	0.97	0.95		1.00		0.97	0.95	1.00		0.97		0.91	0.91			0.97		0.91	0.91					
Fnl Sat Adj:	0.90	0.93		0.83		0.90	0.93	0.83		0.90		0.86	0.86			0.90		0.88	0.88					
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00			1.00		1.00	1.00					

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.21	0.37	0.37	0.08	0.24	0.24	0.18	0.36	0.36	0.07	0.25	0.25
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.92	0.84	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	13.0	10.9	3.2	2.9	12.2	12.7	10.8	19.6	19.6	4.1	15.9	15.9
UpstreamVC:	0.71	0.71	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.41	0.41
UpstreamAdj:	0.64	0.64	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.91	0.91	0.91
EarlyArrAdj:	0.26	0.38	0.34	1.00	1.00	1.00	1.00	1.00	1.00	0.20	0.42	0.42
Q2:	12.3	1.0	0.2	1.9	7.5	14.7	12.9	14.5	14.5	3.0	15.5	15.5
HCM2KQueue:	25.3	11.9	3.3	4.8	19.7	27.5	23.7	34.2	34.2	7.0	31.4	31.4
70th%Factor:	1.15	1.17	1.19	1.19	1.16	1.15	1.16	1.14	1.14	1.18	1.15	1.15
HCM2k70thQ:	29.2	13.9	4.0	5.7	22.8	31.6	27.4	39.0	39.0	8.3	36.0	36.0
85th%Factor:	1.43	1.50	1.57	1.56	1.46	1.42	1.44	1.40	1.40	1.54	1.41	1.41
HCM2k85thQ:	36.2	17.8	5.2	7.4	28.6	39.0	34.0	47.7	47.7	10.8	44.1	44.1
90th%Factor:	1.51	1.62	1.74	1.72	1.55	1.50	1.52	1.47	1.47	1.68	1.48	1.48
HCM2k90thQ:	38.3	19.2	5.8	8.2	30.5	41.2	36.1	50.3	50.3	11.8	46.6	46.6
95th%Factor:	1.65	1.81	2.00	1.96	1.70	1.63	1.66	1.59	1.59	1.91	1.60	1.60
HCM2k95thQ:	41.7	21.5	6.7	9.4	33.4	44.8	39.4	54.3	54.3	13.4	50.4	50.4
98th%Factor:	1.84	2.10	2.47	2.39	1.92	1.82	1.86	1.77	1.77	2.28	1.79	1.79
HCM2k98thQ:	46.7	24.9	8.2	11.4	37.8	50.0	44.1	60.6	60.6	16.1	56.2	56.2

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Average Delay (sec/veh): 3.1 Worst Case Level Of Service: F[52.1]

Street Name:	Ham Lane								Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L -	T -	R		L -	T -	R		L -	T -	R		L -	T -	R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0	0	0	0	0	0	1	0	0	4	0	0	0	0	3	1	0
Volume Module:	PM Pk Hr																			
Base Vol:	0	0	0	0	0	252	0	2140	0	0	1798	291								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	0	0	0	0	0	252	0	2140	0	0	1798	291								
Added Vol:	0	0	0	0	0	46	0	315	0	0	174	31								
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0								
Initial Fut:	0	0	0	0	0	298	0	2455	0	0	1972	322								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92								
PHF Volume:	0	0	0	0	0	324	0	2668	0	0	2143	350								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	0	0	0	0	0	324	0	2668	0	0	2143	350								
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	711	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	376	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	376	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	0.86	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	206.5	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	52.1	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	*	*	*	F	*	*	*	*	*	*								
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT								
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx			52.1			xxxxxx			xxxxxx										
ApproachLOS:	*			F			*			*										

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			12 feet			12 feet			12 feet	

Time Period: 0.25 hour

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St G

Cycle (sec):	100	Critical Vol./Cap.(X):	0.671
Loss Time (sec):	12	Average Delay (sec/veh):	17.6
Optimal Cycle:	56	Level Of Service:	B

Street Name:	Leach Road/Street G						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1 0 1	1	0	0 1 0	1	0	3 1 0	1	0	3 1 0
Volume Module:PM Pk Hr												
Base Vol:	0	0	0	170	0	7	18	2163	0	0	2134	193
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	170	0	7	18	2163	0	0	2134	193
Added Vol:	38	0	54	0	0	0	65	215	56	94	146	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	38	0	54	170	0	7	83	2378	56	94	2280	193
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	41	0	59	185	0	8	90	2585	61	102	2478	210
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	41	0	59	185	0	8	90	2585	61	102	2478	210
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	41	0	59	185	0	8	90	2585	61	102	2478	210
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	0.93	1.00	0.83	0.93	0.89	0.89	0.93	0.88	0.88
Lanes:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	3.91	0.09	1.00	3.69	0.31
Final Sat.:	1769	1900	1583	1769	0	1583	1769	6602	155	1769	6174	523
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.04	0.10	0.00	0.00	0.05	0.39	0.39	0.06	0.40	0.40
Crit Moves:			****	****				****		****		
Green/Cycle:	0.17	0.00	0.06	0.16	0.00	0.16	0.08	0.58	0.58	0.09	0.59	0.59
Volume/Cap:	0.13	0.00	0.67	0.67	0.00	0.03	0.68	0.67	0.67	0.67	0.68	0.68
Delay/Veh:	35.1	0.0	64.8	46.1	0.0	35.9	58.0	14.7	14.7	55.4	14.3	14.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.1	0.0	64.8	46.1	0.0	35.9	58.0	14.7	14.7	55.4	14.3	14.3
LOS by Move:	D	A	E	D	A	D	E	B	B	E	B	B
HCM2k95thQ:	55	0	153	311	0	10	199	517	517	214	510	510

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St G

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 1	0 1		1	0 0	1 0		1	0 3	1 0		1	0 3	1 0	
Lane Group:	L	T	R		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	4	4		1	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	xxxx	0.98		0.98	xxxx	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	1.00	1.00		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	1.00	0.83		0.93	1.00	0.83		0.93	0.98	0.98		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.91	0.91		1.00	0.91	0.91	
Fnl Sat Adj:	0.93	1.00	0.83		0.93	1.00	0.83		0.93	0.89	0.89		0.93	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	1.00		1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St G

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.17	0.00	0.06		0.16	0.00	0.16		0.08	0.58	0.58		0.09	0.59	0.59	
ArrivalType:		4				4				4				4		
ProgFactor:	0.94	1.00	0.99		0.98	1.00	0.94		0.99	0.68	0.68		0.99	0.66	0.66	
Q1:	0.9	0.0	1.6		4.7	0.0	0.2		2.4	9.4	9.4		2.7	9.2	9.2	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	0.00	1.00		1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.2	0.0	1.5		1.8	0.0	0.0		1.6	2.0	2.0		1.6	2.0	2.0	
HCM2KQueue:	1.1	0.0	3.0		6.5	0.0	0.2		4.0	11.4	11.4		4.3	11.2	11.2	
70th%Factor:	1.20	1.20	1.19		1.19	1.20	1.20		1.19	1.18	1.18		1.19	1.18	1.18	
HCM2k70thQ:	1.3	0.0	3.6		7.7	0.0	0.2		4.8	13.4	13.4		5.2	13.2	13.2	
85th%Factor:	1.59	1.60	1.57		1.54	1.60	1.60		1.56	1.51	1.51		1.56	1.51	1.51	
HCM2k85thQ:	1.7	0.0	4.8		10.0	0.0	0.3		6.3	17.1	17.1		6.8	16.9	16.9	
90th%Factor:	1.78	1.80	1.74		1.69	1.80	1.80		1.73	1.63	1.63		1.72	1.63	1.63	
HCM2k90thQ:	1.9	0.0	5.3		11.0	0.0	0.4		7.0	18.5	18.5		7.5	18.2	18.2	
95th%Factor:	2.07	2.10	2.01		1.92	2.10	2.09		1.98	1.82	1.82		1.97	1.82	1.82	
HCM2k95thQ:	2.2	0.0	6.1		12.5	0.0	0.4		8.0	20.7	20.7		8.6	20.4	20.4	
98th%Factor:	2.62	2.70	2.49		2.31	2.70	2.68		2.43	2.12	2.12		2.42	2.12	2.12	
HCM2k98thQ:	2.8	0.0	7.6		15.0	0.0	0.5		9.8	24.1	24.1		10.5	23.8	23.8	

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Cycle (sec):	100	Critical Vol./Cap.(X):	0.882
Loss Time (sec):	12	Average Delay (sec/veh):	36.3
Optimal Cycle:	102	Level Of Service:	D

Street Name:	Micke Grove Road/Holman Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	1	0	2	0	1	2	0	4	0	1	2	0	4	0	1
Volume Module:	PM Pk Hr											
Base Vol:	475	175	41	52	182	253	389	1580	320	65	1568	33
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	475	175	41	52	182	253	389	1580	320	65	1568	33
Added Vol:	90	2	3	0	4	30	27	120	122	6	122	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	565	177	44	52	186	283	416	1700	442	71	1690	33
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	614	192	48	57	202	308	452	1848	480	77	1837	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	614	192	48	57	202	308	452	1848	480	77	1837	36
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	614	192	48	57	202	308	452	1848	480	77	1837	36
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	3538	1583	1769	3538	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.18	0.05	0.03	0.03	0.06	0.19	0.13	0.27	0.30	0.02	0.27	0.02
Crit Moves:	****					****	****				****	
Green/Cycle:	0.20	0.27	0.27	0.16	0.22	0.22	0.15	0.43	0.43	0.03	0.31	0.31
Volume/Cap:	0.88	0.20	0.11	0.20	0.26	0.88	0.88	0.64	0.71	0.71	0.88	0.07
Delay/Veh:	51.3	28.5	27.8	37.1	32.4	59.8	57.9	23.2	27.4	68.1	37.7	24.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.3	28.5	27.8	37.1	32.4	59.8	57.9	23.2	27.4	68.1	37.7	24.6
LOS by Move:	D	C	C	D	C	E	E	C	C	E	D	C
HCM2k95thQ:	566	112	53	80	132	554	464	514	542	61	619	32

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L - T - R				L - T - R				L - T - R				L - T - R			
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0	1	1	0	2	0	1	2	0	4	0	1	2	0	4	0	1
Lane Group:	L		T		R	L		T		R	L		T		R	L		T		R
#LnsInGrps:	2		2		1	1		2		1	2		4		1	2		4		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12
CrsswalkWid:	8					8					8					8				
% Hev Veh:	2					2					2					2				
Grade:	0%					0%					0%					0%				
Parking/Hr:	No					No					No					No				
Bus Stp/Hr:	0					0					0					0				
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0					0					0					0				
ExclusiveRT:	Include					Include					Include					Include				
% RT Prtct:	0					0					0					0				
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx		
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Hev Veh Adj:	0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98		
Grade Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Parking Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00		
Bus Stp Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00		
Area Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
RT Adj:	xxxx	xxxx	0.85			xxxx	xxxx	0.85			xxxx	xxxx	0.85			xxxx	xxxx	0.85		
LT Adj:	0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx		
PedBike Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
HCM Sat Adj:	0.93	0.98	0.83			0.93	0.98	0.83			0.93	0.98	0.83			0.93	0.98	0.83		
Usr Sat Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Sat Adj:	0.97	0.95	1.00			1.00	0.95	1.00			0.97	0.91	1.00			0.97	0.91	1.00		
Fnl Sat Adj:	0.90	0.93	0.83			0.93	0.93	0.83			0.90	0.89	0.83			0.90	0.89	0.83		
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.20	0.27	0.27	0.16	0.22	0.22	0.15	0.43	0.43	0.03	0.31	0.31
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.90	0.89	0.95	0.92	0.99	0.99	0.86	0.88	1.00	0.97	0.86
Q1:	8.4	2.0	0.9	1.3	2.3	8.1	6.3	9.6	9.7	1.1	13.0	0.6
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.92	0.92	0.92
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.28	0.28
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.04	0.15	0.13
Q2:	4.2	0.3	0.1	0.3	0.3	4.1	3.8	1.7	2.3	0.1	1.0	0.0
HCM2KQueue:	12.6	2.2	1.0	1.6	2.6	12.3	10.1	11.3	12.0	1.2	13.9	0.6
70th%Factor:	1.17	1.19	1.20	1.20	1.19	1.17	1.18	1.18	1.17	1.20	1.17	1.20
HCM2k70thQ:	14.8	2.6	1.2	1.9	3.1	14.4	11.9	13.3	14.1	1.4	16.3	0.7
85th%Factor:	1.50	1.58	1.59	1.58	1.58	1.50	1.51	1.51	1.50	1.59	1.49	1.59
HCM2k85thQ:	18.9	3.5	1.6	2.5	4.1	18.4	15.3	17.0	18.0	1.9	20.8	1.0
90th%Factor:	1.61	1.76	1.78	1.77	1.75	1.62	1.64	1.63	1.62	1.78	1.60	1.79
HCM2k90thQ:	20.3	3.9	1.8	2.7	4.6	19.9	16.5	18.4	19.4	2.1	22.3	1.1
95th%Factor:	1.80	2.03	2.07	2.05	2.02	1.80	1.84	1.82	1.81	2.06	1.78	2.08
HCM2k95thQ:	22.7	4.5	2.1	3.2	5.3	22.2	18.6	20.6	21.7	2.4	24.8	1.3
98th%Factor:	2.08	2.54	2.62	2.59	2.52	2.09	2.16	2.12	2.10	2.61	2.04	2.65
HCM2k98thQ:	26.2	5.6	2.7	4.0	6.6	25.7	21.8	23.9	25.1	3.1	28.5	1.6

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Eight Mile & SR 99 W Frontage

Cycle (sec):	100	Critical Vol./Cap.(X):	0.916
Loss Time (sec):	12	Average Delay (sec/veh):	32.5
Optimal Cycle:	118	Level Of Service:	C

Street Name:	SR 99 West Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1	0	1 0	0	1	0	3	0 1	2 0	2 1 0
Volume Module:	PM Pk Hr											
Base Vol:	2	10	156	339	3	2	6	1702	1	131	1668	396
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	10	156	339	3	2	6	1702	1	131	1668	396
Added Vol:	0	0	0	0	0	0	0	123	0	0	127	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	2	10	156	339	3	2	6	1825	1	131	1795	396
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	2	11	170	368	3	2	7	1984	1	142	1951	430
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	11	170	368	3	2	7	1984	1	142	1951	430
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	2	11	170	368	3	2	7	1984	1	142	1951	430
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.84	0.84	0.93	0.92	0.92	0.93	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	0.06	0.94	1.00	0.60	0.40	1.00	3.00	1.00	2.00	2.46	0.54
Final Sat.:	1769	96	1503	1769	1050	700	1769	5083	1583	3432	4052	894
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.11	0.21	0.00	0.00	0.00	0.39	0.00	0.04	0.48	0.48
Crit Moves:		****		****			****				****	
Green/Cycle:	0.10	0.12	0.12	0.23	0.25	0.25	0.00	0.48	0.48	0.05	0.53	0.53
Volume/Cap:	0.01	0.92	0.92	0.92	0.01	0.01	0.92	0.82	0.00	0.82	0.92	0.92
Delay/Veh:	40.6	84.6	84.6	63.1	28.1	28.1	332.0	24.5	13.6	71.7	27.4	27.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.6	84.6	84.6	63.1	28.1	28.1	332.0	24.5	13.6	71.7	27.4	27.4
LOS by Move:	D	F	F	E	C	C	F	C	B	E	C	C
HCM2k95thQ:	3	409	409	656	6	6	16	745	1	129	1030	1030

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	1 0	1	0	0	1 0	1	0	3	0 1	2	0	2	1 0
Lane Group:	L		RT	RT	L		RT	RT	L		T	R	L		RT	RT
#LnsInGrps:	1		1	1	1		1	1	1		3	1	2		3	3
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.86	0.86		xxxx	0.94	0.94		xxxx	xxxx	0.85		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.84	0.84		0.93	0.92	0.92		0.93	0.98	0.83		0.93	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.84	0.84		0.93	0.92	0.92		0.93	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.10	0.12	0.12		0.23	0.25	0.25		0.00	0.48	0.48		0.05	0.53	0.53	
ArrivalType:		4				4				4				4		
ProgFactor:	0.96	1.00	1.00		0.99	0.89	0.89		1.00	0.88	0.69		1.00	0.91	0.91	
Q1:	0.1	4.9	4.9		9.9	0.1	0.1		0.2	15.2	0.0		2.0	20.3	20.3	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.64	0.64	0.64		0.46	0.46	0.46	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.72	0.72	0.72		0.89	0.89	0.89	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.03	0.50	0.45		0.15	0.63	0.63	
Q2:	0.0	3.8	3.8		5.0	0.0	0.0		0.1	2.0	0.0		0.5	4.7	4.7	
HCM2KQueue:	0.1	8.8	8.8		14.9	0.1	0.1		0.3	17.2	0.0		2.6	25.0	25.0	
70th%Factor:	1.20	1.18	1.18		1.17	1.20	1.20		1.20	1.17	1.20		1.19	1.15	1.15	
HCM2k70thQ:	0.1	10.3	10.3		17.4	0.1	0.1		0.4	20.1	0.0		3.0	28.8	28.8	
85th%Factor:	1.60	1.52	1.52		1.48	1.60	1.60		1.60	1.47	1.60		1.58	1.43	1.43	
HCM2k85thQ:	0.1	13.4	13.4		22.1	0.2	0.2		0.5	25.3	0.0		4.0	35.7	35.7	
90th%Factor:	1.80	1.66	1.66		1.59	1.80	1.80		1.79	1.57	1.80		1.75	1.51	1.51	
HCM2k90thQ:	0.1	14.5	14.5		23.7	0.2	0.2		0.5	27.0	0.0		4.5	37.8	37.8	
95th%Factor:	2.10	1.87	1.87		1.76	2.10	2.10		2.09	1.73	2.10		2.02	1.65	1.65	
HCM2k95thQ:	0.1	16.4	16.4		26.2	0.2	0.2		0.6	29.8	0.0		5.2	41.2	41.2	
98th%Factor:	2.70	2.21	2.21		2.02	2.69	2.69		2.68	1.97	2.70		2.52	1.85	1.85	
HCM2k98thQ:	0.2	19.4	19.4		30.0	0.3	0.3		0.8	33.9	0.0		6.4	46.1	46.1	

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Eight Mile & SR 99 E Frontage

Cycle (sec):	100	Critical Vol./Cap.(X):	0.245
Loss Time (sec):	12	Average Delay (sec/veh):	4.0
Optimal Cycle:	29	Level Of Service:	A

Street Name:	SR 99 East Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0
Volume Module:	PM Pk Hr											
Base Vol:	10	2	6	8	1	5	10	626	5	8	626	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	2	6	8	1	5	10	626	5	8	626	6
Added Vol:	0	0	0	0	0	0	0	15	0	0	17	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	10	2	6	8	1	5	10	641	5	8	643	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	11	2	7	9	1	5	11	697	5	9	699	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	11	2	7	9	1	5	11	697	5	9	699	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	11	2	7	9	1	5	11	697	5	9	699	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.87	0.87	0.93	0.86	0.86	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	1.00	0.25	0.75	1.00	0.17	0.83	1.00	2.00	1.00	1.00	1.98	0.02
Final Sat.:	1769	413	1240	1769	272	1358	1769	3538	1583	1769	3502	33
Capacity Analysis Module:												
Vol/Sat:	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.20	0.00	0.00	0.20	0.20
Crit Moves:	****				****		****				****	
Green/Cycle:	0.03	0.02	0.02	0.02	0.02	0.02	0.03	0.82	0.82	0.02	0.81	0.81
Volume/Cap:	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.24	0.00	0.24	0.25	0.25
Delay/Veh:	50.7	51.8	51.8	51.9	53.4	53.4	50.7	2.1	1.7	51.7	2.2	2.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.7	51.8	51.8	51.9	53.4	53.4	50.7	2.1	1.7	51.7	2.2	2.2
LOS by Move:	D	D	D	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	31	28	28	28	24	24	17	15	0	28	17	17

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	1 0	1	0	0	1 0	1	0	2	0 1	1	0	1	1 0
Lane Group:	L		RT	RT	L		RT	RT	L		T	R	L		RT	RT
#LnsInGrps:	1		1	1	1		1	1	1		2	1	1		2	2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1		xxxx	xxxx	1		xxxx	xxxx	1		xxxx	xxxx	1		xxxx	xxxx
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.89	0.89		xxxx	0.88	0.88		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.87	0.87		0.93	0.86	0.86		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	0.95	
Fnl Sat Adj:	0.93	0.87	0.87		0.93	0.86	0.86		0.93	0.93	0.83		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.03	0.02	0.02	0.02	0.02	0.02	0.03	0.82	0.82	0.02	0.81	0.81
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.99	0.99	0.99	1.00	1.00	0.99	0.00	0.00	0.99	0.00	0.00
Q1:	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.0	0.0	0.2	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.25	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.98	0.98	0.98	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.11	0.92	0.84	1.00	1.00	1.00
Q2:	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.3	0.0	0.3	0.3	0.3
HCM2KQueue:	0.6	0.5	0.5	0.5	0.5	0.5	0.3	0.3	0.0	0.5	0.3	0.3
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	0.7	0.6	0.6	0.6	0.6	0.6	0.4	0.4	0.0	0.6	0.4	0.4
85th%Factor:	1.59	1.59	1.59	1.59	1.60	1.60	1.60	1.60	1.60	1.59	1.60	1.60
HCM2k85thQ:	1.0	0.9	0.9	0.9	0.7	0.7	0.5	0.5	0.0	0.8	0.5	0.5
90th%Factor:	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.80	1.79	1.79	1.79
HCM2k90thQ:	1.1	1.0	1.0	1.0	0.8	0.8	0.6	0.5	0.0	0.9	0.6	0.6
95th%Factor:	2.08	2.08	2.08	2.08	2.08	2.08	2.09	2.09	2.10	2.08	2.09	2.09
HCM2k95thQ:	1.2	1.1	1.1	1.1	1.0	1.0	0.7	0.6	0.0	1.1	0.7	0.7
98th%Factor:	2.66	2.66	2.66	2.66	2.66	2.66	2.67	2.68	2.70	2.66	2.68	2.68
HCM2k98thQ:	1.6	1.4	1.4	1.4	1.3	1.3	0.9	0.8	0.0	1.4	0.9	0.9

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 West & L.C.MarkTaylor/Marlette

Cycle (sec):	100	Critical Vol./Cap.(X):	0.714
Loss Time (sec):	12	Average Delay (sec/veh):	32.7
Optimal Cycle:	61	Level Of Service:	C

Street Name:	West Lane						Lt.Col.Mark Taylor/Marlette Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 1	0	1 0	4 0	1	1 0	1 0	1	1 0	0 1	0
Volume Module:	PM Pk Hr											
Base Vol:	247	1512	59	66	1257	117	205	139	152	83	134	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	247	1512	59	66	1257	117	205	139	152	83	134	47
Added Vol:	0	149	74	44	61	11	19	22	0	104	25	5
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	247	1661	133	110	1318	128	224	161	152	187	159	52
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	268	1805	145	120	1433	139	243	175	165	203	173	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	268	1805	145	120	1433	139	243	175	165	203	173	57
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	268	1805	145	120	1433	139	243	175	165	203	173	57
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.88	0.88	0.93	0.89	0.83	0.93	0.98	0.83	0.93	0.94	0.94
Lanes:	1.00	3.70	0.30	1.00	4.00	1.00	1.00	1.00	1.00	1.00	0.75	0.25
Final Sat.:	1769	6206	497	1769	6778	1583	1769	1862	1583	1769	1351	442
Capacity Analysis Module:												
Vol/Sat:	0.15	0.29	0.29	0.07	0.21	0.09	0.14	0.09	0.10	0.11	0.13	0.13
Crit Moves:	****				****		****				****	
Green/Cycle:	0.21	0.41	0.41	0.10	0.30	0.30	0.19	0.18	0.18	0.19	0.18	0.18
Volume/Cap:	0.71	0.71	0.71	0.71	0.71	0.30	0.71	0.53	0.59	0.59	0.71	0.71
Delay/Veh:	43.0	25.2	25.2	56.5	32.7	27.5	44.8	39.0	41.1	39.3	46.1	46.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.0	25.2	25.2	56.5	32.7	27.5	44.8	39.0	41.1	39.3	46.1	46.1
LOS by Move:	D	C	C	E	C	C	D	D	D	D	D	D
HCM2k95thQ:	413	589	589	162	433	135	389	259	262	302	375	375

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #16 West & L.C.MarkTaylor/Marlette

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 3	1	0	1	0 4	0	1	1	0 1	0	1	1	0 0	1	0
Lane Group:	L	RT		RT	L	T		R	L	T		R	L	RT		RT
#LnsInGrps:	1	4		4	1	4		1	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.99	0.99		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.96	0.96	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.97	0.97		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.94	0.94	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	0.91		1.00	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.88	0.88		0.93	0.89	0.83		0.93	0.98	0.83		0.93	0.94	0.94	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #16 West & L.C.MarkTaylor/Marlette

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.21	0.41	0.41		0.10	0.30	0.30		0.19	0.18	0.18		0.19	0.18	0.18	
ArrivalType:		4				4				4				4		
ProgFactor:	0.97	0.89	0.89		0.99	0.94	0.89		0.97	0.96	0.97		0.96	0.97	0.97	
Q1:	6.7	10.9	10.9		3.2	9.2	2.7		6.2	4.2	4.1		4.9	5.8	5.8	
UpstreamVC:	0.00	0.00	0.00		1.00	1.00	1.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.09	0.09	0.09		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		0.02	0.05	0.04		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	2.2	2.2	2.2		0.1	0.1	0.0		2.1	1.1	1.3		1.3	2.1	2.1	
HCM2KQueue:	8.9	13.2	13.2		3.2	9.3	2.7		8.3	5.3	5.4		6.3	8.0	8.0	
70th%Factor:	1.18	1.17	1.17		1.19	1.18	1.19		1.18	1.19	1.19		1.19	1.18	1.18	
HCM2k70thQ:	10.5	15.4	15.4		3.9	11.0	3.2		9.8	6.3	6.4		7.4	9.4	9.4	
85th%Factor:	1.52	1.49	1.49		1.57	1.52	1.57		1.53	1.55	1.55		1.54	1.53	1.53	
HCM2k85thQ:	13.5	19.7	19.7		5.1	14.2	4.2		12.7	8.3	8.4		9.7	12.2	12.2	
90th%Factor:	1.66	1.61	1.61		1.74	1.65	1.75		1.66	1.71	1.71		1.69	1.67	1.67	
HCM2k90thQ:	14.7	21.1	21.1		5.6	15.4	4.7		13.8	9.1	9.2		10.6	13.3	13.3	
95th%Factor:	1.87	1.79	1.79		2.00	1.86	2.02		1.88	1.95	1.94		1.92	1.89	1.89	
HCM2k95thQ:	16.5	23.5	23.5		6.5	17.3	5.4		15.6	10.4	10.5		12.1	15.0	15.0	
98th%Factor:	2.21	2.06	2.06		2.48	2.19	2.51		2.23	2.36	2.36		2.32	2.24	2.24	
HCM2k98thQ:	19.5	27.2	27.2		8.0	20.4	6.7		18.5	12.6	12.7		14.5	17.8	17.8	

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

Cycle (sec):	100	Critical Vol./Cap.(X):	1.175
Loss Time (sec):	12	Average Delay (sec/veh):	95.5
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Holman Road											Lt. Col. Mark Taylor Street											
Approach:	North Bound				South Bound				East Bound				West Bound										
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected							
Rights:	Include					Include					Include					Include							
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0					
Y+R:	4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0					
Lanes:	1	0	3	0	1	1	0	3	0	1	1	0	1	0	1	1	0	0	1	0			
Volume Module:	PM Pk Hr																						
Base Vol:	59	478	274			334	299	30			59	585	30			334	585	275					
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00					
Initial Bse:	59	478	274			334	299	30			59	585	30			334	585	275					
Added Vol:	9	16	0			59	42	21			10	36	6			0	52	56					
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0					
Initial Fut:	68	494	274			393	341	51			69	621	36			334	637	331					
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00					
PHF Adj:	0.95	0.95	0.95			0.95	0.95	0.95			0.95	0.95	0.95			0.95	0.95	0.95					
PHF Volume:	72	520	288			414	359	54			73	654	38			352	671	348					
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0					
Reduced Vol:	72	520	288			414	359	54			73	654	38			352	671	348					
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00					
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00					
FinalVolume:	72	520	288			414	359	54			73	654	38			352	671	348					
Saturation Flow Module:																							
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900					
Adjustment:	0.93	0.89	0.83			0.93	0.89	0.83			0.93	0.98	0.83			0.93	0.93	0.93					
Lanes:	1.00	3.00	1.00			1.00	3.00	1.00			1.00	1.00	1.00			1.00	0.66	0.34					
Final Sat.:	1769	5083	1583			1769	5083	1583			1769	1862	1583			1769	1163	604					
Capacity Analysis Module:																							
Vol/Sat:	0.04	0.10	0.18			0.23	0.07	0.03			0.04	0.35	0.02			0.20	0.58	0.58					
Crit Moves:			****			****					****						****						
Green/Cycle:	0.13	0.16	0.16			0.20	0.23	0.23			0.03	0.34	0.34			0.19	0.49	0.49					
Volume/Cap:	0.31	0.66	1.17			1.17	0.31	0.15			1.17	1.05	0.07			1.05	1.17	1.17					
Delay/Veh:	40.3	41.8	155.2			144.6	32.5	31.3			217.7	81.7	22.7			102.0	116	116.2					
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00					
AdjDel/Veh:	40.3	41.8	155.2			144.6	32.5	31.3			217.7	81.7	22.7			102.0	116	116.2					
LOS by Move:	D	D	F			F	C	C			F	F	C			F	F	F					
HCM2k95thQ:	94	261	650			977	164	65			198	1098	33			753	2012	2012					

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																									
Lanes:	1	0	3	0	1	1	0	3	0	1	1	0	1	0	1	1	0	0	1	0					
Lane Group:	L		T		R	L		T		R	L		T		R	L		RT		RT					
#LnsInGrps:	1		3		1	1		3		1	1		1		1	1		1		1					
HCM Ops Input Saturation Adj Module:																									
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12					
CrsswalkWid:			8					8					8					8							
% Hev Veh:			2					2					2					2							
Grade:			0%					0%					0%					0%							
Parking/Hr:			No					No					No					No							
Bus Stp/Hr:			0					0					0					0							
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > >																								
Cnft Ped/Hr:			0					0					0					0							
ExclusiveRT:			Include					Include					Include					Include							
% RT Prtct:			0					0					0					0							
HCM Ops f(lt) Adj Case Module:																									
f(lt) Case:	1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx							
HCM Ops Saturation Adj Module:																									
Ln Wid Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00							
Hev Veh Adj:	0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98							
Grade Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00							
Parking Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00							
Bus Stp Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00							
Area Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00							
RT Adj:	xxxx	xxxx	0.85			xxxx	xxxx	0.85			xxxx	xxxx	0.85			xxxx	0.95	0.95							
LT Adj:	0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx							
PedBike Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00							
HCM Sat Adj:	0.93	0.98	0.83			0.93	0.98	0.83			0.93	0.98	0.83			0.93	0.93	0.93							
Usr Sat Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00							
MLF Sat Adj:	1.00	0.91	1.00			1.00	0.91	1.00			1.00	1.00	1.00			1.00	1.00	1.00							
Fnl Sat Adj:	0.93	0.89	0.83			0.93	0.89	0.83			0.93	0.98	0.83			0.93	0.93	0.93							
Delay Adjustment Factor Module:																									
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > >																								
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >																								
DelAdjFctr:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00							

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.13	0.16	0.16	0.20	0.23	0.23	0.03	0.34	0.34	0.19	0.49	0.49
ArrivalType:		4			4			4			4	
ProgFactor:	0.96	0.98	1.00	1.00	0.93	0.91	1.00	1.00	0.84	1.00	1.00	1.00
Q1:	1.7	4.9	8.0	11.5	2.8	1.1	2.0	18.2	0.6	9.8	28.3	28.3
UpstreamVC:	0.57	0.57	0.57	0.00	0.00	0.00	0.18	0.18	0.18	0.00	0.00	0.00
UpstreamAdj:	0.80	0.80	0.80	0.00	0.00	0.00	0.99	0.99	0.99	0.00	0.00	0.00
EarlyArrAdj:	0.24	0.28	0.25	1.00	1.00	1.00	0.14	0.55	0.50	1.00	1.00	1.00
Q2:	0.1	0.5	6.7	12.0	0.5	0.2	2.0	8.7	0.0	7.7	24.2	24.2
HCM2KQueue:	1.8	5.4	14.7	23.5	3.3	1.3	4.0	26.9	0.6	17.4	52.5	52.5
70th%Factor:	1.20	1.19	1.17	1.16	1.19	1.20	1.19	1.15	1.20	1.16	1.13	1.13
HCM2k70thQ:	2.2	6.4	17.2	27.1	3.9	1.5	4.8	30.9	0.8	20.3	59.2	59.2
85th%Factor:	1.58	1.55	1.48	1.44	1.57	1.59	1.56	1.42	1.59	1.47	1.35	1.35
HCM2k85thQ:	2.9	8.3	21.9	33.8	5.1	2.0	6.2	38.2	1.0	25.6	71.0	71.0
90th%Factor:	1.76	1.71	1.59	1.52	1.74	1.78	1.73	1.50	1.79	1.57	1.43	1.43
HCM2k90thQ:	3.3	9.2	23.4	35.8	5.7	2.3	6.9	40.4	1.1	27.3	75.0	75.0
95th%Factor:	2.04	1.95	1.76	1.66	2.00	2.06	1.98	1.63	2.08	1.73	1.53	1.53
HCM2k95thQ:	3.8	10.5	26.0	39.1	6.5	2.6	7.9	43.9	1.3	30.1	80.5	80.5
98th%Factor:	2.57	2.36	2.02	1.86	2.48	2.61	2.44	1.83	2.65	1.96	1.72	1.72
HCM2k98thQ:	4.7	12.7	29.8	43.8	8.1	3.3	9.7	49.1	1.7	34.2	90.2	90.2

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.746
Loss Time (sec): 12 Average Delay (sec/veh): 31.4
Optimal Cycle: 66 Level Of Service: C

Street Name:	West Lane						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	4 0	1	2 0	4 0	1	2 0	2 0	1	2 0	2 0	1
Volume Module:	PM Pk Hr											
Base Vol:	441	1745	210	90	1413	80	158	328	298	281	274	63
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	441	1745	210	90	1413	80	158	328	298	281	274	63
Added Vol:	0	166	0	29	129	6	8	0	0	17	1	48
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	441	1911	210	119	1542	86	166	328	298	298	275	111
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	479	2077	228	129	1676	93	180	357	324	324	299	121
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	479	2077	228	129	1676	93	180	357	324	324	299	121
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	479	2077	228	129	1676	93	180	357	324	324	299	121
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3538	7448	1583	3538	7448	1583	3538	3724	1583	3538	3724	1583
Capacity Analysis Module:												
Vol/Sat:	0.14	0.28	0.14	0.04	0.23	0.06	0.05	0.10	0.20	0.09	0.08	0.08
Crit Moves:	****				****				****	****		
Green/Cycle:	0.18	0.43	0.43	0.06	0.30	0.30	0.15	0.27	0.27	0.12	0.24	0.24
Volume/Cap:	0.75	0.65	0.34	0.65	0.75	0.20	0.33	0.35	0.75	0.75	0.33	0.31
Delay/Veh:	43.5	23.3	19.5	53.8	32.9	26.1	38.0	29.3	40.1	49.3	31.4	31.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.5	23.3	19.5	53.8	32.9	26.1	38.0	29.3	40.1	49.3	31.4	31.5
LOS by Move:	D	C	B	D	C	C	D	C	D	D	C	C
HCM2k95thQ:	400	529	193	158	563	98	132	204	475	312	181	149

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	2	0	1	2
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	4	1		2	4	1		2	2	1		2	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.18	0.43	0.43		0.06	0.30	0.30		0.15	0.27	0.27		0.12	0.24	0.24	
ArrivalType:	4				4				4				4			
ProgFactor:	0.98	0.86	0.80		0.99	0.95	0.87		0.96	0.91	0.96		0.99	0.92	0.92	
Q1:	6.2	9.9	3.4		1.7	9.9	1.7		2.1	3.6	7.9		4.3	3.1	2.5	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	2.4	1.8	0.5		1.4	2.6	0.2		0.5	0.5	2.5		2.2	0.5	0.5	
HCM2KQueue:	8.5	11.7	3.9		3.2	12.5	1.9		2.6	4.1	10.3		6.5	3.6	3.0	
70th%Factor:	1.18	1.17	1.19		1.19	1.17	1.20		1.19	1.19	1.18		1.18	1.19	1.19	
HCM2k70thQ:	10.1	13.7	4.6		3.8	14.7	2.3		3.1	4.9	12.2		7.7	4.3	3.5	
85th%Factor:	1.53	1.50	1.56		1.57	1.50	1.58		1.57	1.56	1.51		1.54	1.57	1.57	
HCM2k85thQ:	13.0	17.6	6.1		5.0	18.7	3.0		4.1	6.4	15.6		10.0	5.7	4.7	
90th%Factor:	1.66	1.62	1.73		1.74	1.61	1.76		1.75	1.73	1.64		1.69	1.73	1.74	
HCM2k90thQ:	14.2	19.0	6.7		5.5	20.2	3.4		4.6	7.1	16.9		11.0	6.3	5.2	
95th%Factor:	1.87	1.81	1.98		2.00	1.80	2.04		2.02	1.98	1.84		1.92	1.99	2.01	
HCM2k95thQ:	16.0	21.2	7.7		6.3	22.5	3.9		5.3	8.2	19.0		12.5	7.2	6.0	
98th%Factor:	2.22	2.11	2.44		2.48	2.08	2.56		2.52	2.43	2.15		2.31	2.46	2.50	
HCM2k98thQ:	19.0	24.6	9.5		7.9	26.1	4.9		6.6	10.0	22.2		15.0	8.9	7.4	

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.638
Loss Time (sec):	12	Average Delay (sec/veh):	35.0
Optimal Cycle:	52	Level Of Service:	C

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:	PM Pk Hr											
Base Vol:	243	711	179	144	554	83	147	639	143	238	612	104
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	243	711	179	144	554	83	147	639	143	238	612	104
Added Vol:	3	22	0	0	20	27	3	23	2	0	39	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	246	733	179	144	574	110	150	662	145	238	651	104
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	267	797	195	157	624	120	163	720	158	259	708	113
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	267	797	195	157	624	120	163	720	158	259	708	113
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	267	797	195	157	624	120	163	720	158	259	708	113
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.15	0.16	0.12	0.09	0.12	0.08	0.09	0.14	0.10	0.15	0.14	0.07
Crit Moves:	****				****			****		****		
Green/Cycle:	0.24	0.27	0.27	0.15	0.19	0.19	0.18	0.22	0.22	0.23	0.27	0.27
Volume/Cap:	0.64	0.57	0.45	0.57	0.64	0.39	0.51	0.64	0.45	0.64	0.51	0.26
Delay/Veh:	37.6	31.8	30.8	42.1	38.6	36.1	38.5	36.5	34.5	38.2	31.2	28.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.6	31.8	30.8	42.1	38.6	36.1	38.5	36.5	34.5	38.2	31.2	28.9
LOS by Move:	D	C	C	D	D	D	D	D	C	D	C	C
HCM2k95thQ:	328	331	214	214	302	149	241	376	214	328	294	120

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	1	3	1	1	3	1	1	3	1	1	3	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Fnl Sat Adj:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.24	0.27	0.27	0.15	0.19	0.19	0.18	0.22	0.22	0.23	0.27	0.27
ArrivalType:		4			4			4			4	
ProgFactor:	0.95	0.93	0.92	0.97	0.97	0.95	0.96	0.96	0.94	0.96	0.93	0.90
Q1:	6.4	6.5	4.1	3.9	5.6	2.7	3.9	6.4	3.6	6.2	5.6	2.2
UpstreamVC:	0.67	0.67	0.67	0.31	0.31	0.31	0.00	0.00	0.00	0.41	0.41	0.41
UpstreamAdj:	0.69	0.69	0.69	0.96	0.96	0.96	0.00	0.00	0.00	0.91	0.91	0.91
EarlyArrAdj:	0.30	0.34	0.31	0.32	0.38	0.35	1.00	1.00	1.00	0.39	0.45	0.40
Q2:	0.5	0.4	0.2	0.4	0.6	0.2	1.0	1.6	0.8	0.7	0.5	0.1
HCM2KQueue:	6.9	6.9	4.3	4.3	6.3	3.0	4.9	8.0	4.3	6.9	6.1	2.4
70th%Factor:	1.18	1.18	1.19	1.19	1.19	1.19	1.19	1.18	1.19	1.18	1.19	1.19
HCM2k70thQ:	8.1	8.2	5.2	5.2	7.5	3.5	5.9	9.4	5.2	8.1	7.2	2.8
85th%Factor:	1.54	1.54	1.56	1.56	1.54	1.57	1.55	1.53	1.56	1.54	1.54	1.58
HCM2k85thQ:	10.6	10.7	6.8	6.8	9.7	4.7	7.7	12.2	6.8	10.6	9.4	3.7
90th%Factor:	1.68	1.68	1.72	1.72	1.69	1.74	1.71	1.67	1.72	1.68	1.69	1.76
HCM2k90thQ:	11.6	11.7	7.5	7.5	10.6	5.2	8.4	13.3	7.5	11.6	10.3	4.1
95th%Factor:	1.91	1.91	1.97	1.97	1.92	2.01	1.96	1.89	1.97	1.91	1.93	2.03
HCM2k95thQ:	13.1	13.2	8.6	8.5	12.1	6.0	9.6	15.0	8.6	13.1	11.8	4.8
98th%Factor:	2.29	2.29	2.42	2.42	2.32	2.50	2.38	2.24	2.42	2.29	2.33	2.53
HCM2k98thQ:	15.7	15.9	10.5	10.5	14.6	7.4	11.8	17.9	10.5	15.7	14.2	6.0

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 Morada Ln & SR99 W Frontage Rd

Cycle (sec): 100 Critical Vol./Cap.(X): 0.651
Loss Time (sec): 12 Average Delay (sec/veh): 24.4
Optimal Cycle: 53 Level Of Service: C

Street Name:	SR 99 West Frontage Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 1	0 1	2	0 0	1 0	1	0 2	1 0	1	0 2	0 1
Volume Module:	PM Pk Hr											
Base Vol:	5	63	89	466	26	11	28	686	2	96	678	505
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	63	89	466	26	11	28	686	2	96	678	505
Added Vol:	0	0	0	0	0	0	0	23	0	0	39	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	63	89	466	26	11	28	709	2	96	717	505
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	5	68	97	507	28	12	30	771	2	104	779	549
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	68	97	507	28	12	30	771	2	104	779	549
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	5	68	97	507	28	12	30	771	2	104	779	549
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.90	0.94	0.94	0.93	0.89	0.89	0.93	0.93	0.83
Lanes:	2.00	1.00	1.00	2.00	0.70	0.30	1.00	2.99	0.01	1.00	2.00	1.00
Final Sat.:	3432	1862	1583	3432	1250	529	1769	5069	14	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.04	0.06	0.15	0.02	0.02	0.02	0.15	0.15	0.06	0.22	0.35
Crit Moves:			****	****			****					****
Green/Cycle:	0.02	0.09	0.09	0.23	0.30	0.30	0.03	0.40	0.40	0.16	0.53	0.53
Volume/Cap:	0.08	0.39	0.65	0.65	0.08	0.08	0.65	0.38	0.38	0.38	0.41	0.65
Delay/Veh:	48.4	44.1	53.5	37.0	25.1	25.1	76.3	21.1	21.1	38.7	14.1	18.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.4	44.1	53.5	37.0	25.1	25.1	76.3	21.1	21.1	38.7	14.1	18.5
LOS by Move:	D	D	D	D	C	C	E	C	C	D	B	B
HCM2k95thQ:	8	120	201	377	40	40	51	237	237	135	252	435

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #22 Morada Ln & SR99 W Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 1	0	1	2	0 0	1	0	1	0 2	1	0	1	0 2	0	1
Lane Group:	L	T		R	L	RT		RT	L	RT		RT	L	T		R
#LnsInGrps:	2	1		1	2	1		1	1	3		3	1	2		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.96	0.96		xxxx	1.00	1.00		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.94	0.94		0.93	0.98	0.98		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		0.97	1.00	1.00		1.00	0.91	0.91		1.00	0.95	1.00	
Fnl Sat Adj:	0.90	0.98	0.83		0.90	0.94	0.94		0.93	0.89	0.89		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #22 Morada Ln & SR99 W Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.02	0.09	0.09		0.23	0.30	0.30		0.03	0.40	0.40		0.16	0.53	0.53	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.98	0.99		0.96	0.86	0.86		1.00	0.82	0.82		0.96	0.68	0.75	
Q1:	0.1	1.7	2.6		6.3	0.7	0.7		0.8	4.6	4.6		2.5	4.7	8.2	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.64	0.64	0.64		0.31	0.31	0.31	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.73	0.73	0.73		0.96	0.96	0.96	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.09	0.45	0.45		0.33	0.70	0.64	
Q2:	0.1	0.6	1.5		1.7	0.1	0.1		0.1	0.3	0.3		0.2	0.5	1.2	
HCM2KQueue:	0.2	2.4	4.1		8.0	0.8	0.8		1.0	4.8	4.8		2.7	5.2	9.4	
70th%Factor:	1.20	1.19	1.19		1.18	1.20	1.20		1.20	1.19	1.19		1.19	1.19	1.18	
HCM2k70thQ:	0.2	2.8	4.8		9.5	0.9	0.9		1.2	5.7	5.7		3.2	6.1	11.0	
85th%Factor:	1.60	1.58	1.56		1.53	1.59	1.59		1.59	1.56	1.56		1.57	1.55	1.52	
HCM2k85thQ:	0.2	3.7	6.4		12.2	1.2	1.2		1.6	7.5	7.5		4.2	8.0	14.2	
90th%Factor:	1.80	1.76	1.73		1.67	1.78	1.78		1.78	1.71	1.71		1.75	1.71	1.65	
HCM2k90thQ:	0.3	4.2	7.0		13.3	1.4	1.4		1.7	8.3	8.3		4.7	8.8	15.5	
95th%Factor:	2.09	2.03	1.98		1.88	2.07	2.07		2.07	1.96	1.96		2.02	1.95	1.86	
HCM2k95thQ:	0.3	4.8	8.1		15.1	1.6	1.6		2.0	9.5	9.5		5.4	10.1	17.4	
98th%Factor:	2.69	2.53	2.43		2.24	2.64	2.64		2.63	2.39	2.39		2.51	2.37	2.19	
HCM2k98thQ:	0.4	6.0	9.9		17.9	2.0	2.0		2.6	11.6	11.6		6.8	12.3	20.5	

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 West Ln & West Ln Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.873
Loss Time (sec):	12	Average Delay (sec/veh):	29.3
Optimal Cycle:	98	Level Of Service:	C

Street Name:	West Lane							West Lane Frontage Road					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R	
Control:	Protected			Protected			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	1 0	3	1 0	1 0	3	1 0	1 0	0	1 0	1 0	0	1 0	
Volume Module:	PM Pk Hr												
Base Vol:	312	2215	80	16	1806	26	62	39	256	99	25	10	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Initial Bse:	312	2215	80	16	1806	26	62	39	256	99	25	10	
Added Vol:	0	166	0	0	146	0	0	0	0	0	0	0	
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	
Initial Fut:	312	2381	80	16	1952	26	62	39	256	99	25	10	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
PHF Volume:	339	2588	87	17	2122	28	67	42	278	108	27	11	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	339	2588	87	17	2122	28	67	42	278	108	27	11	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
FinalVolume:	339	2588	87	17	2122	28	67	42	278	108	27	11	
Saturation Flow Module:													
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Adjustment:	0.93	0.89	0.89	0.93	0.89	0.89	0.93	0.85	0.85	0.93	0.94	0.94	
Lanes:	1.00	3.87	0.13	1.00	3.95	0.05	1.00	0.13	0.87	1.00	0.71	0.29	
Final Sat.:	1769	6525	219	1769	6675	89	1769	214	1406	1769	1273	509	
Capacity Analysis Module:													
Vol/Sat:	0.19	0.40	0.40	0.01	0.32	0.32	0.04	0.20	0.20	0.06	0.02	0.02	
Crit Moves:	****				****			****		****			
Green/Cycle:	0.22	0.57	0.57	0.01	0.36	0.36	0.19	0.23	0.23	0.07	0.11	0.11	
Volume/Cap:	0.87	0.70	0.70	0.70	0.87	0.87	0.20	0.87	0.87	0.87	0.20	0.20	
Delay/Veh:	56.7	15.9	15.9	110.2	33.4	33.4	34.4	57.2	57.2	90.9	41.3	41.3	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
AdjDel/Veh:	56.7	15.9	15.9	110.2	33.4	33.4	34.4	57.2	57.2	90.9	41.3	41.3	
LOS by Move:	E	B	B	F	C	C	C	E	E	F	D	D	
HCM2k95thQ:	454	503	503	80	827	827	88	562	562	279	61	61	

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0	3	1 0	1 0	3	1 0	1 0	0	1 0	1 0	0	1 0
Lane Group:	L	RT	RT	L	RT	RT	L	RT	RT	L	RT	RT
#LnsInGrps:	1	4	4	1	4	4	1	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:		8			8			8			8	
% Hev Veh:		2			2			2			2	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:		Include			Include			Include			Include	
% RT Prtct:		0			0			0			0	
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	0.87	0.87	xxxx	0.96	0.96
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.98	0.93	0.98	0.98	0.93	0.85	0.85	0.93	0.94	0.94
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.93	0.89	0.89	0.93	0.89	0.89	0.93	0.85	0.85	0.93	0.94	0.94
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.22	0.57	0.57	0.01	0.36	0.36	0.19	0.23	0.23	0.07	0.11	0.11
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.72	0.72	1.00	0.96	0.96	0.93	0.98	0.98	1.00	0.97	0.97
Q1:	9.0	10.4	10.4	0.5	14.7	14.7	1.5	8.4	8.4	3.0	0.9	0.9
UpstreamVC:	0.88	0.88	0.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.35	0.35	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.14	0.26	0.26	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.9	0.6	0.6	1.1	4.8	4.8	0.2	4.1	4.1	2.8	0.2	0.2
HCM2KQueue:	9.8	11.0	11.0	1.6	19.4	19.4	1.7	12.5	12.5	5.8	1.2	1.2
70th%Factor:	1.18	1.18	1.18	1.20	1.16	1.16	1.20	1.17	1.17	1.19	1.20	1.20
HCM2k70thQ:	11.6	13.0	13.0	1.9	22.6	22.6	2.1	14.7	14.7	6.8	1.4	1.4
85th%Factor:	1.52	1.51	1.51	1.58	1.46	1.46	1.58	1.50	1.50	1.55	1.59	1.59
HCM2k85thQ:	14.9	16.6	16.6	2.5	28.3	28.3	2.7	18.7	18.7	8.9	1.9	1.9
90th%Factor:	1.64	1.63	1.63	1.77	1.55	1.55	1.77	1.61	1.61	1.70	1.78	1.78
HCM2k90thQ:	16.1	18.0	18.0	2.8	30.1	30.1	3.0	20.2	20.2	9.8	2.1	2.1
95th%Factor:	1.85	1.83	1.83	2.05	1.70	1.70	2.05	1.80	1.80	1.94	2.06	2.06
HCM2k95thQ:	18.1	20.1	20.1	3.2	33.1	33.1	3.5	22.5	22.5	11.2	2.4	2.4
98th%Factor:	2.17	2.13	2.13	2.59	1.92	1.92	2.58	2.08	2.08	2.34	2.61	2.61
HCM2k98thQ:	21.3	23.5	23.5	4.0	37.4	37.4	4.4	26.0	26.0	13.5	3.1	3.1

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 West Lane & Knickerbocker Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.884
Loss Time (sec): 12 Average Delay (sec/veh): 33.7
Optimal Cycle: 103 Level Of Service: C

Street Name:	West Lane						Knickerbocker Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3	1 0	1 0	3	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:	PM Pk Hr											
Base Vol:	198	2487	59	111	2046	158	253	103	110	83	110	80
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	198	2487	59	111	2046	158	253	103	110	83	110	80
Added Vol:	0	166	0	0	146	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	198	2653	59	111	2192	158	253	103	110	83	110	80
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	215	2884	64	121	2383	172	275	112	120	90	120	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	215	2884	64	121	2383	172	275	112	120	90	120	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	215	2884	64	121	2383	172	275	112	120	90	120	87
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.88	0.88	0.93	0.90	0.90	0.93	0.92	0.92
Lanes:	1.00	3.91	0.09	1.00	3.73	0.27	1.00	0.48	0.52	1.00	0.58	0.42
Final Sat.:	1769	6610	147	1769	6259	451	1769	831	888	1769	1010	735
Capacity Analysis Module:												
Vol/Sat:	0.12	0.44	0.44	0.07	0.38	0.38	0.16	0.13	0.13	0.05	0.12	0.12
Crit Moves:		****		****			****				****	
Green/Cycle:	0.14	0.49	0.49	0.08	0.43	0.43	0.18	0.22	0.22	0.09	0.13	0.13
Volume/Cap:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.60	0.60	0.60	0.88	0.88
Delay/Veh:	71.0	25.9	25.9	90.1	29.5	29.5	64.8	37.4	37.4	50.7	72.9	72.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	71.0	25.9	25.9	90.1	29.5	29.5	64.8	37.4	37.4	50.7	72.9	72.9
LOS by Move:	E	C	C	F	C	C	E	D	D	D	E	E
HCM2k95thQ:	290	807	807	189	786	786	519	329	329	182	430	430

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 3	1 0		1	0 3	1 0		1	0 0	1 0		1	0 0	1 0	
Lane Group:	L	RT	RT		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	4	4		1	4	4		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	1.00	1.00		xxxx	0.99	0.99		xxxx	0.92	0.92		xxxx	0.94	0.94	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.98		0.93	0.97	0.97		0.93	0.90	0.90		0.93	0.92	0.92	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	0.91		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.89		0.93	0.88	0.88		0.93	0.90	0.90		0.93	0.92	0.92	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.14	0.49	0.49		0.08	0.43	0.43		0.18	0.22	0.22		0.09	0.13	0.13	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.91	0.91		1.00	0.94	0.94		0.99	0.95	0.95		0.99	0.99	0.99	
Q1:	5.8	18.4	18.4		3.3	16.8	16.8		7.4	5.5	5.5		2.4	5.6	5.6	
UpstreamVC:	1.25	1.25	1.25		0.87	0.87	0.87		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.09	0.09	0.09		0.37	0.37	0.37		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	0.03	0.06	0.06		0.08	0.24	0.24		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.2	0.5	0.5		0.5	1.5	1.5		4.0	1.4	1.4		1.3	3.7	3.7	
HCM2KQueue:	6.0	18.9	18.9		3.8	18.3	18.3		11.4	6.9	6.9		3.7	9.3	9.3	
70th%Factor:	1.19	1.16	1.16		1.19	1.16	1.16		1.18	1.18	1.18		1.19	1.18	1.18	
HCM2k70thQ:	7.1	21.9	21.9		4.5	21.3	21.3		13.4	8.2	8.2		4.4	10.9	10.9	
85th%Factor:	1.55	1.46	1.46		1.56	1.46	1.46		1.51	1.54	1.54		1.57	1.52	1.52	
HCM2k85thQ:	9.3	27.6	27.6		6.0	26.8	26.8		17.2	10.6	10.6		5.7	14.1	14.1	
90th%Factor:	1.70	1.56	1.56		1.73	1.56	1.56		1.63	1.68	1.68		1.73	1.65	1.65	
HCM2k90thQ:	10.2	29.4	29.4		6.6	28.6	28.6		18.6	11.6	11.6		6.4	15.3	15.3	
95th%Factor:	1.93	1.71	1.71		1.99	1.72	1.72		1.82	1.91	1.91		1.99	1.86	1.86	
HCM2k95thQ:	11.6	32.3	32.3		7.6	31.4	31.4		20.7	13.2	13.2		7.3	17.2	17.2	
98th%Factor:	2.33	1.93	1.93		2.45	1.94	1.94		2.12	2.29	2.29		2.45	2.19	2.19	
HCM2k98thQ:	14.0	36.5	36.5		9.3	35.6	35.6		24.1	15.8	15.8		9.0	20.3	20.3	

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	1.249
Loss Time (sec):	12	Average Delay (sec/veh):	93.7
Optimal Cycle:	180	Level Of Service:	F

Street Name:	West Lane								Hammer Lane							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	4	0	1	2	0	4	0	1
Volume Module:	PM Pk Hr															
Base Vol:	179	1848	463		809	1310	132		244	1056	99		618	1079	644	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	179	1848	463		809	1310	132		244	1056	99		618	1079	644	
Added Vol:	0	166	0		0	146	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	179	2014	463		809	1456	132		244	1056	99		618	1079	644	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	195	2189	503		879	1583	143		265	1148	108		672	1173	700	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	195	2189	503		879	1583	143		265	1148	108		672	1173	700	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	195	2189	503		879	1583	143		265	1148	108		672	1173	700	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Lanes:	2.00	4.00	1.00		2.00	4.00	1.00		2.00	4.00	1.00		2.00	4.00	1.00	
Final Sat.:	3432	6778	1583		3432	6778	1583		3432	6778	1583		3432	6778	1583	
Capacity Analysis Module:																
Vol/Sat:	0.06	0.32	0.32		0.26	0.23	0.09		0.08	0.17	0.07		0.20	0.17	0.44	
Crit Moves:		****			****				****						****	
Green/Cycle:	0.09	0.26	0.26		0.21	0.37	0.37		0.06	0.19	0.19		0.22	0.35	0.35	
Volume/Cap:	0.63	1.25	1.23		1.25	0.63	0.24		1.25	0.88	0.35		0.88	0.49	1.25	
Delay/Veh:	47.8	154	160.0		163.3	26.1	21.8		191.7	46.2	35.6		48.8	25.4	158.5	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	47.8	154	160.0		163.3	26.1	21.8		191.7	46.2	35.6		48.8	25.4	158.5	
LOS by Move:	D	F	F		F	C	C		F	D	D		D	C	F	
HCM2k95thQ:	201	1410	1200		1014	426	118		460	563	149		436	298	1462	

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	4	0	1	2	0	4	0	1
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	4	1		2	4	1		2	4	1		2	4	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.09	0.26	0.26	0.21	0.37	0.37	0.06	0.19	0.19	0.22	0.35	0.35
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	1.00	1.00	1.00	0.89	0.83	1.00	0.99	0.94	0.98	0.88	1.00
Q1:	2.6	16.7	14.0	12.6	8.8	2.3	3.8	8.4	2.4	9.1	6.1	19.4
UpstreamVC:	0.00	0.00	0.00	0.88	0.88	0.88	0.00	0.00	0.00	1.03	1.03	1.03
UpstreamAdj:	0.00	0.00	0.00	0.35	0.35	0.35	0.00	0.00	0.00	0.09	0.09	0.09
EarlyArrAdj:	1.00	1.00	1.00	0.14	0.21	0.19	1.00	1.00	1.00	0.04	0.05	0.05
Q2:	1.4	18.9	15.7	12.0	0.3	0.1	6.2	4.1	0.5	0.3	0.0	17.7
HCM2KQueue:	4.1	35.6	29.7	24.5	9.2	2.3	10.0	12.5	3.0	9.4	6.2	37.1
70th%Factor:	1.19	1.14	1.15	1.15	1.18	1.19	1.18	1.17	1.19	1.18	1.19	1.14
HCM2k70thQ:	4.8	40.7	34.1	28.3	10.8	2.8	11.7	14.7	3.5	11.1	7.3	42.3
85th%Factor:	1.56	1.39	1.41	1.43	1.52	1.58	1.52	1.50	1.57	1.52	1.54	1.39
HCM2k85thQ:	6.3	49.6	41.9	35.2	13.9	3.7	15.1	18.7	4.7	14.3	9.6	51.5
90th%Factor:	1.73	1.47	1.49	1.52	1.65	1.76	1.64	1.61	1.74	1.65	1.69	1.46
HCM2k90thQ:	7.0	52.3	44.3	37.2	15.1	4.1	16.4	20.2	5.2	15.5	10.5	54.3
95th%Factor:	1.98	1.58	1.62	1.65	1.86	2.03	1.84	1.80	2.01	1.86	1.93	1.58
HCM2k95thQ:	8.0	56.4	48.0	40.6	17.0	4.7	18.4	22.5	6.0	17.5	11.9	58.5
98th%Factor:	2.43	1.76	1.80	1.85	2.19	2.54	2.16	2.08	2.50	2.19	2.32	1.76
HCM2k98thQ:	9.9	62.9	53.5	45.4	20.1	5.9	21.6	26.0	7.4	20.5	14.4	65.2

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec): 100 Critical Vol./Cap.(X): 1.029
Loss Time (sec): 12 Average Delay (sec/veh): 51.7
Optimal Cycle: 180 Level Of Service: D

Street Name:	Hammer Lane						Holman Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 2	1 0	2	0 3	0 1	2	0 3	1 0	2	0 3	1 0
Volume Module:	PM Pk Hr											
Base Vol:	530	678	148	211	581	321	533	2003	319	210	2004	149
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	530	678	148	211	581	321	533	2003	319	210	2004	149
Added Vol:	0	25	0	0	22	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	530	703	148	211	603	321	533	2003	319	210	2004	149
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	576	764	161	229	655	349	579	2177	347	228	2178	162
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	576	764	161	229	655	349	579	2177	347	228	2178	162
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	576	764	161	229	655	349	579	2177	347	228	2178	162
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.87	0.87	0.90	0.89	0.83	0.90	0.87	0.87	0.90	0.88	0.88
Lanes:	2.00	2.48	0.52	2.00	3.00	1.00	2.00	3.45	0.55	2.00	3.72	0.28
Final Sat.:	3432	4090	861	3432	5083	1583	3432	5724	912	3432	6246	464
Capacity Analysis Module:												
Vol/Sat:	0.17	0.19	0.19	0.07	0.13	0.22	0.17	0.38	0.38	0.07	0.35	0.35
Crit Moves:	****					****	****				****	
Green/Cycle:	0.16	0.28	0.28	0.10	0.21	0.21	0.16	0.43	0.43	0.07	0.34	0.34
Volume/Cap:	1.03	0.67	0.67	0.67	0.60	1.03	1.03	0.89	0.89	0.89	1.03	1.03
Delay/Veh:	87.6	33.4	33.4	48.7	36.4	96.0	87.5	30.3	30.3	75.0	60.0	60.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	87.6	33.4	33.4	48.7	36.4	96.0	87.5	30.3	30.3	75.0	60.0	60.0
LOS by Move:	F	C	C	D	D	F	F	C	C	E	E	E
HCM2k95thQ:	656	452	452	174	299	616	504	788	788	301	1140	1140

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	1	0	2	0 3	0	1	2	0 3	1	0	2	0 3	1	0
Lane Group:	L	RT		RT	L	T		R	L	RT		RT	L	RT		RT
#LnsInGrps:	2	3		3	2	3		1	2	4		4	2	4		4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.97	0.97		xxxx	xxxx	0.85		xxxx	0.98	0.98		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.95	0.95		0.93	0.98	0.83		0.93	0.96	0.96		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	0.91		0.97	0.91	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.87	0.87		0.90	0.89	0.83		0.90	0.87	0.87		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.16	0.28	0.28		0.10	0.21	0.21		0.16	0.43	0.43		0.07	0.34	0.34	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.94	0.94		0.99	0.96	1.00		1.00	0.94	0.94		1.00	1.00	1.00	
Q1:	8.2	7.9	7.9		3.1	5.8	9.7		8.3	16.8	16.8		3.2	17.9	17.9	
UpstreamVC:	0.00	0.00	0.00		0.64	0.64	0.64		0.88	0.88	0.88		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.73	0.73	0.73		0.36	0.36	0.36		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		0.19	0.31	0.28		0.13	0.23	0.23		1.00	1.00	1.00	
Q2:	6.6	1.9	1.9		0.4	0.5	4.2		2.8	1.6	1.6		3.0	10.2	10.2	
HCM2KQueue:	14.9	9.8	9.8		3.5	6.2	13.9		11.1	18.4	18.4		6.3	28.0	28.0	
70th%Factor:	1.17	1.18	1.18		1.19	1.19	1.17		1.18	1.16	1.16		1.19	1.15	1.15	
HCM2k70thQ:	17.4	11.5	11.5		4.2	7.4	16.2		13.0	21.4	21.4		7.4	32.2	32.2	
85th%Factor:	1.48	1.52	1.52		1.57	1.54	1.49		1.51	1.46	1.46		1.54	1.42	1.42	
HCM2k85thQ:	22.1	14.8	14.8		5.5	9.6	20.6		16.7	26.9	26.9		9.7	39.8	39.8	
90th%Factor:	1.59	1.65	1.65		1.74	1.69	1.60		1.63	1.56	1.56		1.69	1.50	1.50	
HCM2k90thQ:	23.7	16.1	16.1		6.1	10.5	22.2		18.0	28.6	28.6		10.6	42.0	42.0	
95th%Factor:	1.76	1.85	1.85		1.99	1.92	1.78		1.82	1.72	1.72		1.92	1.63	1.63	
HCM2k95thQ:	26.2	18.1	18.1		7.0	12.0	24.6		20.2	31.5	31.5		12.0	45.6	45.6	
98th%Factor:	2.02	2.17	2.17		2.46	2.32	2.04		2.13	1.94	1.94		2.32	1.82	1.82	
HCM2k98thQ:	30.1	21.2	21.2		8.6	14.4	28.3		23.5	35.7	35.7		14.5	50.9	50.9	

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #45 LtCol Mark Taylor & Ham Ln (S)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.181
Loss Time (sec):	9	Average Delay (sec/veh):	11.5
Optimal Cycle:	22	Level Of Service:	B

Street Name:	Ham Lane (South)						Lt. Col. Mark Taylor Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	0	1	0	0	0	0	0	0	1
	1	0	2	0	0							
Volume Module:	PM Pk Hr											
Base Vol:	2	0	49	0	0	0	0	263	1	42	263	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	0	49	0	0	0	0	263	1	42	263	0
Added Vol:	33	0	0	0	0	0	0	52	22	0	82	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	35	0	49	0	0	0	0	315	23	42	345	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	38	0	53	0	0	0	0	342	25	46	375	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	38	0	53	0	0	0	0	342	25	46	375	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	38	0	53	0	0	0	0	342	25	46	375	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.92	0.92	0.93	0.93	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.86	0.14	1.00	2.00	0.00
Final Sat.:	1769	0	1583	0	0	0	0	3264	238	1769	3538	0
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.03	0.00	0.00	0.00	0.00	0.10	0.10	0.03	0.11	0.00
Crit Moves:			****					****		****		
Green/Cycle:	0.19	0.00	0.19	0.00	0.00	0.00	0.00	0.58	0.58	0.14	0.72	0.00
Volume/Cap:	0.12	0.00	0.18	0.00	0.00	0.00	0.00	0.18	0.18	0.18	0.15	0.00
Delay/Veh:	34.0	0.0	34.6	0.0	0.0	0.0	0.0	9.9	9.9	38.0	4.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.0	0.0	34.6	0.0	0.0	0.0	0.0	9.9	9.9	38.0	4.3	0.0
LOS by Move:	C	A	C	A	A	A	A	A	A	D	A	A
HCM2k95thQ:	49	0	71	0	0	0	0	81	81	55	13	0

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #45 LtCol Mark Taylor & Ham Ln (S)

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																				
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0	1	1	0	1	0	2	0	0
Lane Group:	L		xxxx		R	xxxx		xxxx		xxxx	xxxx		RT		RT	L		T		xxxx
#LnsInGrps:	1		0		1	0		0		0	0		2		2	1		2		0
HCM Ops Input Saturation Adj Module:																				
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12
CrsswalkWid:	8					8					8					8				
% Hev Veh:	2					2					2					2				
Grade:	0%					0%					0%					0%				
Parking/Hr:	No					No					No					No				
Bus Stp/Hr:	0					0					0					0				
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																			
Cnft Ped/Hr:	0					0					0					0				
ExclusiveRT:	Include					Include					Include					Include				
% RT Prtct:	0					0					0					0				
HCM Ops f(lt) Adj Case Module:																				
f(lt) Case:	1	xxxx		xxxx		xxxx	xxxx		xxxx		xxxx	xxxx		xxxx		1	xxxx		xxxx	
HCM Ops Saturation Adj Module:																				
Ln Wid Adj:	1.00	xxxx		1.00		xxxx	xxxx		xxxxx		xxxx	1.00		1.00		1.00	1.00		xxxxx	
Hev Veh Adj:	0.98	xxxx		0.98		xxxx	xxxx		xxxxx		xxxx	0.98		0.98		0.98	0.98		xxxxx	
Grade Adj:	1.00	xxxx		1.00		xxxx	xxxx		xxxxx		xxxx	1.00		1.00		1.00	1.00		xxxxx	
Parking Adj:	xxxx	xxxx		1.00		xxxx	xxxx		xxxxx		xxxx	1.00		1.00		xxxx	1.00		xxxxx	
Bus Stp Adj:	xxxx	xxxx		1.00		xxxx	xxxx		xxxxx		xxxx	1.00		1.00		xxxx	1.00		xxxxx	
Area Adj:	1.00	xxxx		1.00		xxxx	xxxx		xxxxx		xxxx	1.00		1.00		1.00	1.00		xxxxx	
RT Adj:	xxxx	xxxx		0.85		xxxx	xxxx		xxxxx		xxxx	0.99		0.99		xxxx	xxxx		xxxxx	
LT Adj:	0.95	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		0.95	xxxx		xxxxx	
PedBike Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
HCM Sat Adj:	0.93	1.00		0.83		1.00	1.00		1.00		1.00	0.97		0.97		0.93	0.98		1.00	
Usr Sat Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Sat Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	0.95		0.95		1.00	0.95		1.00	
Fnl Sat Adj:	0.93	1.00		0.83		1.00	1.00		1.00		1.00	0.92		0.92		0.93	0.93		1.00	
Delay Adjustment Factor Module:																				
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																			
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >																			
DelAdjFctr:	1.00	0.00		1.00		0.00	0.00		0.00		0.00	1.00		1.00		1.00	1.00		0.00	

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #45 LtCol Mark Taylor & Ham Ln (S)

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.19	0.00	0.19	0.00	0.00	0.00	0.00	0.58	0.58	0.14	0.72	0.00
ArrivalType:		4			4			4			4	
ProgFactor:	0.93	1.00	0.93	1.00	1.00	1.00	1.00	0.56	0.56	0.95	0.13	1.00
Q1:	0.8	0.0	1.2	0.0	0.0	0.0	0.0	1.4	1.4	1.1	0.2	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	1.17	1.17	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.09	0.09	0.00
EarlyArrAdj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.77	0.77	0.03	0.08	0.00
Q2:	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0
HCM2KQueue:	0.9	0.0	1.4	0.0	0.0	0.0	0.0	1.6	1.6	1.1	0.2	0.0
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	1.1	0.0	1.7	0.0	0.0	0.0	0.0	1.9	1.9	1.3	0.3	0.0
85th%Factor:	1.59	1.60	1.59	1.60	1.60	1.60	1.60	1.58	1.58	1.59	1.60	1.60
HCM2k85thQ:	1.5	0.0	2.2	0.0	0.0	0.0	0.0	2.5	2.5	1.7	0.4	0.0
90th%Factor:	1.78	1.80	1.77	1.80	1.80	1.80	1.80	1.77	1.77	1.78	1.80	1.80
HCM2k90thQ:	1.7	0.0	2.5	0.0	0.0	0.0	0.0	2.8	2.8	1.9	0.4	0.0
95th%Factor:	2.07	2.10	2.06	2.10	2.10	2.10	2.10	2.05	2.05	2.07	2.09	2.10
HCM2k95thQ:	2.0	0.0	2.8	0.0	0.0	0.0	0.0	3.2	3.2	2.2	0.5	0.0
98th%Factor:	2.63	2.70	2.60	2.70	2.70	2.70	2.70	2.59	2.59	2.62	2.68	2.70
HCM2k98thQ:	2.5	0.0	3.6	0.0	0.0	0.0	0.0	4.1	4.1	2.8	0.6	0.0

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #51 Eight Mile & Commercial DW #1

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[13.5]

Street Name:	Commercial Site Driveway #1						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	0	4	0	1	0	0	4	0	0
Volume Module:	PM Pk Hr																				
Base Vol:	0	0	0	0	0	0	0	2010	0	0	2004	0									
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00									
Initial Bse:	0	0	0	0	0	0	0	2010	0	0	2004	0									
Added Vol:	0	0	0	0	0	0	0	167	21	0	177	0									
Pass-By Vol:	0	0	31	0	0	0	0	-30	30	0	0	0									
Initial Fut:	0	0	31	0	0	0	0	2147	51	0	2181	0									
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00									
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92									
PHF Volume:	0	0	34	0	0	0	0	2334	55	0	2371	0									
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0									
FinalVolume:	0	0	34	0	0	0	0	2334	55	0	2371	0									
Critical Gap Module:																					
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx									
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx									
Capacity Module:																					
Cnflict Vol:	xxxx	xxxx	583	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx									
Potent Cap.:	xxxx	xxxx	455	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx									
Move Cap.:	xxxx	xxxx	455	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx									
Volume/Cap:	xxxx	xxxx	0.07	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx									
Level Of Service Module:																					
2Way95thQ:	xxxx	xxxx	6.0	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx									
Control Del:	xxxxx	xxxx	13.5	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx									
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*									
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT									
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx									
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx									
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx									
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*									
ApproachDel:	13.5			xxxxxx			xxxxxx			xxxxxx											
ApproachLOS:	B			*			*			*											

Note: Queue reported is the distance per lane in feet.

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--------------------------------------------------------------------------------
                    Cumul With Bridge Alternative PM Pk Hr
--------------------------------------------------------------------------------
                  Level Of Service Detailed Computation Report
                          2000 HCM Unsignalized Method
                            Future Volume Alternative
********************************************************************************
Intersection #51 Eight Mile & Commercial DW #1
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
-----------|----------------|----------------|----------------|----------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                                        #17              #22
Dist(miles):                                       0.250            0.250
Speed (mph):                                        1.00             1.00
SignalIndex:                                       #8               #53
Cycle Time:                                          100 secs         100 secs
InitVolume:                                     190  1834         94  2086
Saturation:                                    3432  5073       1769  6778
ArrivalType:                                      4     4          4     4
G/C:                                           0.08  0.36       0.10  0.81
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                                            0.111 0.474      0.137 1.076
gq1:                                           4.92 19.03       4.59 -2.34
gq2:                                           0.39 17.70       0.35 -1.63
gq:                                            5.32 35.53       4.94 -3.97
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                                             0.350            0.350
beta:                                              0.741            0.741
ta (secs):                                        900.000           900.000
F:                                                  0.004            0.004
f:                                            1.000 1.000      1.000 1.000
vcmax:                                           77   715         37  -116
vcg:                                             79   715         39   764
vcmin:                                         3000  3000       3000  3000
tp:                                             0.0   0.0        0.0   0.0
p:                                                 0.000            0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:                                       0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:2926  4704   583 2954  4760   593    0 xxxxx xxxxx    0 xxxxx xxxxx
AdjCnflVol: 2926  4704   583 2954  4760   593    0 xxxxx xxxxx    0 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
ConflictVol:2926  4704   583 2954  4760   593    0 xxxxx xxxxx    0 xxxxx xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap:   12     1   455    6     1   449 1622 xxxxx xxxxx 1622 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
Potent Cap.:  12     1   455    6     1   449 1622 xxxxx xxxxx 1622 xxxxx xxxxx
```



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--------------------------------------------------------------------------------
                    Cumul With Bridge Alternative PM Pk Hr
--------------------------------------------------------------------------------
                        Level Of Service Computation Report
              2000 HCM Unsignalized Method (Future Volume Alternative)
********************************************************************************
Intersection #52 Eight Mile & Commercial DW #2
********************************************************************************
Average Delay (sec/veh):      0.2       Worst Case Level Of Service: B[ 14.8]
********************************************************************************
Street Name:   Commercial Site Driveway #2             Eight Mile Road
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
-----------|----------------||----------------||----------------||----------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  0    0  0  3  1  0    0  0  4  0  0
-----------|----------------||----------------||----------------||----------------|
Volume Module:PM Pk Hr
Base Vol:       0    0     0     0    0     0     0 2010     0     0 2004     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0     0    0     0     0 2010     0     0 2004     0
Added Vol:      0    0    37     0    0     0     0  146    21     0  177     0
Pass-By Vol:    0    0    31     0    0     0     0  -30    30     0    0     0
Initial Fut:    0    0    68     0    0     0     0 2126    51     0 2181     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0    74     0    0     0     0 2311    55     0 2371     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0    74     0    0     0     0 2311    55     0 2371     0
-----------|----------------||----------------||----------------||----------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
-----------|----------------||----------------||----------------||----------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   605  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx   440  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx   440  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.17  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
-----------|----------------||----------------||----------------||----------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx  14.9  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx  14.8 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     B     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      14.8           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
********************************************************************************
Note: Queue reported is the distance per lane in feet.
********************************************************************************
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Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #52 Eight Mile & Commercial DW #2

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:							#17			#22		
Dist(miles):							0.250			0.250		
Speed (mph):							1.00			1.00		
SignalIndex:							#8			#53		
Cycle Time:							100 secs			100 secs		
InitVolume:				190	1834		94	2086				
Saturation:				3432	5073		1769	6778				
ArrivalType:				4	4		4	4				
G/C:				0.08	0.36		0.10	0.81				
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:				0.111	0.474		0.137	1.076				
gq1:				4.92	19.03		4.59	-2.34				
gq2:				0.39	17.70		0.35	-1.63				
gq:				5.32	35.53		4.94	-3.97				
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:							0.350			0.350		
beta:							0.741			0.741		
ta (secs):							900.000			900.000		
F:							0.004			0.004		
f:				1.000	1.000		1.000	1.000				
vcmax:				77	715		37	-116				
vcg:				79	715		39	764				
vcmin:				3000	3000		3000	3000				
tp:				0.0	0.0		0.0	0.0				
p:							0.000			0.000		
*** Computation 3: Platoon Event Periods												
pdom/psubo:							0.000/0.000/Unconstrained					
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	2931	4709	605	2948	4737	593	0	xxxxx	xxxxx	0	xxxxx	xxxxx
AdjCnflVol:	2931	4709	605	2948	4737	593	0	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
ConflictVol:	2931	4709	605	2948	4737	593	0	xxxxx	xxxxx	0	xxxxx	xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	12	1	440	6	1	449	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
Potent Cap.:	12	1	440	6	1	449	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #53 Eight Mile Road & Road C

Cycle (sec):	100	Critical Vol./Cap.(X):	0.562
Loss Time (sec):	9	Average Delay (sec/veh):	10.0
Optimal Cycle:	38	Level Of Service:	B

Street Name:	Road C						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0
Volume Module:	PM Pk Hr											
Base Vol:	0	0	0	0	0	0	0	2010	0	0	2004	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	2010	0	0	2004	0
Added Vol:	94	0	74	0	0	0	0	120	63	183	82	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	94	0	74	0	0	0	0	2130	63	183	2086	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	102	0	80	0	0	0	0	2315	68	199	2267	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	102	0	80	0	0	0	0	2315	68	199	2267	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	102	0	80	0	0	0	0	2315	68	199	2267	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.89	0.83	0.93	0.89	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	4.00	1.00	1.00	4.00	0.00
Final Sat.:	1769	0	1583	0	0	0	0	6778	1583	1769	6778	0
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.05	0.00	0.00	0.00	0.00	0.34	0.04	0.11	0.33	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.10	0.00	0.10	0.00	0.00	0.00	0.00	0.61	0.61	0.20	0.81	0.00
Volume/Cap:	0.56	0.00	0.49	0.00	0.00	0.00	0.00	0.56	0.07	0.56	0.41	0.00
Delay/Veh:	46.7	0.0	44.8	0.0	0.0	0.0	0.0	11.9	8.1	38.1	2.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.7	0.0	44.8	0.0	0.0	0.0	0.0	11.9	8.1	38.1	2.8	0.0
LOS by Move:	D	A	D	A	A	A	A	B	A	D	A	A
HCM2k95thQ:	189	0	149	0	0	0	0	301	20	288	37	0

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #53 Eight Mile Road & Road C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																				
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0	4	0	1	1	0	4	0	0
Lane Group:	L		xxxx		R	xxxx		xxxx		xxxx	xxxx		T		R	L		T		xxxx
#LnsInGrps:	1		0		1	0		0		0	0		4		1	1		4		0
HCM Ops Input Saturation Adj Module:																				
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12
CrsswalkWid:			8					8					8					8		
% Hev Veh:			2					2					2					2		
Grade:			0%					0%					0%					0%		
Parking/Hr:			No					No					No					No		
Bus Stp/Hr:			0					0					0					0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																			
Cnft Ped/Hr:			0					0					0					0		
ExclusiveRT:			Include					Include					Include					Include		
% RT Prtct:			0					0					0					0		
HCM Ops f(lt) Adj Case Module:																				
f(lt) Case:	1	xxxx		xxxx		xxxx	xxxx		xxxx		xxxx	xxxx		xxxx		1	xxxx		xxxx	
HCM Ops Saturation Adj Module:																				
Ln Wid Adj:	1.00	xxxx		1.00		xxxx	xxxx		xxxxx		xxxx	1.00		1.00		1.00	1.00		xxxxx	
Hev Veh Adj:	0.98	xxxx		0.98		xxxx	xxxx		xxxxx		xxxx	0.98		0.98		0.98	0.98		xxxxx	
Grade Adj:	1.00	xxxx		1.00		xxxx	xxxx		xxxxx		xxxx	1.00		1.00		1.00	1.00		xxxxx	
Parking Adj:	xxxx	xxxx		1.00		xxxx	xxxx		xxxxx		xxxx	xxxx		1.00		xxxx	1.00		xxxxx	
Bus Stp Adj:	xxxx	xxxx		1.00		xxxx	xxxx		xxxxx		xxxx	xxxx		1.00		xxxx	1.00		xxxxx	
Area Adj:	1.00	xxxx		1.00		xxxx	xxxx		xxxxx		xxxx	1.00		1.00		1.00	1.00		xxxxx	
RT Adj:	xxxx	xxxx		0.85		xxxx	xxxx		xxxxx		xxxx	xxxx		0.85		xxxx	xxxx		xxxxx	
LT Adj:	0.95	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		0.95	xxxx		xxxxx	
PedBike Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
HCM Sat Adj:	0.93	1.00		0.83		1.00	1.00		1.00		1.00	0.98		0.83		0.93	0.98		1.00	
Usr Sat Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Sat Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	0.91		1.00		1.00	0.91		1.00	
Fnl Sat Adj:	0.93	1.00		0.83		1.00	1.00		1.00		1.00	0.89		0.83		0.93	0.89		1.00	
Delay Adjustment Factor Module:																				
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																			
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >																			
DelAdjFctr:	1.00	0.00		1.00		0.00	0.00		0.00		1.00	1.00		1.00		1.00	1.00		0.00	

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #53 Eight Mile Road & Road C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Green/Cycle:	0.10	0.00		0.10		0.00	0.00		0.00		0.00	0.61		0.61		0.20	0.81		0.00	
ArrivalType:			4					4					4					4		
ProgFactor:	0.98	1.00		0.98		1.00	1.00		1.00		1.00	0.59		0.49		0.96	0.00		1.00	
Q1:		2.7	0.0		2.1		0.0	0.0		0.0		0.0	6.2		0.4	4.8		0.0		0.0
UpstreamVC:	0.00	0.00		0.00		0.00	0.00		0.00		0.00	1.11		1.11		0.00	0.00		0.00	
UpstreamAdj:	0.00	0.00		0.00		0.00	0.00		0.00		0.00	0.09		0.09		0.00	0.00		0.00	
EarlyArrAdj:	1.00	0.00		1.00		0.00	0.00		0.00		0.00	0.07		0.06		1.00	1.00		0.00	
Q2:		1.2	0.0		0.9		0.0	0.0		0.0		0.0	0.1		0.0	1.2		0.7		0.0
HCM2KQueue:		3.8	0.0		3.0		0.0	0.0		0.0		0.0	6.3		0.4	6.0		0.7		0.0
70th%Factor:	1.19	1.20		1.19		1.20	1.20		1.20		1.20	1.19		1.20		1.19	1.20		1.20	
HCM2k70thQ:		4.5	0.0		3.5		0.0	0.0		0.0		0.0	7.4		0.5	7.1		0.8		0.0
85th%Factor:	1.56	1.60		1.57		1.60	1.60		1.60		1.60	1.54		1.60		1.55	1.59		1.60	
HCM2k85thQ:		6.0	0.0		4.7		0.0	0.0		0.0		0.0	9.7		0.6	9.2		1.1		0.0
90th%Factor:	1.73	1.80		1.74		1.80	1.80		1.80		1.80	1.69		1.79		1.70	1.79		1.80	
HCM2k90thQ:		6.6	0.0		5.2		0.0	0.0		0.0		0.0	10.6		0.7	10.1		1.3		0.0
95th%Factor:	1.99	2.10		2.01		2.10	2.10		2.10		2.10	1.92		2.09		1.93	2.08		2.10	
HCM2k95thQ:		7.6	0.0		6.0		0.0	0.0		0.0		0.0	12.1		0.8	11.5		1.5		0.0
98th%Factor:	2.45	2.70		2.50		2.70	2.70		2.70		2.70	2.32		2.67		2.33	2.65		2.70	
HCM2k98thQ:		9.3	0.0		7.4		0.0	0.0		0.0		0.0	14.5		1.0	13.9		1.9		0.0

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #54 West Lane & Commercial DW #3

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[13.3]

Street Name:	West Lane												Commercial Site Driveway #3											
Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Rights:	Include						Include						Include						Include					
Lanes:	0	0	3	1	0		0	0	2	0	0		0	0	0	0	0		0	0	0	0	1	
Volume Module:PM Pk Hr																								
Base Vol:	0	1760		0		0	1444		0		0		0		0		0		0		0		0	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Initial Bse:	0	1760		0		0	1444		0		0		0		0		0		0		0		0	
Added Vol:	0	91		29		0	117		0		0		0		0		0		0		0		26	
Pass-By Vol:	0	-30		30		0	0		0		0		0		0		0		0		0		31	
Initial Fut:	0	1821		59		0	1561		0		0		0		0		0		0		0		57	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
PHF Adj:	0.92	0.92		0.92		0.92	0.92		0.92		0.92		0.92		0.92		0.92		0.92		0.92		0.92	
PHF Volume:	0	1979		64		0	1697		0		0		0		0		0		0		0		62	
Reduct Vol:	0	0		0		0	0		0		0		0		0		0		0		0		0	
FinalVolume:	0	1979		64		0	1697		0		0		0		0		0		0		0		62	
Critical Gap Module:																								
Critical Gp:xxxxx	xxxx	xxxxx		xxxxx		xxxx	xxxxx		xxxxx		xxxx	xxxxx		xxxxx		xxxx		6.9						
FollowUpTim:xxxxx	xxxx	xxxxx		xxxxx		xxxx	xxxxx		xxxxx		xxxx	xxxxx		xxxxx		xxxx		3.3						
Capacity Module:																								
Cnflict Vol:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx		527								
Potent Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx		496								
Move Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx		496								
Volume/Cap:	xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		xxxx	xxxx		0.12								
Level Of Service Module:																								
2Way95thQ:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx		10.6								
Control Del:xxxxx	xxxx	xxxxx		xxxxx		xxxx	xxxxx		xxxxx		xxxx	xxxxx		xxxxx		xxxx		13.3						
LOS by Move:	*	*		*		*	*		*		*	*		*		*		B						
Movement:	LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx									
SharedQueue:xxxxx	xxxx	xxxxx		xxxxx		xxxx	xxxxx		xxxxx		xxxx	xxxxx		xxxxx		xxxx	xxxxx							
Shrd ConDel:xxxxx	xxxx	xxxxx		xxxxx		xxxx	xxxxx		xxxxx		xxxx	xxxxx		xxxxx		xxxx	xxxxx							
Shared LOS:	*	*		*		*	*		*		*	*		*		*		*						
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					13.3								
ApproachLOS:	*					*					*					B								

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #54 West Lane & Commercial DW #3

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HevVeh:	2%						2%						2%						2%					
Grade:	0%						0%						0%						0%					
Peds/Hour:	0						0						0						0					
Pedestrian Walk Speed: 4.00 feet/sec																								
LaneWidth:	12 feet						12 feet						12 feet						12 feet					
Time Period: 0.25 hour																								
Upstream Signals:																								
Link Index:	#99																							
Dist(miles):	0.250																							
Speed (mph):	1.00																							
SignalIndex:	#8																							
Cycle Time:	100 secs																							
InitVolume:	261	767																						
Saturation:	3432	3538																						
ArrivalType:	4	4																						
G/C:	0.07	0.24																						
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection																								
P:	0.100	0.313																						
gq1:	6.85	14.89																						
gq2:	0.77	6.05																						
gq:	7.48	20.94																						
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons																								
alpha:	0.400																							
beta:	0.714																							
ta (secs):	900.000																							
F:	0.004																							
f:	1.000	1.000																						
vcmax:	98	276																						
vcg:	98	284																						
vcmin:	2000	2000																						
tp:	0.0	0.0																						
p:	0.000																							
*** Computation 3: Platoon Event Periods																								
pdom/psubo:	0.000/0.000/Unconstrained																							
*** Computation 4: Conflicting Flows During Each Unblocked Period																								
InitCnflVol:	0	xxxxx	xxxxx		0	xxxxx	xxxxx	2192	3740		848	2860	3708	527										
AdjCnflVol:	0	xxxxx	xxxxx		0	xxxxx	xxxxx	2192	3740		848	2860	3708	527										
UpstreamAdj:1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000													
ConflictVol:	0	xxxxx	xxxxx		0	xxxxx	xxxxx	2192	3740		848	2860	3708	527										
*** Computation 5: Capacity for Subject Movement During Unblocked Period																								
InitPotCap:	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx	25	4	305	13	4	496												
UpstreamAdj:1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000													
Potent Cap.:	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx	25	4	305	13	4	496												

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #55 West Lane & Commercial DW #4

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[12.4]

Street Name:	West Lane								Commercial Site Driveway #4							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1
Volume Module:	PM Pk Hr																			
Base Vol:	0	1760		0	0	1444		0	0		0	0		0	0		0	0		0
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Initial Bse:	0	1760		0	0	1444		0	0		0	0		0	0		0	0		0
Added Vol:	0	111		29	0	117		0	0		0	0		0	0		0	0		8
PasserByVol:	0	0		0	0	0		0	0		0	0		0	0		0	0		0
Initial Fut:	0	1871		29	0	1561		0	0		0	0		0	0		0	0		8
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
PHF Adj:	0.92	0.92		0.92	0.92	0.92		0.92	0.92		0.92	0.92		0.92	0.92		0.92	0.92		0.92
PHF Volume:	0	2034		32	0	1697		0	0		0	0		0	0		0	0		9
Reduct Vol:	0	0		0	0	0		0	0		0	0		0	0		0	0		0
FinalVolume:	0	2034		32	0	1697		0	0		0	0		0	0		0	0		9

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3

Capacity Module:

Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	524
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	498
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	498
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.02

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	1.3
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	12.4
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	B
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			12.4		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #55 West Lane & Commercial DW #4

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HevVeh:					2%				2%				2%				2%			
Grade:					0%				0%				0%				0%			
Peds/Hour:					0				0				0				0			

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet								12 feet				12 feet				12 feet			

Time Period: 0.25 hour

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #56 West Lane & Road A

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[13.0]

Street Name:	West Lane												Road A											
Approach:	North Bound				South Bound				East Bound				West Bound											
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign											
Rights:	Include				Include				Include				Include											
Lanes:	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1				
Volume Module:	PM Pk Hr																							
Base Vol:	0	1760		0	0	1444		0	0		0	0		0	0		0	0		0	0		0	0	
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Initial Bse:	0	1760		0	0	1444		0	0		0	0		0	0		0	0		0	0		0	0	
Added Vol:	0	109		65	0	117		0	0		0	0		0	0		0	0		0	0		0	0	31
PasserByVol:	0	0		0	0	0		0	0		0	0		0	0		0	0		0	0		0	0	
Initial Fut:	0	1869		65	0	1561		0	0		0	0		0	0		0	0		0	0		0	0	31
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
PHF Adj:	0.92	0.92		0.92	0.92	0.92		0.92	0.92		0.92	0.92		0.92	0.92		0.92	0.92		0.92	0.92		0.92	0.92	
PHF Volume:	0	2032		71	0	1697		0	0		0	0		0	0		0	0		0	0		0	0	34
Reduct Vol:	0	0		0	0	0		0	0		0	0		0	0		0	0		0	0		0	0	
FinalVolume:	0	2032		71	0	1697		0	0		0	0		0	0		0	0		0	0		0	0	34
Critical Gap Module:																								
Critical Gp:	xxxxx	xxxx		xxxxx	xxxxx	xxxx		xxxxx	xxxxx	xxxx		xxxxx	xxxxx	xxxx		6.9								
FollowUpTim:	xxxxx	xxxx		xxxxx	xxxxx	xxxx		xxxxx	xxxxx	xxxx		xxxxx	xxxxx	xxxx		3.3								
Capacity Module:																								
Cnflict Vol:	xxxx	xxxx		xxxxx	xxxx	xxxx		xxxxx	xxxx	xxxx		xxxxx	xxxx	xxxx		543								
Potent Cap.:	xxxx	xxxx		xxxxx	xxxx	xxxx		xxxxx	xxxx	xxxx		xxxxx	xxxx	xxxx		484								
Move Cap.:	xxxx	xxxx		xxxxx	xxxx	xxxx		xxxxx	xxxx	xxxx		xxxxx	xxxx	xxxx		484								
Volume/Cap:	xxxx	xxxx		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		0.07								
Level Of Service Module:																								
2Way95thQ:	xxxx	xxxx		xxxxx	xxxx	xxxx		xxxxx	xxxx	xxxx		xxxxx	xxxx	xxxx		5.6								
Control Del:	xxxxx	xxxx		xxxxx	xxxxx	xxxx		xxxxx	xxxxx	xxxx		xxxxx	xxxxx	xxxx		13.0								
LOS by Move:	*	*		*	*	*		*	*	*		*	*	*		B								
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT				
Shared Cap.:	xxxx	xxxx		xxxxx	xxxx	xxxx		xxxxx	xxxx	xxxx		xxxxx	xxxx	xxxx		xxxxx								
SharedQueue:	xxxxx	xxxx		xxxxx	xxxxx	xxxx		xxxxx	xxxxx	xxxx		xxxxx	xxxxx	xxxx		xxxxx								
Shrd ConDel:	xxxxx	xxxx		xxxxx	xxxxx	xxxx		xxxxx	xxxxx	xxxx		xxxxx	xxxxx	xxxx		xxxxx								
Shared LOS:	*	*		*	*	*		*	*	*		*	*	*		*								
ApproachDel:	xxxxxx			xxxxxx				xxxxxx				13.0												
ApproachLOS:	*			*				*				B												

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #56 West Lane & Road A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HevVeh:			2%					2%					2%					2%		
Grade:			0%					0%					0%					0%		
Peds/Hour:			0					0					0					0		
Pedestrian Walk Speed: 4.00 feet/sec																				
LaneWidth:			12 feet					12 feet					12 feet					12 feet		
Time Period: 0.25 hour																				
Upstream Signals:																				
Link Index:			#106					#99												
Dist(miles):			0.250					0.250												
Speed (mph):			1.00					1.00												
SignalIndex:			#16					#8												
Cycle Time:			100 secs					100 secs												
InitVolume:	224		1661			261		767												
Saturation:	1769		6206			3432		3538												
ArrivalType:	4		4			4		4												
G/C:	0.19		0.41			0.07		0.24												
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection																				
P:	0.257		0.550			0.100		0.313												
gq1:	9.41		12.05			6.85		14.89												
gq2:	1.91		6.68			0.77		6.05												
gq:	11.32		18.73			7.48		20.94												
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons																				
alpha:			0.350					0.350												
beta:			0.741					0.741												
ta (secs):			900.000					900.000												
F:			0.004					0.004												
f:	1.000		1.000			1.000		1.000												
vcmax:	84		478			108		303												
vcg:	91		637			108		311												
vcmin:	3000		3000			3000		3000												
tp:	0.0		0.0			0.0		0.0												
p:			0.000					0.000												
*** Computation 3: Platoon Event Periods																				
pdom/psubo:			0.000/0.000/Unconstrained																	
*** Computation 4: Conflicting Flows During Each Unblocked Period																				
InitCnflVol:	0	xxxxx	xxxxx		0	xxxxx	xxxxx	2205	3799		424	2491	3764		543					
AdjCnflVol:	0	xxxxx	xxxxx		0	xxxxx	xxxxx	2205	3799		424	2491	3764		543					
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000								
ConflictVol:	0	xxxxx	xxxxx		0	xxxxx	xxxxx	2205	3799		424	2491	3764		543					
*** Computation 5: Capacity for Subject Movement During Unblocked Period																				
InitPotCap:	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx	25	4	578	24	4	484								
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000								
Potent Cap.:	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx	25	4	578	24	4	484								

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #57 Eight Mile & Hi Dens Res DW #1

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: C[15.3]

Street Name: High Density Resid Driveway #1 Eight Mile Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0 1	0	0	0	0 0	0	0	3	1 0	0	0	4	0 0
Volume Module:PM Peak Hour																
Base Vol:	0	0	0		0	0	0		0	2010	0		0	2004	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		0	0	0		0	2010	0		0	2004	0	
Added Vol:	0	0	81		0	0	0		0	190	21		0	203	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	81		0	0	0		0	2200	21		0	2207	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	0	0	88		0	0	0		0	2391	23		0	2399	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	0	88		0	0	0		0	2391	23		0	2399	0	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	6.9		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	3.3		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	609		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	438		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	438		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	0.20		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx	
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	18.6		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	15.3		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	C		*	*	*		*	*	*		*	*	*	
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		*	*	*		*	*	*	
ApproachDel:	15.3				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	C				*				*				*			

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #57 Eight Mile & Hi Dens Res DW #1

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HevVeh:			2%				2%				2%				2%	
Grade:			0%				0%				0%				0%	
Peds/Hour:			0				0				0				0	
Pedestrian Walk Speed: 4.00 feet/sec																
LaneWidth:			12 feet				12 feet				12 feet				12 feet	

Time Period: 0.25 hour

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #58 Eight Mile & Hi Dens Res DW #2

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: C[15.6]

Street Name: High Density Resid Driveway #2 Eight Mile Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0 1	0	0	0	0 0	0	0	3	1 0	0	0	4	0 0
Volume Module:PM Peak Hour																
Base Vol:	0	0	0	0	0	0	0	2010	0	0	2004	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	0	0	0	2010	0	0	2004	0				
Added Vol:	0	0	81	0	0	0	0	251	21	0	203	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	81	0	0	0	0	2261	21	0	2207	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92				
PHF Volume:	0	0	88	0	0	0	0	2458	23	0	2399	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	0	0	88	0	0	0	0	2458	23	0	2399	0				
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	626	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Potent Cap.:	xxxx	xxxx	427	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Move Cap.:	xxxx	xxxx	427	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Volume/Cap:	xxxx	xxxx	0.21	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx				
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	19.1	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Control Del:	xxxxx	xxxx	15.6	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
LOS by Move:	*	*	C	*	*	*	*	*	*	*	*	*				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*				
ApproachDel:	15.6			xxxxxx			xxxxxx			xxxxxx						
ApproachLOS:	C			*			*			*						

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #58 Eight Mile & Hi Dens Res DW #2

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HevVeh:	2%				2%				2%				2%			
Grade:	0%				0%				0%				0%			
Peds/Hour:	0				0				0				0			
Pedestrian Walk Speed: 4.00 feet/sec																
LaneWidth:	12 feet				12 feet				12 feet				12 feet			
Time Period: 0.25 hour																

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #60 Eight Mile & Industrial DW #1

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[12.4]

Street Name:	Industrial Site Driveway #2						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	1	0 0	0 0	0	0 0	4 1	0	0 0	4 0	0
Volume Module:PM Pk Hr												
Base Vol:	0	0	0	0	0	0	0	2140	0	0	1798	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	2140	0	0	1798	0
Added Vol:	0	0	2	0	0	0	0	333	1	0	184	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	2	0	0	0	0	2473	1	0	1982	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	2	0	0	0	0	2688	1	0	2154	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	2	0	0	0	0	2688	1	0	2154	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	538	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	487	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	487	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.3	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	12.4	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	12.4			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #60 Eight Mile & Industrial DW #1

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
HevVeh:			2%			2%			2%			2%
Grade:			0%			0%			0%			0%
Peds/Hour:			0			0			0			0
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:			12 feet			12 feet			12 feet			12 feet

Time Period: 0.25 hour

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #61 Eight Mile & Industrial DW #2

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[12.4]

Street Name:	Industrial Site Driveway #2						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	1	0 0	0 0	0	0 0	4 1	0	0 0	4 0	0
Volume Module:PM Pk Hr												
Base Vol:	0	0	0	0	0	0	0	2140	0	0	1798	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	2140	0	0	1798	0
Added Vol:	0	0	2	0	0	0	0	334	1	0	184	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	2	0	0	0	0	2474	1	0	1982	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	2	0	0	0	0	2689	1	0	2154	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	2	0	0	0	0	2689	1	0	2154	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	538	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	487	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	487	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.3	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	12.4	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	12.4			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the distance per lane in feet.

Cumul With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #61 Eight Mile & Industrial DW #2

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
HevVeh:			2%			2%			2%			2%
Grade:			0%			0%			0%			0%
Peds/Hour:			0			0			0			0
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:			12 feet			12 feet			12 feet			12 feet
Time Period: 0.25 hour												

Cumul With Bridge Alternative PM Pk Hr

Future Queue Length Report (feet)

Node	Intersection	Northbound L	Northbound -- T	Northbound -- R	Southbound L	Southbound -- T	Southbound -- R	Eastbound L	Eastbound -- T	Eastbound -- R	Westbound L	Westbound -- T	Westbound -- R
#3	[HCM2k95thQ]:	329	1025	386	1304	408	322	509	674	107	250	1431	1431
#4	[HCM2k95thQ]:	570	555	525	498	467	224	190	626	187	405	757	757
#5	[HCM2k95thQ]:	160	727	1037	842	309	116	372	1224	106	743	1447	1447
#6	[HCM2k95thQ]:	92	1019	1297	1836	236	22	252	964	38	1531	363	1314
#7	[HCM2k95thQ]:	227	227	227	158	158	158	126	241	241	123	246	246
#8	[HCM2k95thQ]:	1043	537	167	234	836	1119	984	1358	1358	335	1259	1259
#9	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	206	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#10	[HCM2k95thQ]:	55	0	153	311	0	10	199	517	517	214	510	510
#11	[HCM2k95thQ]:	566	112	53	80	132	554	464	514	542	61	619	32
#12	[HCM2k95thQ]:	3	409	409	656	6	6	16	745	1	129	1030	1030
#13	[HCM2k95thQ]:	31	28	28	28	24	24	17	15	0	28	17	17
#16	[HCM2k95thQ]:	413	589	589	162	433	135	389	259	262	302	375	375
#17	[HCM2k95thQ]:	94	261	650	977	164	65	198	1098	33	753	2012	2012
#18	[HCM2k95thQ]:	400	529	193	158	563	98	132	204	475	312	181	149
#19	[HCM2k95thQ]:	328	331	214	214	302	149	241	376	214	328	294	120
#22	[HCM2k95thQ]:	8	120	201	377	40	40	51	237	237	135	252	435
#24	[HCM2k95thQ]:	454	503	503	80	827	827	88	562	562	279	61	61
#25	[HCM2k95thQ]:	290	807	807	189	786	786	519	329	329	182	430	430
#26	[HCM2k95thQ]:	201	1410	1200	1014	426	118	460	563	149	436	298	1462
#27	[HCM2k95thQ]:	656	452	452	174	299	616	504	788	788	301	1140	1140
#45	[HCM2k95thQ]:	49	0	71	0	0	0	0	81	81	55	13	0
#51	[2Way95thQ]:	xxxx	xxxx	6.0	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#52	[2Way95thQ]:	xxxx	xxxx	14.9	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#53	[HCM2k95thQ]:	189	0	149	0	0	0	0	301	20	288	37	0
#54	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	10.6
#55	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	1.3
#56	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	5.6
#57	[2Way95thQ]:	xxxx	xxxx	18.6	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#58	[2Way95thQ]:	xxxx	xxxx	19.1	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#60	[2Way95thQ]:	xxxx	xxxx	0.3	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#61	[2Way95thQ]:	xxxx	xxxx	0.3	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Traffix 8.0.0715 (c) 2008 Dowling Assoc. Licensed to kdANDERSON TRANSP.

Cumul + No Build Alt AM Pk Hr

Scenario Report

Scenario:	Cumul + No Build Alt AM
Command:	Cumul + No Build Alt AM
Volume:	Cumul No Build AM
Geometry:	Cumul No Build
Impact Fee:	Default Impact Fee
Trip Generation:	AM Pk Hr
Trip Distribution:	Cumul No Bridge AM
Paths:	Cumul No Build
Routes:	Default Route
Configuration:	Default Configuration

Cumul + No Build Alt AM Pk Hr

Trip Generation Report

Forecast for AM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
4	Industrial	21.40	Indust KSF	0.15	0.03	3	1	4	100.0
	Zone 4 Subtotal					3	1	4	100.0
TOTAL						3	1	4	100.0

Cumul + No Build Alt AM Pk Hr

Trip Distribution Report

Percent Of Trips Cumul No Bridge AM

Zone	To Gates 1	2	3	4	5	6	7	8	9	10	11
4	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	1.0

Zone	To Gates 14	15	16	18	19	20	21	22	23	24	25
4	1.0	2.0	5.0	2.0	26.0	9.0	1.0	2.0	12.0	4.0	2.0

Zone	To Gates 26
4	2.0

Cumul + No Build Alt AM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	D	36.8	0.838	D	36.8	0.838	+ 0.000 D/V
# 4 Eight Mile Rd & Davis Rd	C	32.5	0.682	C	32.5	0.682	+ 0.000 D/V
# 5 Eight Mile & Lower Sacto Rd	D	35.3	0.830	D	35.3	0.830	+ 0.000 D/V
# 6 West Lane & Armstrong Road	E	69.1	1.097	E	69.1	1.097	+ 0.000 D/V
# 7 West Lane & Ham Lane	B	11.8	0.388	B	11.8	0.388	+ 0.000 D/V
# 8 Eight Mile Rd & West Ln	D	42.2	0.890	D	42.2	0.890	+ 0.001 D/V
# 9 Eight Mile Road & Ham Lane	C	22.9	0.645	C	23.0	0.645	+ 0.067 D/V
# 10 Eight Mile & Leach Rd/St J	A	1.0	0.346	A	1.0	0.346	+ 0.000 D/V
# 11 Eight Mile & MickeGrove/Holman	C	29.6	0.706	C	29.6	0.706	+ 0.001 D/V
# 12 Eight Mile & SR 99 W Frontage	C	25.3	0.668	C	25.3	0.668	-0.005 D/V
# 13 Eight Mile & SR 99 E Frontage	A	3.9	0.174	A	3.9	0.174	+ 0.000 D/V
# 17 Holman & Lt Col Mark Taylor	D	43.3	0.860	D	43.3	0.860	+ 0.000 D/V
# 18 Morada Lane & West Lane	C	30.0	0.691	C	30.0	0.691	-0.002 D/V
# 19 Morada Lane & Holman Road	C	33.4	0.515	C	33.4	0.515	+ 0.000 D/V
# 22 Morada Ln & SR99 W Frontage Rd	C	24.3	0.414	C	24.3	0.414	+ 0.000 D/V
# 24 West Ln & West Ln Frontage Rd	C	25.4	0.769	C	25.4	0.769	-0.003 D/V
# 25 West Lane & Knickerbocker Dr	C	24.3	0.731	C	24.3	0.731	-0.002 D/V
# 26 West Lane & Hammer Lane	C	35.0	0.817	C	35.0	0.817	+ 0.002 D/V
# 27 Hammer Lane & Holman Road	C	33.3	0.764	C	33.3	0.764	+ 0.000 D/V

Cumul + No Build Alt AM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]

Cumul + No Build Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.838
Loss Time (sec):	12	Average Delay (sec/veh):	36.8
Optimal Cycle:	87	Level Of Service:	D

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	AM Peak Hour											
Base Vol:	123	347	114	456	595	208	243	1379	104	237	1434	234
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	123	347	114	456	595	208	243	1379	104	237	1434	234
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	123	347	114	456	595	208	243	1379	104	237	1434	234
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	134	377	124	496	647	226	264	1499	113	258	1559	254
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	134	377	124	496	647	226	264	1499	113	258	1559	254
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	134	377	124	496	647	226	264	1499	113	258	1559	254
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	3.44	0.56
Final Sat.:	1769	3538	1583	1769	3538	1583	3432	6778	1583	3432	5704	931
Capacity Analysis Module:												
Vol/Sat:	0.08	0.11	0.08	0.28	0.18	0.14	0.08	0.22	0.07	0.08	0.27	0.27
Crit Moves:		****		****			****				****	
Green/Cycle:	0.14	0.13	0.13	0.33	0.33	0.33	0.09	0.31	0.31	0.11	0.33	0.33
Volume/Cap:	0.56	0.84	0.62	0.84	0.56	0.44	0.84	0.71	0.23	0.71	0.84	0.84
Delay/Veh:	43.4	55.6	46.9	40.9	28.4	27.0	62.2	31.5	25.7	49.5	34.3	34.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.4	55.6	46.9	40.9	28.4	27.0	62.2	31.5	25.7	49.5	34.3	34.3
LOS by Move:	D	E	D	D	C	C	E	C	C	D	C	C
HCM2k95thQ:	224	397	225	701	389	251	214	470	107	198	627	627

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	2	0	1	1	0	2	0	1	2	0	4	0	1	2
Lane Group:	L		T		R	L		T		R	L		T		R	L
#LnsInGrps:	1		2		1	1		2		1	2		4		1	2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12		12	12		12		12	12		12		12	12
CrsswalkWid:			8					8					8			
% Hev Veh:			2					2					2			
Grade:			0%					0%					0%			
Parking/Hr:			No					No					No			
Bus Stp/Hr:			0					0					0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0					0					0			
ExclusiveRT:			Include					Include					Include			
% RT Prtct:			0					0					0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.98	0.98	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.96	0.96	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.90	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.14	0.13	0.13		0.33	0.33	0.33		0.09	0.31	0.31		0.11	0.33	0.33	
ArrivalType:		4				4				4				4		
ProgFactor:	0.97	0.99	0.98		0.96	0.91	0.89		0.99	0.94	0.87		0.99	0.96	0.96	
Q1:	3.4	5.3	3.2		12.2	7.1	4.4		3.7	9.5	2.0		3.5	12.3	12.3	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.74	0.74	0.74		0.60	0.60	0.60	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.60	0.60	0.60		0.77	0.77	0.77	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.15	0.32	0.29		0.21	0.41	0.41	
Q2:	1.2	3.1	1.4		3.9	1.2	0.8		0.6	0.7	0.1		0.5	1.9	1.9	
HCM2KQueue:	4.6	8.5	4.6		16.1	8.3	5.1		4.3	10.2	2.1		4.0	14.2	14.2	
70th%Factor:	1.19	1.18	1.19		1.17	1.18	1.19		1.19	1.18	1.19		1.19	1.17	1.17	
HCM2k70thQ:	5.4	10.0	5.5		18.8	9.8	6.1		5.2	12.0	2.5		4.8	16.6	16.6	
85th%Factor:	1.56	1.53	1.56		1.48	1.53	1.55		1.56	1.51	1.58		1.56	1.49	1.49	
HCM2k85thQ:	7.1	12.9	7.1		23.7	12.7	8.0		6.8	15.5	3.3		6.2	21.0	21.0	
90th%Factor:	1.72	1.66	1.72		1.58	1.66	1.71		1.72	1.64	1.76		1.73	1.60	1.60	
HCM2k90thQ:	7.8	14.1	7.9		25.4	13.8	8.8		7.5	16.8	3.7		6.9	22.6	22.6	
95th%Factor:	1.97	1.87	1.97		1.75	1.88	1.95		1.97	1.84	2.03		1.98	1.77	1.77	
HCM2k95thQ:	9.0	15.9	9.0		28.1	15.6	10.0		8.6	18.8	4.3		7.9	25.1	25.1	
98th%Factor:	2.40	2.22	2.40		1.99	2.23	2.37		2.42	2.16	2.55		2.44	2.04	2.04	
HCM2k98thQ:	10.9	18.8	11.0		32.0	18.5	12.2		10.5	22.0	5.4		9.7	28.8	28.8	

Cumul + No Build Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.682
Loss Time (sec):	12	Average Delay (sec/veh):	32.5
Optimal Cycle:	57	Level Of Service:	C

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2 0 1	1	0	2 0 1	2	0	4 0 1	2	0	3 1 0
Volume Module:	AM Peak Hour											
Base Vol:	206	288	156	222	509	124	144	1351	180	316	1326	107
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	206	288	156	222	509	124	144	1351	180	316	1326	107
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	206	288	156	222	509	124	144	1351	180	316	1326	107
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	224	313	170	241	553	135	157	1468	196	343	1441	116
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	224	313	170	241	553	135	157	1468	196	343	1441	116
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	224	313	170	241	553	135	157	1468	196	343	1441	116
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.88	0.88
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	3.70	0.30
Final Sat.:	1769	3538	1583	1769	3538	1583	3432	6778	1583	3432	6203	501
Capacity Analysis Module:												
Vol/Sat:	0.13	0.09	0.11	0.14	0.16	0.09	0.05	0.22	0.12	0.10	0.23	0.23
Crit Moves:	****				****			****		****		
Green/Cycle:	0.19	0.18	0.18	0.23	0.23	0.23	0.08	0.32	0.32	0.15	0.39	0.39
Volume/Cap:	0.68	0.48	0.59	0.59	0.68	0.37	0.60	0.68	0.39	0.68	0.60	0.60
Delay/Veh:	43.7	37.2	40.5	36.3	37.6	33.1	48.5	30.6	27.0	44.2	24.7	24.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.7	37.2	40.5	36.3	37.6	33.1	48.5	30.6	27.0	44.2	24.7	24.7
LOS by Move:	D	D	D	D	D	C	D	C	C	D	C	C
HCM2k95thQ:	355	236	265	333	420	175	119	452	196	307	450	450

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L - T - R				L - T - R				L - T - R				L - T - R			
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	2 0 1		1	0	2 0 1		2	0	4 0 1		2	0	3 1 0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	2	1		1	2	1		2	4	1		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12				
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.90	0.89	0.83		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.19	0.18	0.18	0.23	0.23	0.23	0.08	0.32	0.32	0.15	0.39	0.39
ArrivalType:		4			4			4			4	
ProgFactor:	0.97	0.96	0.96	0.95	0.96	0.93	0.99	0.93	0.89	0.98	0.88	0.88
Q1:	5.6	3.9	4.2	5.7	7.1	2.9	2.1	9.1	3.7	4.6	8.3	8.3
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.71	0.71	0.71	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.64	0.64	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.14	0.34	0.31	1.00	1.00	1.00
Q2:	1.9	0.9	1.3	1.3	1.9	0.6	0.2	0.7	0.2	1.8	1.4	1.4
HCM2KQueue:	7.5	4.8	5.5	7.0	9.0	3.5	2.3	9.8	3.9	6.4	9.7	9.7
70th%Factor:	1.18	1.19	1.19	1.18	1.18	1.19	1.19	1.18	1.19	1.19	1.18	1.18
HCM2k70thQ:	8.9	5.7	6.5	8.3	10.6	4.2	2.8	11.5	4.7	7.6	11.5	11.5
85th%Factor:	1.53	1.56	1.55	1.54	1.52	1.57	1.58	1.52	1.56	1.54	1.52	1.52
HCM2k85thQ:	11.5	7.5	8.5	10.7	13.7	5.5	3.7	14.8	6.2	9.8	14.8	14.8
90th%Factor:	1.67	1.71	1.70	1.68	1.65	1.74	1.76	1.65	1.73	1.69	1.65	1.65
HCM2k90thQ:	12.6	8.3	9.3	11.8	14.9	6.1	4.1	16.1	6.8	10.8	16.0	16.0
95th%Factor:	1.90	1.96	1.94	1.91	1.86	1.99	2.03	1.85	1.98	1.92	1.85	1.85
HCM2k95thQ:	14.2	9.5	10.6	13.3	16.8	7.0	4.8	18.1	7.8	12.3	18.0	18.0
98th%Factor:	2.26	2.39	2.36	2.28	2.20	2.46	2.53	2.17	2.44	2.31	2.17	2.17
HCM2k98thQ:	17.0	11.5	12.9	16.0	19.8	8.6	6.0	21.3	9.6	14.8	21.1	21.1

Cumul + No Build Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.830
Loss Time (sec):	12	Average Delay (sec/veh):	35.3
Optimal Cycle:	85	Level Of Service:	D

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	AM Peak Hour											
Base Vol:	109	377	242	561	585	107	133	1475	89	473	1492	297
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	109	377	242	561	585	107	133	1475	89	473	1492	297
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	109	377	242	561	585	107	133	1475	89	473	1492	297
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	118	410	263	610	636	116	145	1603	97	514	1622	323
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	410	263	610	636	116	145	1603	97	514	1622	323
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	118	410	263	610	636	116	145	1603	97	514	1622	323
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.87	0.87
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	4.00	1.00	2.00	3.34	0.66
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	6778	1583	3432	5511	1097
Capacity Analysis Module:												
Vol/Sat:	0.03	0.12	0.17	0.18	0.18	0.07	0.04	0.24	0.06	0.15	0.29	0.29
Crit Moves:			****	****				****		****		
Green/Cycle:	0.07	0.20	0.20	0.21	0.35	0.35	0.06	0.29	0.29	0.18	0.41	0.41
Volume/Cap:	0.52	0.58	0.83	0.83	0.52	0.21	0.72	0.83	0.21	0.83	0.72	0.72
Delay/Veh:	47.2	37.4	54.9	45.4	26.3	23.2	58.5	36.7	27.5	48.7	25.9	25.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.2	37.4	54.9	45.4	26.3	23.2	58.5	36.7	27.5	48.7	25.9	25.9
LOS by Move:	D	D	D	D	C	C	E	D	C	D	C	C
HCM2k95thQ:	130	311	468	526	360	111	187	651	106	472	604	604

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        2  0  2  0  1    2  0  2  0  1    2  0  4  0  1    2  0  3  1  0
Lane Group:    L    T     R     L    T     R     L    T     R     L   RT     RT
#LnsInGrps:     2    2     1     2    2     1     2    4     1     2    4     4
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:          8                8                8                8
% Hev Veh:            2                2                2                2
Grade:               0%               0%               0%               0%
Parking/Hr:          No               No               No               No
Bus Stp/Hr:           0                0                0                0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:          0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:           0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Hev Veh Adj: 0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
Grade Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Parking Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx 1.00  1.00
Bus Stp Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx 1.00  1.00
Area Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
RT Adj:      xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx 0.98  0.98
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.93 0.98  0.83  0.93 0.98  0.83  0.93 0.98  0.83  0.93 0.96  0.96
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 0.97 0.95  1.00  0.97 0.95  1.00  0.97 0.91  1.00  0.97 0.91  0.91
Fnl Sat Adj: 0.90 0.93  0.83  0.90 0.93  0.83  0.90 0.89  0.83  0.90 0.87  0.87
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
```


Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Green/Cycle: 0.07 0.20  0.20  0.21 0.35  0.35  0.06 0.29  0.29  0.18 0.41  0.41
ArrivalType:         4                4                4                4
ProgFactor:  0.99 0.96  0.98  0.98 0.89  0.84  0.99 0.97  0.89  0.98 0.90  0.90
Q1:           1.6  5.2   6.9   8.2  6.6   1.9   2.0 11.1   1.8   7.0 11.2  11.2
UpstreamVC:  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00
UpstreamAdj: 0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00
EarlyArrAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Q2:           0.9  1.3   3.3   3.4  1.0   0.3   1.7  3.7   0.3   3.3  2.4   2.4
HCM2KQueue:   2.6  6.5  10.2  11.6  7.6   2.2   3.8 14.8   2.1  10.3 13.5  13.5
------------|---------------||---------------||---------------||---------------|
70th%Factor: 1.19 1.19  1.18  1.17 1.18  1.19  1.19 1.17  1.19  1.18 1.17  1.17
HCM2k70thQ:   3.1  7.7  12.0  13.6  9.0   2.6   4.5 17.3   2.5  12.1 15.9  15.9
------------|---------------||---------------||---------------||---------------|
85th%Factor: 1.58 1.54  1.51  1.50 1.53  1.58  1.56 1.48  1.58  1.51 1.49  1.49
HCM2k85thQ:   4.0 10.0  15.4  17.4 11.7   3.5   5.9 21.9   3.3  15.5 20.2  20.2
------------|---------------||---------------||---------------||---------------|
90th%Factor: 1.75 1.69  1.64  1.62 1.67  1.76  1.73 1.59  1.76  1.64 1.60  1.60
HCM2k90thQ:   4.5 10.9  16.7  18.8 12.7   3.8   6.5 23.5   3.7  16.8 21.7  21.7
------------|---------------||---------------||---------------||---------------|
95th%Factor: 2.02 1.92  1.84  1.82 1.89  2.03  1.99 1.76  2.03  1.84 1.78  1.78
HCM2k95thQ:   5.2 12.4  18.7  21.1 14.4   4.4   7.5 26.0   4.2  18.9 24.1  24.1
------------|---------------||---------------||---------------||---------------|
98th%Factor: 2.52 2.31  2.16  2.11 2.26  2.55  2.45 2.02  2.55  2.15 2.05  2.05
HCM2k98thQ:   6.5 15.0  21.9  24.5 17.2   5.6   9.2 29.8   5.3  22.1 27.8  27.8
```

Cumul + No Build Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec):	100	Critical Vol./Cap.(X):	1.097
Loss Time (sec):	12	Average Delay (sec/veh):	69.1
Optimal Cycle:	180	Level Of Service:	E

Street Name:	West Lane								Armstrong Road			
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 2	0 1		1	0 2	0 1		1	0 2	0 1		1	0 2	0 1	
Volume Module:	AM Peak Hour															
Base Vol:	28	378	255		588	538	28		36	423	22		487	431	333	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	28	378	255		588	538	28		36	423	22		487	431	333	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	28	378	255		588	538	28		36	423	22		487	431	333	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	30	411	277		639	585	30		39	460	24		529	468	362	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	30	411	277		639	585	30		39	460	24		529	468	362	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	30	411	277		639	585	30		39	460	24		529	468	362	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Lanes:	1.00	2.00	1.00		1.00	2.00	1.00		1.00	2.00	1.00		1.00	2.00	1.00	
Final Sat.:	1769	3538	1583		1769	3538	1583		1769	3538	1583		1769	3538	1583	
Capacity Analysis Module:																
Vol/Sat:	0.02	0.12	0.18		0.36	0.17	0.02		0.02	0.13	0.02		0.30	0.13	0.23	
Crit Moves:			****		****					****			****			
Green/Cycle:	0.05	0.16	0.16		0.33	0.44	0.44		0.03	0.12	0.12		0.27	0.36	0.36	
Volume/Cap:	0.37	0.73	1.10		1.10	0.37	0.04		0.64	1.10	0.13		1.10	0.37	0.64	
Delay/Veh:	49.2	44.7	127.2		100.2	18.8	15.9		68.5	117	39.8		106.5	24.0	29.3	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	49.2	44.7	127.2		100.2	18.8	15.9		68.5	117	39.8		106.5	24.0	29.3	
LOS by Move:	D	D	F		F	B	B		E	F	D		F	C	C	
HCM2k95thQ:	70	368	673		1242	248	21		117	611	37		1077	242	430	

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 2	0 1		1	0 2	0 1		1	0 2	0 1		1	0 2	0 1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	2	1		1	2	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.05	0.16	0.16	0.33	0.44	0.44	0.03	0.12	0.12	0.27	0.36	0.36
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.98	1.00	1.00	0.79	0.74	1.00	1.00	0.96	1.00	0.86	0.90
Q1:	0.8	5.6	7.7	17.8	4.5	0.4	1.1	6.7	0.6	14.7	4.4	7.6
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.5	2.2	7.6	13.2	0.6	0.0	1.2	7.0	0.1	11.6	0.6	1.7
HCM2KQueue:	1.4	7.8	15.3	30.9	5.1	0.4	2.3	13.7	0.7	26.3	4.9	9.3
70th%Factor:	1.20	1.18	1.17	1.15	1.19	1.20	1.19	1.17	1.20	1.15	1.19	1.18
HCM2k70thQ:	1.6	9.2	17.9	35.4	6.0	0.5	2.7	16.1	0.9	30.3	5.9	10.9
85th%Factor:	1.59	1.53	1.48	1.41	1.55	1.60	1.58	1.49	1.59	1.42	1.55	1.52
HCM2k85thQ:	2.2	11.9	22.7	43.5	7.9	0.6	3.6	20.4	1.1	37.5	7.7	14.1
90th%Factor:	1.77	1.67	1.59	1.49	1.71	1.79	1.76	1.60	1.79	1.51	1.71	1.65
HCM2k90thQ:	2.4	13.0	24.3	45.9	8.7	0.7	4.0	22.0	1.3	39.6	8.5	15.3
95th%Factor:	2.06	1.89	1.76	1.61	1.95	2.09	2.03	1.78	2.08	1.64	1.96	1.86
HCM2k95thQ:	2.8	14.7	26.9	49.7	9.9	0.8	4.7	24.4	1.5	43.1	9.7	17.2
98th%Factor:	2.60	2.25	2.01	1.79	2.38	2.67	2.54	2.05	2.65	1.83	2.38	2.19
HCM2k98thQ:	3.5	17.5	30.8	55.4	12.1	1.1	5.8	28.1	1.9	48.2	11.8	20.3

Cumul + No Build Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.388
Loss Time (sec): 9 Average Delay (sec/veh): 11.8
Optimal Cycle: 29 Level Of Service: B

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0	1	1	0
Volume Module:AM Peak Hour												
Base Vol:	32	13	19	43	28	31	33	796	30	42	797	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	32	13	19	43	28	31	33	796	30	42	797	19
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	32	13	19	43	28	31	33	796	30	42	797	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	35	14	21	47	30	34	36	865	33	46	866	21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	14	21	47	30	34	36	865	33	46	866	21
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	35	14	21	47	30	34	36	865	33	46	866	21
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.80	0.80	0.80	0.80	0.80	0.80	0.93	0.93	0.93	0.93	0.93	0.93
Lanes:	0.50	0.20	0.30	0.43	0.27	0.30	1.00	1.93	0.07	1.00	1.95	0.05
Final Sat.:	756	307	449	644	420	465	1769	3392	128	1769	3445	82
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.05	0.07	0.07	0.07	0.02	0.26	0.26	0.03	0.25	0.25
Crit Moves:					****			****		****		
Green/Cycle:	0.19	0.19	0.19	0.19	0.19	0.19	0.05	0.66	0.66	0.07	0.67	0.67
Volume/Cap:	0.25	0.25	0.25	0.39	0.39	0.39	0.38	0.39	0.39	0.39	0.38	0.38
Delay/Veh:	35.1	35.1	35.1	36.5	36.5	36.5	48.1	8.0	8.0	46.9	7.4	7.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.1	35.1	35.1	36.5	36.5	36.5	48.1	8.0	8.0	46.9	7.4	7.4
LOS by Move:	D	D	D	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	95	95	95	159	159	159	77	156	156	92	136	136

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	0	0	1!	0	0	0	0	1! 0	0	1	0	1	1	0	1	0
Lane Group:	LTR	LTR	LTR		LTR	LTR	LTR		L	RT	RT	L	RT	RT		
#LnsInGrps:	1	1	1		1	1	1		1	2	2	1	2	2		
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	5	5	5		5	5	5		1 xxxx	xxxx		1 xxxx	xxxx			
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	1.00	1.00	1.00		1.00	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	1.00	1.00	1.00		1.00	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	0.96	0.96	0.96		0.96	0.96	0.96		xxxx	1.00	1.00		xxxx	1.00	1.00	
LT Adj:	0.85	0.85	0.85		0.86	0.86	0.86		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.80	0.80	0.80		0.80	0.80	0.80		0.93	0.98	0.98		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	0.95		1.00	0.95	0.95	
Fnl Sat Adj:	0.80	0.80	0.80		0.80	0.80	0.80		0.93	0.93	0.93		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	100	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	17.67	17.67	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	18.67	18.67	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	18.67	18.67	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	1	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	1	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	35	47	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	0.50	0.42	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	0.42	0.50	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	0.97	1.30	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	111	70	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	3.08	1.94	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	1.33	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	3.00	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	4.62	3.41	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	0.75	0.75	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	5.61	3.06	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	13.06	15.26	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	0.50	0.00	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	0.58	0.50	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	1.57	1.51	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	1.00	1.00	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	0.16	0.15	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	0.85	0.86	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	0.85	0.86	xxxxxx	xxxxxx

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.19	0.19	0.19	0.19	0.19	0.19	0.05	0.66	0.66	0.07	0.67	0.67
ArrivalType:		4			4			4			4	
ProgFactor:	0.94	0.94	0.94	0.95	0.95	0.95	0.99	0.41	0.41	0.98	0.37	0.37
Q1:	1.5	1.5	1.5	2.6	2.6	2.6	1.0	2.5	2.5	1.2	2.1	2.1
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.3	0.3	0.3	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
HCM2KQueue:	1.9	1.9	1.9	3.2	3.2	3.2	1.5	3.1	3.1	1.8	2.7	2.7
70th%Factor:	1.20	1.20	1.20	1.19	1.19	1.19	1.20	1.19	1.19	1.20	1.19	1.19
HCM2k70thQ:	2.2	2.2	2.2	3.8	3.8	3.8	1.8	3.7	3.7	2.1	3.2	3.2
85th%Factor:	1.58	1.58	1.58	1.57	1.57	1.57	1.59	1.57	1.57	1.58	1.57	1.57
HCM2k85thQ:	3.0	3.0	3.0	5.0	5.0	5.0	2.4	4.9	4.9	2.8	4.3	4.3
90th%Factor:	1.76	1.76	1.76	1.74	1.74	1.74	1.77	1.74	1.74	1.77	1.75	1.75
HCM2k90thQ:	3.3	3.3	3.3	5.5	5.5	5.5	2.7	5.4	5.4	3.2	4.7	4.7
95th%Factor:	2.04	2.04	2.04	2.00	2.00	2.00	2.05	2.00	2.00	2.04	2.02	2.02
HCM2k95thQ:	3.8	3.8	3.8	6.4	6.4	6.4	3.1	6.2	6.2	3.7	5.4	5.4
98th%Factor:	2.57	2.57	2.57	2.48	2.48	2.48	2.59	2.49	2.49	2.57	2.51	2.51
HCM2k98thQ:	4.8	4.8	4.8	7.9	7.9	7.9	3.9	7.7	7.7	4.6	6.8	6.8

Cumul + No Build Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.890
Loss Time (sec):	12	Average Delay (sec/veh):	42.2
Optimal Cycle:	105	Level Of Service:	D

Street Name:	West Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	3 1	0	2 0	3 1	0
Volume Module:	AM Peak Hour											
Base Vol:	488	389	80	145	830	373	400	1426	471	183	1418	66
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	488	389	80	145	830	373	400	1426	471	183	1418	66
Added Vol:	0	0	1	0	0	0	0	1	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	488	389	81	145	830	373	400	1427	471	183	1418	66
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	530	423	88	158	902	405	435	1551	512	199	1541	72
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	530	423	88	158	902	405	435	1551	512	199	1541	72
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	530	423	88	158	902	405	435	1551	512	199	1541	72
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.86	0.86	0.90	0.89	0.89
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.01	0.99	2.00	3.82	0.18
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	4907	1620	3432	6431	299
Capacity Analysis Module:												
Vol/Sat:	0.15	0.12	0.06	0.05	0.26	0.26	0.13	0.32	0.32	0.06	0.24	0.24
Crit Moves:	****				****			****		****		
Green/Cycle:	0.17	0.33	0.33	0.13	0.29	0.29	0.15	0.35	0.35	0.07	0.27	0.27
Volume/Cap:	0.89	0.36	0.17	0.36	0.89	0.89	0.87	0.89	0.89	0.89	0.87	0.87
Delay/Veh:	55.8	25.5	23.8	40.4	44.1	54.0	57.3	35.2	35.2	78.9	39.5	39.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	55.8	25.5	23.8	40.4	44.1	54.0	57.3	35.2	35.2	78.9	39.5	39.5
LOS by Move:	E	C	C	D	D	D	E	D	D	E	D	D
HCM2k95thQ:	360	204	76	128	745	672	447	829	829	190	622	622

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	0 1		2	0 2	0 1		2	0 3	1 0		2	0 3	1 0	
Lane Group:	L	T	R		L	T	R		L	RT	RT		L	RT	RT	
#LnsInGrps:	2	2	1		2	2	1		2	4	4		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.96	0.96		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.94	0.94		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.86	0.86		0.90	0.89	0.89	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.17	0.33	0.33		0.13	0.29	0.29		0.15	0.35	0.35		0.07	0.27	0.27	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.87	0.85		0.97	0.98	0.98		0.99	0.97	0.97		1.00	0.98	0.98	
Q1:	7.4	4.1	1.5		2.0	12.4	10.6		6.0	14.3	14.3		2.8	11.5	11.5	
UpstreamVC:	xxxx	xxxx	xxxxx		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.09	0.09	0.09		0.00	0.00	0.00		0.00	0.00	0.00		1.00	1.00	1.00	
EarlyArrAdj:	0.03	0.05	0.04		1.00	1.00	1.00		1.00	1.00	1.00		0.20	0.49	0.49	
Q2:	0.2	0.0	0.0		0.5	4.9	4.7		3.6	5.1	5.1		1.0	2.5	2.5	
HCM2KQueue:	7.6	4.1	1.5		2.5	17.2	15.3		9.7	19.5	19.5		3.8	14.0	14.0	
70th%Factor:	1.18	1.19	1.20		1.19	1.17	1.17		1.18	1.16	1.16		1.19	1.17	1.17	
HCM2k70thQ:	9.0	4.9	1.8		3.0	20.1	17.9		11.4	22.6	22.6		4.5	16.4	16.4	
85th%Factor:	1.53	1.56	1.59		1.58	1.47	1.48		1.52	1.46	1.46		1.56	1.49	1.49	
HCM2k85thQ:	11.7	6.4	2.3		4.0	25.3	22.7		14.7	28.3	28.3		6.0	20.8	20.8	
90th%Factor:	1.67	1.73	1.77		1.75	1.57	1.59		1.65	1.55	1.55		1.73	1.60	1.60	
HCM2k90thQ:	12.7	7.1	2.6		4.5	27.0	24.3		15.9	30.2	30.2		6.6	22.4	22.4	
95th%Factor:	1.89	1.98	2.05		2.02	1.73	1.76		1.85	1.70	1.70		1.99	1.78	1.78	
HCM2k95thQ:	14.4	8.2	3.0		5.1	29.8	26.9		17.9	33.1	33.1		7.6	24.9	24.9	
98th%Factor:	2.26	2.43	2.59		2.52	1.97	2.01		2.18	1.92	1.92		2.45	2.04	2.04	
HCM2k98thQ:	17.2	10.0	3.8		6.4	33.9	30.7		21.0	37.4	37.4		9.3	28.6	28.6	

Cumul + No Build Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.645
Loss Time (sec):	12	Average Delay (sec/veh):	23.0
Optimal Cycle:	53	Level Of Service:	C

Street Name:	Ham Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0
Lanes:	4	0	1	1	0	4	0	1				
Volume Module:	AM Peak Hour											
Base Vol:	0	0	0	417	0	76	95	1481	0	0	1576	235
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	417	0	76	95	1481	0	0	1576	235
Added Vol:	0	0	0	0	0	0	0	0	1	1	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	417	0	76	95	1481	1	1	1576	235
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	453	0	83	103	1610	1	1	1713	255
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	453	0	83	103	1610	1	1	1713	255
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	453	0	83	103	1610	1	1	1713	255
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.93	1.00	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	1.00	0.00	1.00	0.00	1.00	1.00	4.00	1.00	1.00	4.00	1.00
Final Sat.:	1900	1900	0	1769	0	1583	1769	6778	1583	1769	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.26	0.00	0.05	0.06	0.24	0.00	0.00	0.25	0.16
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.40	0.00	0.40	0.09	0.48	0.48	0.00	0.39	0.39
Volume/Cap:	0.00	0.00	0.00	0.64	0.00	0.13	0.64	0.49	0.00	0.49	0.64	0.41
Delay/Veh:	0.0	0.0	0.0	26.5	0.0	19.2	52.7	17.8	13.5	166.0	25.3	22.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	26.5	0.0	19.2	52.7	17.8	13.5	166.0	25.3	22.5
LOS by Move:	A	A	A	C	A	B	D	B	B	F	C	C
HCM2k95thQ:	0	0	0	490	0	67	140	312	1	2	479	230

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	1 0	1	0	0	1 0	1	0	4	0 1	1	0	4	0 1
Lane Group:	L		RT	RT	L		RT	RT	L		T	R	L		T	R
#LnsInGrps:	1		1	1	1		1	1	1		4	1	1		4	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	xxxx	xxxx	xxxx		1 xxxx	xxxx			1 xxxx	xxxx			1 xxxx	xxxx		
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	xxxx	xxxx	xxxxx	0.98	xxxx	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	1.00
Area Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	0.85
LT Adj:	xxxx	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	1.00	1.00	1.00	0.93	1.00	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00
Fnl Sat Adj:	1.00	1.00	1.00	0.93	1.00	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.83
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.00	0.00	0.00	0.40	0.00	0.40	0.09	0.48	0.48	0.00	0.39	0.39
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	1.00	1.00	0.88	1.00	0.79	0.99	0.77	0.69	1.00	0.88	0.84
Q1:	0.0	0.0	0.0	9.0	0.0	1.2	2.7	6.4	0.0	0.0	9.4	4.3
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	xxxx	xxxx	xxxxx	0.35	0.35	0.35
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.09	0.09	0.95	0.95	0.95
EarlyArrAdj:	0.00	0.00	0.00	1.00	0.00	1.00	0.02	0.06	0.06	0.02	0.58	0.52
Q2:	0.0	0.0	0.0	1.7	0.0	0.2	0.0	0.1	0.0	0.0	1.0	0.4
HCM2KQueue:	0.0	0.0	0.0	10.7	0.0	1.3	2.8	6.5	0.0	0.0	10.4	4.7
70th%Factor:	1.20	1.20	1.20	1.18	1.20	1.20	1.19	1.18	1.20	1.20	1.18	1.19
HCM2k70thQ:	0.0	0.0	0.0	12.6	0.0	1.6	3.3	7.7	0.0	0.1	12.3	5.6
85th%Factor:	1.60	1.60	1.60	1.51	1.60	1.59	1.57	1.54	1.60	1.60	1.51	1.56
HCM2k85thQ:	0.0	0.0	0.0	16.2	0.0	2.1	4.4	10.0	0.0	0.1	15.8	7.3
90th%Factor:	1.80	1.80	1.80	1.63	1.80	1.77	1.75	1.69	1.80	1.80	1.64	1.72
HCM2k90thQ:	0.0	0.0	0.0	17.5	0.0	2.3	4.9	11.0	0.0	0.1	17.1	8.0
95th%Factor:	2.10	2.10	2.10	1.83	2.10	2.06	2.01	1.92	2.10	2.10	1.84	1.96
HCM2k95thQ:	0.0	0.0	0.0	19.6	0.0	2.7	5.6	12.5	0.0	0.1	19.1	9.2
98th%Factor:	2.70	2.70	2.70	2.14	2.70	2.60	2.51	2.31	2.70	2.70	2.15	2.40
HCM2k98thQ:	0.0	0.0	0.0	22.9	0.0	3.4	7.0	15.0	0.0	0.1	22.4	11.2

Cumul + No Build Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St J

Cycle (sec):	100	Critical Vol./Cap.(X):	0.346
Loss Time (sec):	12	Average Delay (sec/veh):	1.0
Optimal Cycle:	33	Level Of Service:	A

Street Name:	Leach Road/Street J						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	3 1	0	1 0	3 1	0
Volume Module:	AM Peak Hour											
Base Vol:	0	0	0	0	0	4	0	1518	0	0	1894	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	4	0	1518	0	0	1894	2
Added Vol:	0	0	0	0	0	0	0	0	0	0	1	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	4	0	1518	0	0	1895	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	0	0	4	0	1650	0	0	2060	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	4	0	1650	0	0	2060	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	4	0	1650	0	0	2060	2
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	0.83	1.00	0.89	0.91	1.00	0.89	0.89
Lanes:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	4.00	0.00	1.00	3.99	0.01
Final Sat.:	1900	1900	1900	1900	0	1583	1900	6778	0	1900	6771	7
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.30	0.30
Crit Moves:					****		****				****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88	0.00	0.00	0.88	0.88
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	xxxx	0.00	0.28	0.00	0.00	0.35	0.35
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.1	1.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.1	1.1
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
HCM2k95thQ:	0	0	0	0	0	6	0	17	0	0	27	27

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        1  0  1  0  1    1  0  0  1  0    1  0  3  1  0    1  0  3  1  0
Lane Group:    L    T     R     L   RT     RT    L   RT     RT    L   RT     RT
#LnsInGrps:     1    1     1     1    1     1     1    4     4     1    4     4
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:          8                8                8                8
% Hev Veh:            2                2                2                2
Grade:               0%               0%               0%               0%
Parking/Hr:          No               No               No               No
Bus Stp/Hr:           0                0                0                0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:          0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:           0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  xxxx xxxx xxxxx  xxxx xxxx  1.00  xxxx 1.00 xxxxx  xxxx 1.00  1.00
Hev Veh Adj: xxxx xxxx xxxxx  xxxx xxxx  0.98  xxxx 0.98 xxxxx  xxxx 0.98  0.98
Grade Adj:   xxxx xxxx xxxxx  xxxx xxxx  1.00  xxxx 1.00 xxxxx  xxxx 1.00  1.00
Parking Adj: xxxx xxxx xxxxx  xxxx xxxx  1.00  xxxx 1.00 xxxxx  xxxx 1.00  1.00
Bus Stp Adj: xxxx xxxx xxxxx  xxxx xxxx  1.00  xxxx 1.00 xxxxx  xxxx 1.00  1.00
Area Adj:    xxxx xxxx xxxxx  xxxx xxxx  1.00  xxxx 1.00 xxxxx  xxxx 1.00  1.00
RT Adj:      xxxx xxxx xxxxx  xxxx xxxx  0.85  xxxx xxxx xxxxx  xxxx 1.00  1.00
LT Adj:      xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 1.00 1.00  1.00  1.00 1.00  0.83  1.00 0.98  1.00  1.00 0.98  0.98
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 0.91  0.91  1.00 0.91  0.91
Fnl Sat Adj: 1.00 1.00  1.00  1.00 1.00  0.83  1.00 0.89  0.91  1.00 0.89  0.89
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  0.00 0.00  0.00  0.00 0.00  0.00  0.00 1.00  0.00  0.00 1.00  1.00
```


Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Green/Cycle: 0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.88  0.00  0.00 0.88  0.88
ArrivalType:         4                4                4                4
ProgFactor:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 0.00  1.00  1.00 0.00  0.00
Q1:           0.0  0.0   0.0   0.0  0.0   0.1   0.0  0.0   0.0   0.0  0.0   0.0
UpstreamVC:  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.49  0.00  0.00 0.00  0.00
UpstreamAdj: 0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.86  0.00  0.00 0.00  0.00
EarlyArrAdj: 0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.85  0.00  0.00 1.00  1.00
Q2:           0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.3   0.0   0.0  0.5   0.5
HCM2KQueue:   0.0  0.0   0.0   0.0  0.0   0.1   0.0  0.3   0.0   0.0  0.5   0.5
------------|---------------||---------------||---------------||---------------|
70th%Factor: 1.20 1.20  1.20  1.20 1.20  1.20  1.20 1.20  1.20  1.20 1.20  1.20
HCM2k70thQ:   0.0  0.0   0.0   0.0  0.0   0.1   0.0  0.4   0.0   0.0  0.6   0.6
------------|---------------||---------------||---------------||---------------|
85th%Factor: 1.60 1.60  1.60  1.60 1.60  1.60  1.60 1.60  1.60  1.60 1.59  1.59
HCM2k85thQ:   0.0  0.0   0.0   0.0  0.0   0.2   0.0  0.5   0.0   0.0  0.8   0.8
------------|---------------||---------------||---------------||---------------|
90th%Factor: 1.80 1.80  1.80  1.80 1.80  1.80  1.80 1.79  1.80  1.80 1.79  1.79
HCM2k90thQ:   0.0  0.0   0.0   0.0  0.0   0.2   0.0  0.6   0.0   0.0  0.9   0.9
------------|---------------||---------------||---------------||---------------|
95th%Factor: 2.10 2.10  2.10  2.10 2.10  2.10  2.10 2.09  2.10  2.10 2.08  2.08
HCM2k95thQ:   0.0  0.0   0.0   0.0  0.0   0.3   0.0  0.7   0.0   0.0  1.1   1.1
------------|---------------||---------------||---------------||---------------|
98th%Factor: 2.70 2.70  2.70  2.70 2.70  2.69  2.70 2.68  2.70  2.70 2.66  2.66
HCM2k98thQ:   0.0  0.0   0.0   0.0  0.0   0.3   0.0  0.9   0.0   0.0  1.4   1.4
```

Cumul + No Build Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Cycle (sec):	100	Critical Vol./Cap.(X):	0.706
Loss Time (sec):	12	Average Delay (sec/veh):	29.6
Optimal Cycle:	60	Level Of Service:	C

Street Name:	Micke Grove Road/Holman Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	1	0	2	0	1	2	0	4	0	1	2	0	4	0	1
Volume Module:	AM Peak Hour											
Base Vol:	377	75	22	36	227	262	240	1213	441	61	1220	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	377	75	22	36	227	262	240	1213	441	61	1220	14
Added Vol:	0	0	0	0	0	0	0	0	0	0	1	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	377	75	22	36	227	262	240	1213	441	61	1221	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	410	82	24	39	247	285	261	1318	479	66	1327	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	410	82	24	39	247	285	261	1318	479	66	1327	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	410	82	24	39	247	285	261	1318	479	66	1327	15
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	3538	1583	1769	3538	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.12	0.02	0.02	0.02	0.07	0.18	0.08	0.19	0.30	0.02	0.20	0.01
Crit Moves:	****					****			****	****		
Green/Cycle:	0.17	0.22	0.22	0.21	0.25	0.25	0.13	0.43	0.43	0.03	0.33	0.33
Volume/Cap:	0.71	0.11	0.07	0.11	0.27	0.71	0.60	0.45	0.71	0.71	0.60	0.03
Delay/Veh:	43.2	31.5	31.3	32.2	30.0	39.5	43.4	20.4	26.8	70.0	28.5	22.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.2	31.5	31.3	32.2	30.0	39.5	43.4	20.4	26.8	70.0	28.5	22.8
LOS by Move:	D	C	C	C	C	D	D	C	C	E	C	C
HCM2k95thQ:	353	51	29	48	151	418	234	318	533	58	388	13

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0	1	1	0	2	0	1	2	0	4	0	1	2	0	4	0	1
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	2	1		1	2	1		2	4	1		2	4	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		1.00	0.95	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.93	0.83		0.93	0.93	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.17	0.22	0.22	0.21	0.25	0.25	0.13	0.43	0.43	0.03	0.33	0.33
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.92	0.91	0.92	0.91	0.96	0.98	0.82	0.88	1.00	0.91	0.84
Q1:	5.4	0.9	0.5	0.8	2.6	6.9	3.4	5.8	9.6	0.9	7.7	0.2
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.67	0.67
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69	0.69	0.69
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.08	0.38	0.34
Q2:	2.0	0.1	0.1	0.1	0.4	2.1	1.3	0.8	2.2	0.2	0.5	0.0
HCM2KQueue:	7.4	1.0	0.6	0.9	3.0	9.0	4.8	6.6	11.8	1.1	8.3	0.3
70th%Factor:	1.18	1.20	1.20	1.20	1.19	1.18	1.19	1.18	1.17	1.20	1.18	1.20
HCM2k70thQ:	8.8	1.2	0.7	1.1	3.6	10.6	5.7	7.9	13.8	1.3	9.7	0.3
85th%Factor:	1.53	1.59	1.59	1.59	1.57	1.52	1.56	1.54	1.50	1.59	1.53	1.60
HCM2k85thQ:	11.4	1.6	0.9	1.5	4.7	13.7	7.4	10.2	17.7	1.8	12.6	0.4
90th%Factor:	1.68	1.78	1.79	1.78	1.74	1.66	1.72	1.69	1.62	1.78	1.66	1.80
HCM2k90thQ:	12.5	1.8	1.0	1.7	5.2	14.9	8.2	11.2	19.1	2.0	13.7	0.5
95th%Factor:	1.90	2.07	2.08	2.07	2.01	1.86	1.96	1.91	1.81	2.06	1.88	2.09
HCM2k95thQ:	14.1	2.1	1.2	1.9	6.0	16.7	9.4	12.7	21.3	2.3	15.5	0.5
98th%Factor:	2.26	2.63	2.66	2.63	2.49	2.20	2.39	2.30	2.10	2.62	2.23	2.68
HCM2k98thQ:	16.8	2.6	1.5	2.4	7.5	19.8	11.4	15.3	24.8	2.9	18.4	0.7

Cumul + No Build Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Eight Mile & SR 99 W Frontage

Cycle (sec):	100	Critical Vol./Cap.(X):	0.668
Loss Time (sec):	12	Average Delay (sec/veh):	25.3
Optimal Cycle:	55	Level Of Service:	C

Street Name:	SR 99 West Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1 0	1 0	0	1 0	1 0	3	0 1	2 0	2	1 0
Volume Module:	AM Peak Hour											
Base Vol:	2	4	82	332	5	3	4	1252	1	133	1267	211
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	4	82	332	5	3	4	1252	1	133	1267	211
Added Vol:	0	0	0	0	0	0	0	0	0	0	1	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	2	4	82	332	5	3	4	1252	1	133	1268	211
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	2	4	89	361	5	3	4	1361	1	145	1378	229
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	4	89	361	5	3	4	1361	1	145	1378	229
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	2	4	89	361	5	3	4	1361	1	145	1378	229
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.84	0.84	0.93	0.93	0.93	0.93	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	0.05	0.95	1.00	0.62	0.38	1.00	3.00	1.00	2.00	2.57	0.43
Final Sat.:	1769	74	1522	1769	1099	659	1769	5083	1583	3432	4267	710
Capacity Analysis Module:												
Vol/Sat:	0.00	0.06	0.06	0.20	0.00	0.00	0.00	0.27	0.00	0.04	0.32	0.32
Crit Moves:		****		****			****				****	
Green/Cycle:	0.08	0.09	0.09	0.31	0.31	0.31	0.00	0.42	0.42	0.07	0.48	0.48
Volume/Cap:	0.02	0.67	0.67	0.67	0.02	0.02	0.67	0.64	0.00	0.64	0.67	0.67
Delay/Veh:	42.6	56.0	56.0	33.5	23.6	23.6	190.2	23.5	16.8	51.4	20.4	20.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.6	56.0	56.0	33.5	23.6	23.6	190.2	23.5	16.8	51.4	20.4	20.4
LOS by Move:	D	E	E	C	C	C	F	C	B	D	C	C
HCM2k95thQ:	4	201	201	462	8	8	9	478	1	117	521	521

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0	3	0	1	2
Lane Group:	L	RT			RT	L	RT		RT	L	T		R	L	RT	RT
#LnsInGrps:	1	1			1	1	1		1	1	3		1	2	3	3
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12			12	12	12		12	12	12		12	12	12	12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.86	0.86		xxxx	0.94	0.94		xxxx	xxxx	0.85		xxxx	0.98	0.98	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.84	0.84		0.93	0.93	0.93		0.93	0.98	0.83		0.93	0.96	0.96	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.84	0.84		0.93	0.93	0.93		0.93	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.08	0.09	0.09		0.31	0.31	0.31		0.00	0.42	0.42		0.07	0.48	0.48	
ArrivalType:		4				4				4				4		
ProgFactor:	0.97	0.99	0.99		0.93	0.85	0.85		1.00	0.86	0.76		0.99	0.82	0.82	
Q1:		0.1	2.5		8.2	0.1	0.1		0.1	9.5	0.0		2.0	10.2	10.2	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.45	0.45	0.45		0.34	0.34	0.34	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.89	0.89	0.89		0.95	0.95	0.95	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.03	0.57	0.51		0.19	0.65	0.65	
Q2:		0.0	1.6		1.9	0.0	0.0		0.1	1.0	0.0		0.3	1.3	1.3	
HCM2KQueue:		0.1	4.1		10.0	0.2	0.2		0.2	10.4	0.0		2.3	11.5	11.5	
70th%Factor:	1.20	1.19	1.19		1.18	1.20	1.20		1.20	1.18	1.20		1.19	1.18	1.18	
HCM2k70thQ:		0.1	4.8		11.8	0.2	0.2		0.2	12.3	0.0		2.8	13.5	13.5	
85th%Factor:	1.60	1.56	1.56		1.51	1.60	1.60		1.60	1.51	1.60		1.58	1.50	1.50	
HCM2k85thQ:		0.1	6.4		15.2	0.3	0.3		0.3	15.7	0.0		3.7	17.3	17.3	
90th%Factor:	1.80	1.73	1.73		1.64	1.80	1.80		1.80	1.64	1.80		1.76	1.63	1.63	
HCM2k90thQ:		0.1	7.0		7.0	16.5	0.3		0.3	17.1	0.0		4.1	18.7	18.7	
95th%Factor:	2.10	1.98	1.98		1.84	2.09	2.09		2.09	1.84	2.10		2.03	1.82	1.82	
HCM2k95thQ:		0.1	8.1		8.1	18.5	0.3		0.3	0.4	19.1		0.0	4.7	20.9	20.9
98th%Factor:	2.69	2.43	2.43		2.16	2.69	2.69		2.69	2.15	2.70		2.54	2.11	2.11	
HCM2k98thQ:		0.2	9.9		9.9	21.7	0.4		0.4	0.5	22.4		0.0	5.9	24.3	24.3

Cumul + No Build Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Eight Mile & SR 99 E Frontage

Cycle (sec):	100	Critical Vol./Cap.(X):	0.174
Loss Time (sec):	12	Average Delay (sec/veh):	3.9
Optimal Cycle:	27	Level Of Service:	A

Street Name:	SR 99 East Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	2 0	1	1 0	1 1	0
Volume Module:AM Peak Hour												
Base Vol:	5	1	3	8	2	5	5	461	5	8	461	3
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	1	3	8	2	5	5	461	5	8	461	3
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	1	3	8	2	5	5	461	5	8	461	3
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	5	1	3	9	2	5	5	501	5	9	501	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	1	3	9	2	5	5	501	5	9	501	3
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	5	1	3	9	2	5	5	501	5	9	501	3
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.87	0.87	0.93	0.88	0.88	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	1.00	0.25	0.75	1.00	0.29	0.71	1.00	2.00	1.00	1.00	1.99	0.01
Final Sat.:	1769	413	1240	1769	475	1188	1769	3538	1583	1769	3511	23
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.14	0.14
Crit Moves:	****				****		****				****	
Green/Cycle:	0.02	0.02	0.02	0.03	0.03	0.03	0.02	0.81	0.81	0.03	0.82	0.82
Volume/Cap:	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.18	0.00	0.18	0.17	0.17
Delay/Veh:	51.1	51.8	51.8	49.0	49.5	49.5	51.1	2.2	1.8	49.2	2.0	2.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.1	51.8	51.8	49.0	49.5	49.5	51.1	2.2	1.8	49.2	2.0	2.0
LOS by Move:	D	D	D	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	18	16	16	23	21	21	9	10	0	23	11	11

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	2 0	1	1 0	1 1	0
Lane Group:	L	RT	RT	L	RT	RT	L	T	R	L	RT	RT
#LnsInGrps:	1	1	1	1	1	1	1	2	1	1	2	2
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	0.89	0.89	xxxx	0.89	0.89	xxxx	xxxx	0.85	xxxx	1.00	1.00
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.87	0.87	0.93	0.88	0.88	0.93	0.98	0.83	0.93	0.98	0.98
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Fnl Sat Adj:	0.93	0.87	0.87	0.93	0.88	0.88	0.93	0.93	0.83	0.93	0.93	0.93
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.02	0.02	0.02	0.03	0.03	0.03	0.02	0.81	0.81	0.03	0.82	0.82
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	1.00	1.00	0.99	0.99	0.99	1.00	0.00	0.00	0.99	0.00	0.00
Q1:	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.0	0.0	0.2	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.18	0.18	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.99	0.99	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.09	0.93	0.84	1.00	1.00	1.00
Q2:	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.2	0.0	0.2	0.2	0.2
HCM2KQueue:	0.3	0.3	0.3	0.4	0.4	0.4	0.2	0.2	0.0	0.4	0.2	0.2
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	0.4	0.4	0.4	0.5	0.5	0.5	0.2	0.2	0.0	0.5	0.3	0.3
85th%Factor:	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
HCM2k85thQ:	0.6	0.5	0.5	0.7	0.7	0.7	0.3	0.3	0.0	0.7	0.3	0.3
90th%Factor:	1.79	1.79	1.79	1.79	1.79	1.79	1.80	1.80	1.80	1.79	1.80	1.80
HCM2k90thQ:	0.6	0.6	0.6	0.8	0.7	0.7	0.3	0.4	0.0	0.8	0.4	0.4
95th%Factor:	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.10	2.09	2.09	2.09
HCM2k95thQ:	0.7	0.7	0.7	0.9	0.8	0.8	0.3	0.4	0.0	0.9	0.4	0.4
98th%Factor:	2.67	2.68	2.68	2.67	2.67	2.67	2.69	2.68	2.70	2.67	2.68	2.68
HCM2k98thQ:	0.9	0.8	0.8	1.2	1.1	1.1	0.4	0.5	0.0	1.2	0.6	0.6

Cumul + No Build Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

Cycle (sec):	100	Critical Vol./Cap.(X):	0.860
Loss Time (sec):	12	Average Delay (sec/veh):	43.3
Optimal Cycle:	94	Level Of Service:	D

Street Name:	Holman Road						Lt. Col. Mark Taylor Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	1 0	1	1 0	0 1	0
Volume Module:	AM Peak Hour											
Base Vol:	29	272	155	388	399	30	39	388	23	302	398	218
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	29	272	155	388	399	30	39	388	23	302	398	218
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	29	272	155	388	399	30	39	388	23	302	398	218
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	32	296	168	422	434	33	42	422	25	328	433	237
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	32	296	168	422	434	33	42	422	25	328	433	237
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	32	296	168	422	434	33	42	422	25	328	433	237
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.98	0.83	0.93	0.93	0.93
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.00	1.00	1.00	0.65	0.35
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	1862	1583	1769	1139	624
Capacity Analysis Module:												
Vol/Sat:	0.02	0.06	0.11	0.24	0.09	0.02	0.02	0.23	0.02	0.19	0.38	0.38
Crit Moves:			****	****				****		****		
Green/Cycle:	0.07	0.12	0.12	0.28	0.33	0.33	0.03	0.26	0.26	0.22	0.45	0.45
Volume/Cap:	0.26	0.47	0.86	0.86	0.26	0.06	0.84	0.86	0.06	0.86	0.84	0.84
Delay/Veh:	45.2	41.3	72.7	48.6	24.5	22.9	119.7	49.4	27.6	55.4	32.5	32.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.2	41.3	72.7	48.6	24.5	22.9	119.7	49.4	27.6	55.4	32.5	32.5
LOS by Move:	D	D	E	D	C	C	F	D	C	E	C	C
HCM2k95thQ:	46	149	278	659	156	30	83	591	25	563	821	821

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        1  0  3  0  1    1  0  3  0  1    1  0  1  0  1    1  0  0  1  0
Lane Group:    L    T     R     L    T     R     L    T     R     L   RT     RT
#LnsInGrps:     1    3     1     1    3     1     1    1     1     1    1     1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:          8                8                8                8
% Hev Veh:            2                2                2                2
Grade:               0%               0%               0%               0%
Parking/Hr:          No               No               No               No
Bus Stp/Hr:           0                0                0                0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:          0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:           0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Hev Veh Adj: 0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
Grade Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Parking Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx 1.00  1.00
Bus Stp Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx 1.00  1.00
Area Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
RT Adj:      xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx 0.95  0.95
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.93 0.98  0.83  0.93 0.98  0.83  0.93 0.98  0.83  0.93 0.93  0.93
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 0.91  1.00  1.00 0.91  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Fnl Sat Adj: 0.93 0.89  0.83  0.93 0.89  0.83  0.93 0.98  0.83  0.93 0.93  0.93
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
```


Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Green/Cycle: 0.07 0.12  0.12  0.28 0.33  0.33  0.03 0.26  0.26  0.22 0.45  0.45
ArrivalType:         4                4                4                4
ProgFactor:  0.98 0.97  0.99  0.97 0.86  0.84  1.00 0.98  0.89  0.98 0.91  0.91
Q1:           0.8  2.7   4.6  10.8  2.8   0.5   1.2 10.9   0.5   8.6 15.0  15.0
UpstreamVC:  0.36 0.36  0.36  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00
UpstreamAdj: 0.94 0.94  0.94  0.00 0.00  0.00  1.00 1.00  1.00  0.00 0.00  0.00
EarlyArrAdj: 0.20 0.29  0.26  1.00 1.00  1.00  0.12 0.48  0.43  1.00 1.00  1.00
Q2:           0.1  0.3   1.2   4.1  0.3   0.1   0.4  2.3   0.0   3.9  4.2   4.2
HCM2KQueue:   0.9  3.0   5.7  15.0  3.1   0.6   1.6 13.2   0.5  12.5 19.3  19.3
------------|---------------||---------------||---------------||---------------|
70th%Factor: 1.20 1.19  1.19  1.17 1.19  1.20  1.20 1.17  1.20  1.17 1.16  1.16
HCM2k70thQ:   1.1  3.5   6.8  17.5  3.7   0.7   1.9 15.5   0.6  14.7 22.4  22.4
------------|---------------||---------------||---------------||---------------|
85th%Factor: 1.59 1.57  1.55  1.48 1.57  1.59  1.58 1.49  1.60  1.50 1.46  1.46
HCM2k85thQ:   1.4  4.7   8.9  22.2  4.9   0.9   2.6 19.7   0.8  18.7 28.1  28.1
------------|---------------||---------------||---------------||---------------|
90th%Factor: 1.78 1.74  1.70  1.59 1.74  1.79  1.77 1.61  1.79  1.61 1.55  1.55
HCM2k90thQ:   1.6  5.2   9.8  23.8  5.4   1.0   2.9 21.2   0.9  20.2 29.9  29.9
------------|---------------||---------------||---------------||---------------|
95th%Factor: 2.07 2.01  1.94  1.76 2.00  2.08  2.05 1.79  2.08  1.80 1.71  1.71
HCM2k95thQ:   1.8  6.0  11.1  26.4  6.3   1.2   3.3 23.6   1.0  22.5 32.8  32.8
------------|---------------||---------------||---------------||---------------|
98th%Factor: 2.63 2.50  2.34  2.02 2.49  2.66  2.58 2.06  2.66  2.08 1.93  1.93
HCM2k98thQ:   2.3  7.4  13.5  30.2  7.8   1.6   4.2 27.2   1.3  26.1 37.1  37.1
```

Cumul + No Build Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.691
Loss Time (sec):	12	Average Delay (sec/veh):	30.0
Optimal Cycle:	58	Level Of Service:	C

Street Name:	West Lane						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	4 0	1	2 0	4 0	1	2 0	2 0	1	2 0	2 0	1
Volume Module:	AM Peak Hour											
Base Vol:	296	930	159	105	1557	83	101	300	256	281	257	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	296	930	159	105	1557	83	101	300	256	281	257	47
Added Vol:	0	1	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	296	931	159	105	1557	83	101	300	256	281	257	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	322	1012	173	114	1692	90	110	326	278	305	279	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	322	1012	173	114	1692	90	110	326	278	305	279	51
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	322	1012	173	114	1692	90	110	326	278	305	279	51
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.93	0.83	0.90	0.93	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	3538	1583	3432	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.09	0.15	0.11	0.03	0.25	0.06	0.03	0.09	0.18	0.09	0.08	0.03
Crit Moves:	****				****				****	****		
Green/Cycle:	0.14	0.41	0.41	0.09	0.36	0.36	0.11	0.25	0.25	0.13	0.27	0.27
Volume/Cap:	0.69	0.37	0.27	0.37	0.69	0.16	0.29	0.36	0.69	0.69	0.29	0.12
Delay/Veh:	45.6	20.8	20.0	43.5	28.0	21.8	41.3	30.9	38.8	46.3	28.9	27.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.6	20.8	20.0	43.5	28.0	21.8	41.3	30.9	38.8	46.3	28.9	27.5
LOS by Move:	D	C	C	D	C	C	D	C	D	D	C	C
HCM2k95thQ:	297	244	148	105	547	82	92	205	405	288	165	56

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2 0	4 0	1	2 0	4 0	1	2 0	2 0	1	2 0	2 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	4	1	2	4	1	2	2	1	2	2	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Fnl Sat Adj:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.93	0.83	0.90	0.93	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.14	0.41	0.41	0.09	0.36	0.36	0.11	0.25	0.25	0.13	0.27	0.27
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.82	0.80	0.98	0.91	0.83	0.97	0.92	0.95	0.98	0.90	0.89
Q1:	4.3	4.4	2.6	1.5	10.0	1.4	1.4	3.6	6.7	4.1	2.9	0.9
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	1.9	0.6	0.4	0.6	2.1	0.2	0.4	0.6	2.0	1.8	0.4	0.1
HCM2KQueue:	6.2	5.0	2.9	2.1	12.1	1.6	1.8	4.2	8.7	6.0	3.3	1.1
70th%Factor:	1.19	1.19	1.19	1.19	1.17	1.20	1.20	1.19	1.18	1.19	1.19	1.20
HCM2k70thQ:	7.3	5.9	3.5	2.5	14.2	1.9	2.2	4.9	10.2	7.1	3.9	1.3
85th%Factor:	1.54	1.55	1.57	1.58	1.50	1.58	1.58	1.56	1.52	1.55	1.57	1.59
HCM2k85thQ:	9.5	7.8	4.6	3.3	18.2	2.5	2.8	6.5	13.2	9.2	5.2	1.7
90th%Factor:	1.69	1.71	1.75	1.76	1.62	1.77	1.77	1.73	1.66	1.70	1.74	1.78
HCM2k90thQ:	10.5	8.5	5.1	3.6	19.6	2.8	3.2	7.2	14.4	10.1	5.8	1.9
95th%Factor:	1.93	1.95	2.01	2.04	1.81	2.05	2.04	1.98	1.87	1.93	2.00	2.07
HCM2k95thQ:	11.9	9.8	5.9	4.2	21.9	3.3	3.7	8.2	16.2	11.5	6.6	2.2
98th%Factor:	2.32	2.38	2.50	2.55	2.09	2.58	2.57	2.43	2.21	2.33	2.48	2.62
HCM2k98thQ:	14.3	11.9	7.3	5.3	25.4	4.1	4.6	10.1	19.2	13.9	8.2	2.8

Cumul + No Build Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.515
Loss Time (sec):	12	Average Delay (sec/veh):	33.4
Optimal Cycle:	42	Level Of Service:	C

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:	AM Peak Hour											
Base Vol:	157	362	96	134	624	93	110	502	136	189	487	65
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	157	362	96	134	624	93	110	502	136	189	487	65
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	157	362	96	134	624	93	110	502	136	189	487	65
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	171	393	104	146	678	101	120	546	148	205	529	71
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	171	393	104	146	678	101	120	546	148	205	529	71
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	171	393	104	146	678	101	120	546	148	205	529	71
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.10	0.08	0.07	0.08	0.13	0.06	0.07	0.11	0.09	0.12	0.10	0.04
Crit Moves:	****				****			****		****		
Green/Cycle:	0.19	0.22	0.22	0.23	0.26	0.26	0.17	0.21	0.21	0.23	0.26	0.26
Volume/Cap:	0.52	0.36	0.30	0.36	0.52	0.25	0.40	0.52	0.45	0.52	0.40	0.17
Delay/Veh:	38.0	33.5	33.4	32.8	32.0	29.6	37.7	35.5	35.5	35.1	30.5	28.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.0	33.5	33.4	32.8	32.0	29.6	37.7	35.5	35.5	35.1	30.5	28.6
LOS by Move:	D	C	C	C	C	C	D	D	D	D	C	C
HCM2k95thQ:	219	170	123	169	289	109	172	276	206	251	215	74

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	3	0	1	1	0	3	0	1	1	0	3	0	1	1
Lane Group:	L		T		R	L		T		R	L		T		R	R
#LnsInGrps:	1		3		1	1		3		1	1		3		1	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12		12	12		12		12	12		12		12	12
CrsswalkWid:			8					8					8			
% Hev Veh:			2					2					2			
Grade:			0%					0%					0%			
Parking/Hr:			No					No					No			
Bus Stp/Hr:			0					0					0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0					0					0			
ExclusiveRT:			Include					Include					Include			
% RT Prtct:			0					0					0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.19	0.22	0.22		0.23	0.26	0.26		0.17	0.21	0.21		0.23	0.26	0.26	
ArrivalType:		4				4				4				4		
ProgFactor:	0.96	0.93	0.93		0.93	0.93	0.90		0.95	0.95	0.94		0.94	0.92	0.90	
Q1:	4.1	3.2	2.3		3.2	5.5	2.0		2.8	4.7	3.4		4.7	4.1	1.4	
UpstreamVC:	0.36	0.36	0.36		0.26	0.26	0.26		0.00	0.00	0.00		0.34	0.34	0.34	
UpstreamAdj:	0.94	0.94	0.94		0.98	0.98	0.98		0.00	0.00	0.00		0.95	0.95	0.95	
EarlyArrAdj:	0.36	0.40	0.36		0.42	0.46	0.42		1.00	1.00	1.00		0.40	0.45	0.41	
Q2:	0.4	0.2	0.2		0.2	0.5	0.1		0.6	1.0	0.8		0.4	0.3	0.1	
HCM2KQueue:	4.5	3.4	2.4		3.4	6.0	2.1		3.5	5.7	4.2		5.1	4.4	1.4	
70th%Factor:	1.19	1.19	1.19		1.19	1.19	1.19		1.19	1.19	1.19		1.19	1.19	1.20	
HCM2k70thQ:	5.3	4.1	2.9		4.0	7.1	2.6		4.1	6.8	5.0		6.1	5.2	1.7	
85th%Factor:	1.56	1.57	1.58		1.57	1.55	1.58		1.57	1.55	1.56		1.55	1.56	1.59	
HCM2k85thQ:	6.9	5.3	3.8		5.3	9.2	3.4		5.4	8.8	6.5		8.0	6.8	2.3	
90th%Factor:	1.72	1.74	1.75		1.74	1.70	1.76		1.74	1.70	1.72		1.71	1.72	1.77	
HCM2k90thQ:	7.7	5.9	4.2		5.9	10.1	3.8		6.0	9.7	7.2		8.8	7.5	2.6	
95th%Factor:	1.97	2.00	2.02		2.00	1.93	2.03		2.00	1.94	1.98		1.95	1.97	2.05	
HCM2k95thQ:	8.8	6.8	4.9		6.8	11.5	4.4		6.9	11.0	8.2		10.0	8.6	3.0	
98th%Factor:	2.41	2.47	2.53		2.47	2.33	2.55		2.47	2.35	2.43		2.37	2.42	2.60	
HCM2k98thQ:	10.7	8.4	6.1		8.4	13.9	5.5		8.5	13.4	10.1		12.2	10.5	3.7	

Cumul + No Build Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 Morada Ln & SR99 W Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.414
Loss Time (sec):	12	Average Delay (sec/veh):	24.3
Optimal Cycle:	36	Level Of Service:	C

Street Name:	SR 99 West Frontage Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	2 0	0 1	0	1 0	2 1	0	1 0	2 0	1
Volume Module:AM Peak Hour												
Base Vol:	3	28	45	421	35	12	17	474	2	90	513	276
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	28	45	421	35	12	17	474	2	90	513	276
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	28	45	421	35	12	17	474	2	90	513	276
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	3	30	49	458	38	13	18	515	2	98	558	300
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	30	49	458	38	13	18	515	2	98	558	300
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	30	49	458	38	13	18	515	2	98	558	300
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.90	0.94	0.94	0.93	0.89	0.89	0.93	0.93	0.83
Lanes:	2.00	1.00	1.00	2.00	0.74	0.26	1.00	2.99	0.01	1.00	2.00	1.00
Final Sat.:	3432	1862	1583	3432	1334	457	1769	5057	21	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.02	0.03	0.13	0.03	0.03	0.01	0.10	0.10	0.06	0.16	0.19
Crit Moves:			****	****			****					****
Green/Cycle:	0.01	0.07	0.07	0.32	0.38	0.38	0.03	0.31	0.31	0.17	0.46	0.46
Volume/Cap:	0.07	0.22	0.41	0.41	0.07	0.07	0.41	0.33	0.33	0.33	0.34	0.41
Delay/Veh:	49.5	44.3	46.5	26.8	19.6	19.6	54.1	26.4	26.4	37.1	17.6	18.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.5	44.3	46.5	26.8	19.6	19.6	54.1	26.4	26.4	37.1	17.6	18.5
LOS by Move:	D	D	D	C	B	B	D	C	C	D	B	B
HCM2k95thQ:	6	54	99	255	41	41	30	187	187	123	215	233

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #22 Morada Ln & SR99 W Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2 0	1 0	1		2 0	0	1	0	1 0	2	1	0	1 0	2	0	1
Lane Group:	L	T	R		L	RT	RT		L	RT	RT		L	T	R	
#LnsInGrps:	2	1	1		2	1	1		1	3	3		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.96	0.96		xxxx	1.00	1.00		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.94	0.94		0.93	0.98	0.98		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		0.97	1.00	1.00		1.00	0.91	0.91		1.00	0.95	1.00	
Fnl Sat Adj:	0.90	0.98	0.83		0.90	0.94	0.94		0.93	0.89	0.89		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #22 Morada Ln & SR99 W Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.01	0.07	0.07	0.32	0.38	0.38	0.03	0.31	0.31	0.17	0.46	0.46
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.98	0.98	0.89	0.80	0.80	0.99	0.88	0.88	0.95	0.77	0.78
Q1:	0.0	0.8	1.3	4.5	0.7	0.7	0.5	3.5	3.5	2.3	4.0	4.3
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.22	0.22	0.22
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.85	0.85	0.98	0.98	0.98
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.10	0.45	0.45	0.35	0.66	0.60
Q2:	0.1	0.3	0.7	0.7	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.4
HCM2KQueue:	0.1	1.1	1.9	5.2	0.8	0.8	0.6	3.8	3.8	2.4	4.4	4.8
70th%Factor:	1.20	1.20	1.20	1.19	1.20	1.20	1.20	1.19	1.19	1.19	1.19	1.19
HCM2k70thQ:	0.1	1.3	2.3	6.2	1.0	1.0	0.7	4.5	4.5	2.9	5.2	5.7
85th%Factor:	1.60	1.59	1.58	1.55	1.59	1.59	1.59	1.56	1.56	1.58	1.56	1.56
HCM2k85thQ:	0.2	1.7	3.1	8.1	1.3	1.3	0.9	5.9	5.9	3.8	6.8	7.4
90th%Factor:	1.80	1.78	1.76	1.71	1.78	1.78	1.79	1.73	1.73	1.75	1.72	1.72
HCM2k90thQ:	0.2	1.9	3.4	9.0	1.4	1.4	1.0	6.5	6.5	4.3	7.5	8.2
95th%Factor:	2.10	2.07	2.04	1.95	2.07	2.07	2.08	1.99	1.99	2.02	1.97	1.96
HCM2k95thQ:	0.3	2.2	3.9	10.2	1.7	1.7	1.2	7.5	7.5	4.9	8.6	9.3
98th%Factor:	2.69	2.62	2.56	2.37	2.64	2.64	2.66	2.45	2.45	2.53	2.41	2.39
HCM2k98thQ:	0.3	2.8	5.0	12.4	2.1	2.1	1.5	9.2	9.2	6.2	10.5	11.4

Cumul + No Build Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 West Ln & West Ln Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.769
Loss Time (sec):	12	Average Delay (sec/veh):	25.4
Optimal Cycle:	71	Level Of Service:	C

Street Name:	West Lane						West Lane Frontage Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3	1 0	1 0	3	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:	AM Peak Hour											
Base Vol:	229	1210	53	17	1977	31	42	32	215	77	21	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	229	1210	53	17	1977	31	42	32	215	77	21	6
Added Vol:	0	1	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	229	1211	53	17	1977	31	42	32	215	77	21	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	249	1316	58	18	2149	34	46	35	234	84	23	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	249	1316	58	18	2149	34	46	35	234	84	23	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	249	1316	58	18	2149	34	46	35	234	84	23	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.89	0.89	0.93	0.85	0.85	0.93	0.95	0.95
Lanes:	1.00	3.83	0.17	1.00	3.94	0.06	1.00	0.13	0.87	1.00	0.78	0.22
Final Sat.:	1769	6455	282	1769	6660	104	1769	210	1408	1769	1400	400
Capacity Analysis Module:												
Vol/Sat:	0.14	0.20	0.20	0.01	0.32	0.32	0.03	0.17	0.17	0.05	0.02	0.02
Crit Moves:	****				****			****		****		
Green/Cycle:	0.18	0.57	0.57	0.03	0.42	0.42	0.17	0.22	0.22	0.06	0.11	0.11
Volume/Cap:	0.77	0.36	0.36	0.36	0.77	0.77	0.15	0.77	0.77	0.77	0.15	0.15
Delay/Veh:	49.5	11.5	11.5	51.8	26.2	26.2	35.6	46.8	46.8	73.9	40.9	40.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.5	11.5	11.5	51.8	26.2	26.2	35.6	46.8	46.8	73.9	40.9	40.9
LOS by Move:	D	B	B	D	C	C	D	D	D	E	D	D
HCM2k95thQ:	353	187	187	51	692	692	62	439	439	212	46	46

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 3	1 0		1	0 3	1 0		1	0 0	1 0		1	0 0	1 0	
Lane Group:	L	RT	RT		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	4	4		1	4	4		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.99	0.99		xxxx	1.00	1.00		xxxx	0.87	0.87		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.97	0.97		0.93	0.98	0.98		0.93	0.85	0.85		0.93	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	0.91		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.89		0.93	0.89	0.89		0.93	0.85	0.85		0.93	0.95	0.95	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.18	0.57	0.57		0.03	0.42	0.42		0.17	0.22	0.22		0.06	0.11	0.11	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.60	0.60		0.99	0.90	0.90		0.94	0.97	0.97		0.99	0.97	0.97	
Q1:	6.4	3.4	3.4		0.5	12.9	12.9		1.0	6.8	6.8		2.3	0.7	0.7	
UpstreamVC:	0.45	0.45	0.45		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.89	0.89	0.89		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	0.33	0.68	0.68		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	1.0	0.4	0.4		0.5	2.9	2.9		0.2	2.6	2.6		2.0	0.2	0.2	
HCM2KQueue:	7.4	3.8	3.8		1.0	15.8	15.8		1.2	9.5	9.5		4.3	0.9	0.9	
70th%Factor:	1.18	1.19	1.19		1.20	1.17	1.17		1.20	1.18	1.18		1.19	1.20	1.20	
HCM2k70thQ:	8.8	4.5	4.5		1.2	18.5	18.5		1.4	11.2	11.2		5.1	1.1	1.1	
85th%Factor:	1.53	1.56	1.56		1.59	1.48	1.48		1.59	1.52	1.52		1.56	1.59	1.59	
HCM2k85thQ:	11.4	5.9	5.9		1.6	23.4	23.4		1.9	14.4	14.4		6.7	1.4	1.4	
90th%Factor:	1.68	1.73	1.73		1.78	1.58	1.58		1.78	1.65	1.65		1.72	1.78	1.78	
HCM2k90thQ:	12.5	6.5	6.5		1.8	25.0	25.0		2.1	15.6	15.6		7.4	1.6	1.6	
95th%Factor:	1.90	1.99	1.99		2.07	1.75	1.75		2.06	1.85	1.85		1.97	2.07	2.07	
HCM2k95thQ:	14.1	7.5	7.5		2.1	27.7	27.7		2.5	17.5	17.5		8.5	1.8	1.8	
98th%Factor:	2.26	2.45	2.45		2.63	2.00	2.00		2.61	2.18	2.18		2.42	2.63	2.63	
HCM2k98thQ:	16.8	9.2	9.2		2.6	31.6	31.6		3.1	20.6	20.6		10.4	2.3	2.3	

Cumul + No Build Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 West Lane & Knickerbocker Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.731
Loss Time (sec):	12	Average Delay (sec/veh):	24.3
Optimal Cycle:	64	Level Of Service:	C

Street Name:	West Lane												Knickerbocker Drive											
Approach:	North Bound				South Bound				East Bound				West Bound											
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected								
Rights:	Include					Include					Include					Include								
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0						
Y+R:	4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0						
Lanes:	1	0	3	1	0	1	0	3	1	0	1	0	0	1	0	1	0	0	1	0				
Volume Module:	AM Peak Hour																							
Base Vol:	125	1322	35			98	2159	147			174	80	101			73	86	53						
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
Initial Bse:	125	1322	35			98	2159	147			174	80	101			73	86	53						
Added Vol:	0	1	0			0	0	0			0	0	0			0	0	0						
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0						
Initial Fut:	125	1323	35			98	2159	147			174	80	101			73	86	53						
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
PHF Adj:	0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92						
PHF Volume:	136	1438	38			107	2347	160			189	87	110			79	93	58						
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0						
Reduced Vol:	136	1438	38			107	2347	160			189	87	110			79	93	58						
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
FinalVolume:	136	1438	38			107	2347	160			189	87	110			79	93	58						
Saturation Flow Module:																								
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900						
Adjustment:	0.93	0.89	0.89			0.93	0.88	0.88			0.93	0.90	0.90			0.93	0.92	0.92						
Lanes:	1.00	3.90	0.10			1.00	3.75	0.25			1.00	0.44	0.56			1.00	0.62	0.38						
Final Sat.:	1769	6577	174			1769	6282	428			1769	754	952			1769	1086	670						
Capacity Analysis Module:																								
Vol/Sat:	0.08	0.22	0.22			0.06	0.37	0.37			0.11	0.12	0.12			0.04	0.09	0.09						
Crit Moves:	****						****				****						****							
Green/Cycle:	0.11	0.48	0.48			0.13	0.51	0.51			0.15	0.19	0.19			0.07	0.12	0.12						
Volume/Cap:	0.73	0.45	0.45			0.45	0.73	0.73			0.73	0.61	0.61			0.61	0.73	0.73						
Delay/Veh:	57.2	17.2	17.2			41.4	19.9	19.9			51.0	40.4	40.4			52.9	55.1	55.1						
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
AdjDel/Veh:	57.2	17.2	17.2			41.4	19.9	19.9			51.0	40.4	40.4			52.9	55.1	55.1						
LOS by Move:	E	B	B			D	B	B			D	D	D			D	E	E						
HCM2k95thQ:	202	292	292			140	589	589			338	300	300			170	293	293						

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	1	0	3	1	0	1	0	3	1	0	1	0	0	1	0	1	0	0	1	0				
Lane Group:	L		RT		RT	L		RT		RT	L		RT		RT	L		RT		RT				
#LnsInGrps:	1		4		4	1		4		4	1		1		1	1		1		1				
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12				
CrsswalkWid:			8					8					8					8						
% Hev Veh:			2					2					2					2						
Grade:			0%					0%					0%					0%						
Parking/Hr:			No					No					No					No						
Bus Stp/Hr:			0					0					0					0						
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0					0					0					0						
ExclusiveRT:			Include					Include					Include					Include						
% RT Prtct:			0					0					0					0						
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx						
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
Hev Veh Adj:	0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98						
Grade Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
Parking Adj:	xxxx	1.00	1.00			xxxx	1.00	1.00			xxxx	1.00	1.00			xxxx	1.00	1.00						
Bus Stp Adj:	xxxx	1.00	1.00			xxxx	1.00	1.00			xxxx	1.00	1.00			xxxx	1.00	1.00						
Area Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
RT Adj:	xxxx	1.00	1.00			xxxx	0.99	0.99			xxxx	0.92	0.92			xxxx	0.94	0.94						
LT Adj:	0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx						
PedBike Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
HCM Sat Adj:	0.93	0.98	0.98			0.93	0.97	0.97			0.93	0.90	0.90			0.93	0.92	0.92						
Usr Sat Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
MLF Sat Adj:	1.00	0.91	0.91			1.00	0.91	0.91			1.00	1.00	1.00			1.00	1.00	1.00						
Fnl Sat Adj:	0.93	0.89	0.89			0.93	0.88	0.88			0.93	0.90	0.90			0.93	0.92	0.92						
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.11	0.48	0.48	0.13	0.51	0.51	0.15	0.19	0.19	0.07	0.12	0.12
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.76	0.76	0.97	0.81	0.81	0.98	0.96	0.96	0.99	0.99	0.99
Q1:	3.6	5.7	5.7	2.6	12.1	12.1	4.9	4.8	4.8	2.1	4.0	4.0
UpstreamVC:	0.67	0.67	0.67	0.77	0.77	0.77	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.69	0.69	0.69	0.55	0.55	0.55	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.18	0.47	0.47	0.17	0.39	0.39	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.5	0.4	0.4	0.1	1.0	1.0	2.2	1.4	1.4	1.3	2.1	2.1
HCM2KQueue:	4.1	6.1	6.1	2.8	13.2	13.2	7.1	6.2	6.2	3.4	6.1	6.1
70th%Factor:	1.19	1.19	1.19	1.19	1.17	1.17	1.18	1.19	1.19	1.19	1.19	1.19
HCM2k70thQ:	4.9	7.2	7.2	3.3	15.4	15.4	8.4	7.4	7.4	4.1	7.2	7.2
85th%Factor:	1.56	1.55	1.55	1.57	1.49	1.49	1.54	1.54	1.54	1.57	1.54	1.54
HCM2k85thQ:	6.4	9.3	9.3	4.4	19.7	19.7	10.9	9.6	9.6	5.3	9.4	9.4
90th%Factor:	1.73	1.70	1.70	1.75	1.61	1.61	1.68	1.69	1.69	1.74	1.70	1.70
HCM2k90thQ:	7.0	10.3	10.3	4.9	21.2	21.2	11.9	10.6	10.6	5.9	10.3	10.3
95th%Factor:	1.98	1.93	1.93	2.01	1.79	1.79	1.90	1.92	1.92	2.00	1.93	1.93
HCM2k95thQ:	8.1	11.7	11.7	5.6	23.6	23.6	13.5	12.0	12.0	6.8	11.7	11.7
98th%Factor:	2.43	2.33	2.33	2.51	2.06	2.06	2.28	2.32	2.32	2.47	2.33	2.33
HCM2k98thQ:	9.9	14.1	14.1	7.0	27.2	27.2	16.2	14.5	14.5	8.4	14.2	14.2

Cumul + No Build Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.817
Loss Time (sec):	12	Average Delay (sec/veh):	35.0
Optimal Cycle:	81	Level Of Service:	C

Street Name:	West Lane						Hammer Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	4 0	1	2 0	4 0	1	2 0	4 0	1	2 0	4 0	1
Volume Module:	AM Peak Hour											
Base Vol:	116	953	271	699	1481	126	158	777	95	544	801	381
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	116	953	271	699	1481	126	158	777	95	544	801	381
Added Vol:	0	1	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	116	954	271	699	1481	126	158	777	95	544	801	381
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	126	1037	295	760	1610	137	172	845	103	591	871	414
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	126	1037	295	760	1610	137	172	845	103	591	871	414
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	126	1037	295	760	1610	137	172	845	103	591	871	414
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.04	0.15	0.19	0.22	0.24	0.09	0.05	0.12	0.07	0.17	0.13	0.26
Crit Moves:			****	****			****					****
Green/Cycle:	0.07	0.23	0.23	0.27	0.43	0.43	0.06	0.16	0.16	0.22	0.32	0.32
Volume/Cap:	0.55	0.67	0.82	0.82	0.55	0.20	0.82	0.78	0.41	0.78	0.40	0.82
Delay/Veh:	48.0	36.4	50.2	39.9	21.4	17.8	67.9	44.0	38.8	41.8	26.6	41.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.0	36.4	50.2	39.9	21.4	17.8	67.9	44.0	38.8	41.8	26.6	41.3
LOS by Move:	D	D	D	D	C	B	E	D	D	D	C	D
HCM2k95thQ:	140	410	494	503	381	98	232	408	157	399	235	512

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	4	0	2	0	4	0	2	0	4	0	2	0	4	0
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	4	1		2	4	1		2	4	1		2	4	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.07	0.23	0.23		0.27	0.43	0.43		0.06	0.16	0.16		0.22	0.32	0.32	
ArrivalType:	4				4				4				4			
ProgFactor:	0.99	0.96	0.98		0.97	0.83	0.77		1.00	0.98	0.96		0.97	0.89	0.96	
Q1:	1.7	6.9	7.6		9.9	7.6	1.8		2.4	6.1	2.5		7.7	4.6	10.1	
UpstreamVC:	0.00	0.00	0.00		0.73	0.73	0.73		0.00	0.00	0.00		0.76	0.76	0.76	
UpstreamAdj:	0.00	0.00	0.00		0.61	0.61	0.61		0.00	0.00	0.00		0.56	0.56	0.56	
EarlyArrAdj:	1.00	1.00	1.00		0.29	0.39	0.35		1.00	1.00	1.00		0.23	0.30	0.27	
Q2:	1.1	1.9	3.2		1.2	0.5	0.1		2.3	2.7	0.7		0.8	0.2	1.1	
HCM2KQueue:	2.8	8.8	10.8		11.0	8.1	1.9		4.7	8.7	3.1		8.5	4.8	11.2	
70th%Factor:	1.19	1.18	1.18		1.18	1.18	1.20		1.19	1.18	1.19		1.18	1.19	1.18	
HCM2k70thQ:	3.3	10.4	12.7		13.0	9.6	2.3		5.6	10.3	3.7		10.1	5.7	13.2	
85th%Factor:	1.57	1.52	1.51		1.51	1.53	1.58		1.56	1.52	1.57		1.53	1.56	1.51	
HCM2k85thQ:	4.4	13.4	16.3		16.6	12.4	3.0		7.4	13.3	4.9		13.0	7.5	16.9	
90th%Factor:	1.75	1.66	1.63		1.63	1.67	1.76		1.72	1.66	1.74		1.66	1.71	1.63	
HCM2k90thQ:	4.9	14.5	17.6		18.0	13.5	3.4		8.1	14.5	5.5		14.1	8.2	18.3	
95th%Factor:	2.01	1.87	1.83		1.83	1.88	2.04		1.96	1.87	2.00		1.87	1.96	1.82	
HCM2k95thQ:	5.6	16.4	19.7		20.1	15.3	3.9		9.3	16.3	6.3		16.0	9.4	20.5	
98th%Factor:	2.51	2.21	2.14		2.13	2.24	2.56		2.39	2.21	2.49		2.22	2.39	2.12	
HCM2k98thQ:	7.0	19.4	23.1		23.5	18.1	4.9		11.3	19.3	7.8		18.9	11.5	23.8	

Cumul + No Build Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.764
Loss Time (sec):	12	Average Delay (sec/veh):	33.3
Optimal Cycle:	70	Level Of Service:	C

Street Name:	Hammer Lane						Holman Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2	1 0	2 0	3	0 1	2 0	3	1 0	2 0	3	1 0
Volume Module:	AM Peak Hour											
Base Vol:	311	303	82	190	622	305	327	1522	288	180	1525	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	311	303	82	190	622	305	327	1522	288	180	1525	86
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	311	303	82	190	622	305	327	1522	288	180	1525	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	338	329	89	207	676	332	355	1654	313	196	1658	93
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	338	329	89	207	676	332	355	1654	313	196	1658	93
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	338	329	89	207	676	332	355	1654	313	196	1658	93
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.86	0.86	0.90	0.89	0.83	0.90	0.87	0.87	0.90	0.88	0.88
Lanes:	2.00	2.36	0.64	2.00	3.00	1.00	2.00	3.36	0.64	2.00	3.79	0.21
Final Sat.:	3432	3873	1048	3432	5083	1583	3432	5562	1053	3432	6365	359
Capacity Analysis Module:												
Vol/Sat:	0.10	0.09	0.09	0.06	0.13	0.21	0.10	0.30	0.30	0.06	0.26	0.26
Crit Moves:	****					****	****				****	
Green/Cycle:	0.13	0.24	0.24	0.17	0.27	0.27	0.14	0.40	0.40	0.08	0.34	0.34
Volume/Cap:	0.76	0.36	0.36	0.36	0.48	0.76	0.76	0.74	0.74	0.74	0.76	0.76
Delay/Veh:	49.8	32.1	32.1	37.3	30.6	41.2	49.0	26.8	26.8	56.1	30.9	30.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.8	32.1	32.1	37.3	30.6	41.2	49.0	26.8	26.8	56.1	30.9	30.9
LOS by Move:	D	C	C	D	C	D	D	C	C	E	C	C
HCM2k95thQ:	334	191	191	134	276	429	260	563	563	231	620	620

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2 0	2	1 0	2 0	3	0 1	2 0	3	1 0	2 0	3	1 0
Lane Group:	L	RT	RT	L	T	R	L	RT	RT	L	RT	RT
#LnsInGrps:	2	3	3	2	3	1	2	4	4	2	4	4
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	1.00	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	1.00	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	0.97	0.97	xxxx	xxxx	0.85	xxxx	0.98	0.98	xxxx	0.99	0.99
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.95	0.95	0.93	0.98	0.83	0.93	0.96	0.96	0.93	0.97	0.97
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Fnl Sat Adj:	0.90	0.86	0.86	0.90	0.89	0.83	0.90	0.87	0.87	0.90	0.88	0.88
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul + No Build Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.13	0.24	0.24	0.17	0.27	0.27	0.14	0.40	0.40	0.08	0.34	0.34
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.93	0.93	0.95	0.92	0.96	0.99	0.91	0.91	0.99	0.94	0.94
Q1:	4.6	3.3	3.3	2.5	5.3	8.1	4.8	11.6	11.6	2.7	11.2	11.2
UpstreamVC:	0.00	0.00	0.00	0.52	0.52	0.52	0.78	0.78	0.78	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.85	0.85	0.85	0.53	0.53	0.53	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	0.30	0.42	0.38	0.17	0.32	0.32	1.00	1.00	1.00
Q2:	2.4	0.6	0.6	0.2	0.4	1.1	0.5	0.9	0.9	2.0	2.8	2.8
HCM2KQueue:	7.0	3.8	3.8	2.7	5.7	9.2	5.3	12.5	12.5	4.7	14.0	14.0
70th%Factor:	1.18	1.19	1.19	1.19	1.19	1.18	1.19	1.17	1.17	1.19	1.17	1.17
HCM2k70thQ:	8.3	4.6	4.6	3.2	6.8	10.9	6.3	14.7	14.7	5.6	16.4	16.4
85th%Factor:	1.54	1.56	1.56	1.57	1.55	1.52	1.55	1.50	1.50	1.56	1.49	1.49
HCM2k85thQ:	10.8	6.0	6.0	4.2	8.8	14.0	8.3	18.7	18.7	7.3	20.8	20.8
90th%Factor:	1.68	1.73	1.73	1.75	1.70	1.65	1.71	1.61	1.61	1.72	1.60	1.60
HCM2k90thQ:	11.8	6.7	6.7	4.7	9.7	15.2	9.1	20.2	20.2	8.1	22.3	22.3
95th%Factor:	1.91	1.98	1.98	2.02	1.94	1.86	1.95	1.80	1.80	1.96	1.78	1.78
HCM2k95thQ:	13.3	7.6	7.6	5.4	11.0	17.2	10.4	22.5	22.5	9.2	24.8	24.8
98th%Factor:	2.28	2.44	2.44	2.51	2.35	2.19	2.36	2.08	2.08	2.40	2.04	2.04
HCM2k98thQ:	16.0	9.4	9.4	6.7	13.3	20.2	12.6	26.1	26.1	11.3	28.5	28.5

Cumul + No Build Alt AM Pk Hr

Future Queue Length Report (feet)

Node	Intersection	Northbound L	T	R	Southbound L	T	R	Eastbound L	T	R	Westbound L	T	R
#3	[HCM2k95thQ]:	224	397	225	701	389	251	214	470	107	198	627	627
#4	[HCM2k95thQ]:	355	236	265	333	420	175	119	452	196	307	450	450
#5	[HCM2k95thQ]:	130	311	468	526	360	111	187	651	106	472	604	604
#6	[HCM2k95thQ]:	70	368	673	1242	248	21	117	611	37	1077	242	430
#7	[HCM2k95thQ]:	95	95	95	159	159	159	77	156	156	92	136	136
#8	[HCM2k95thQ]:	360	204	76	128	745	672	447	829	829	190	622	622
#9	[HCM2k95thQ]:	0	0	0	490	0	67	140	312	1	2	479	230
#10	[HCM2k95thQ]:	0	0	0	0	0	6	0	17	0	0	27	27
#11	[HCM2k95thQ]:	353	51	29	48	151	418	234	318	533	58	388	13
#12	[HCM2k95thQ]:	4	201	201	462	8	8	9	478	1	117	521	521
#13	[HCM2k95thQ]:	18	16	16	23	21	21	9	10	0	23	11	11
#17	[HCM2k95thQ]:	46	149	278	659	156	30	83	591	25	563	821	821
#18	[HCM2k95thQ]:	297	244	148	105	547	82	92	205	405	288	165	56
#19	[HCM2k95thQ]:	219	170	123	169	289	109	172	276	206	251	215	74
#22	[HCM2k95thQ]:	6	54	99	255	41	41	30	187	187	123	215	233
#24	[HCM2k95thQ]:	353	187	187	51	692	692	62	439	439	212	46	46
#25	[HCM2k95thQ]:	202	292	292	140	589	589	338	300	300	170	293	293
#26	[HCM2k95thQ]:	140	410	494	503	381	98	232	408	157	399	235	512
#27	[HCM2k95thQ]:	334	191	191	134	276	429	260	563	563	231	620	620

Cumul + No Build Alt PM Pk Hr

Scenario Report

Scenario:	Cumul + No Build Alt PM
Command:	Cumul + No Build Alt PM
Volume:	Cumul No Build PM
Geometry:	Cumul No Build
Impact Fee:	Default Impact Fee
Trip Generation:	PM Pk Hr
Trip Distribution:	Cumul No Bridge PM
Paths:	Cumul No Build
Routes:	Default Route
Configuration:	Default Configuration

Cumul + No Build Alt PM Pk Hr

Trip Generation Report

Forecast for PM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
4	Industrial	21.40	Indust KSF	0.05	0.17	1	4	5	100.0
	Zone 4 Subtotal					1	4	5	100.0
TOTAL						1	4	5	100.0

Cumul + No Build Alt PM Pk Hr

Trip Distribution Report

Percent Of Trips Cumul No Bridge PM

To Gates

Zone	1	2	3	4	5	6	7	8	9	10	11
4	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	2.0

To Gates

Zone	14	15	16	17	18	19	20	21	22	23
4	1.0	2.0	5.0	1.0	2.0	29.0	10.0	1.0	2.0	14.0

Cumul + No Build Alt PM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	F	94.0	1.207	F	94.0	1.207	+ 0.000 D/V
# 4 Eight Mile Rd & Davis Rd	D	39.1	0.838	D	39.1	0.838	+ 0.000 D/V
# 5 Eight Mile & Lower Sacto Rd	F	84.7	1.111	F	84.7	1.111	+ 0.000 D/V
# 6 West Lane & Armstrong Road	F	147.5	1.397	F	147.5	1.397	+ 0.000 D/V
# 7 West Lane & Ham Lane	B	12.6	0.508	B	12.6	0.508	+ 0.000 D/V
# 8 Eight Mile Rd & West Ln	F	91.5	1.180	F	91.6	1.180	+ 0.103 D/V
# 9 Eight Mile Road & Ham Lane	C	25.2	0.816	C	25.2	0.816	+ 0.027 D/V
# 10 Eight Mile & Leach Rd/St J	A	1.2	0.461	A	1.2	0.461	+ 0.000 D/V
# 11 Eight Mile & MickeGrove/Holman	D	36.2	0.866	D	36.2	0.866	+ 0.006 D/V
# 12 Eight Mile & SR 99 W Frontage	C	31.5	0.892	C	31.5	0.892	+ 0.005 D/V
# 13 Eight Mile & SR 99 E Frontage	A	4.0	0.234	A	4.0	0.234	+ 0.000 D/V
# 17 Holman & Lt Col Mark Taylor	F	101.5	1.206	F	101.5	1.206	+ 0.000 D/V
# 18 Morada Lane & West Lane	C	32.0	0.763	C	32.0	0.763	-0.000 D/V
# 19 Morada Lane & Holman Road	D	35.1	0.623	D	35.1	0.623	+ 0.000 D/V
# 22 Morada Ln & SR99 W Frontage Rd	C	24.6	0.656	C	24.6	0.656	+ 0.000 D/V
# 24 West Ln & West Ln Frontage Rd	C	29.9	0.873	C	29.9	0.873	+ 0.005 D/V
# 25 West Lane & Knickerbocker Dr	D	35.2	0.884	D	35.2	0.884	+ 0.001 D/V
# 26 West Lane & Hammer Lane	F	89.2	1.251	F	89.2	1.251	-0.007 D/V
# 27 Hammer Lane & Holman Road	D	50.5	1.024	D	50.5	1.024	+ 0.000 D/V

Cumul + No Build Alt PM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]

Cumul + No Build Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.207
Loss Time (sec):	12	Average Delay (sec/veh):	94.0
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	PM Peak Hour											
Base Vol:	199	737	201	525	536	219	396	1872	111	274	1936	415
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	199	737	201	525	536	219	396	1872	111	274	1936	415
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	199	737	201	525	536	219	396	1872	111	274	1936	415
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	216	801	218	571	583	238	430	2035	121	298	2104	451
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	216	801	218	571	583	238	430	2035	121	298	2104	451
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	216	801	218	571	583	238	430	2035	121	298	2104	451
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	3.29	0.71
Final Sat.:	1769	3538	1583	1769	3538	1583	3432	6778	1583	3432	5431	1164
Capacity Analysis Module:												
Vol/Sat:	0.12	0.23	0.14	0.32	0.16	0.15	0.13	0.30	0.08	0.09	0.39	0.39
Crit Moves:		****		****			****				****	
Green/Cycle:	0.19	0.19	0.19	0.27	0.26	0.26	0.10	0.33	0.33	0.10	0.32	0.32
Volume/Cap:	0.63	1.21	0.74	1.21	0.63	0.58	1.21	0.91	0.23	0.91	1.21	1.21
Delay/Veh:	40.8	147	47.5	148.2	34.1	34.1	161.4	38.2	24.5	73.0	132	131.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.8	147	47.5	148.2	34.1	34.1	161.4	38.2	24.5	73.0	132	131.7
LOS by Move:	D	F	D	F	C	C	F	D	C	E	F	F
HCM2k95thQ:	328	1023	370	1295	407	319	507	668	107	247	1419	1419

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 2	0 1		1	0 2	0 1		2	0 4	0 1		2	0 3	1 0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	2	1		1	2	1		2	4	1		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.90	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.19	0.19	0.19		0.27	0.26	0.26		0.10	0.33	0.33		0.10	0.32	0.32	
ArrivalType:		4				4				4				4		
ProgFactor:	0.96	1.00	0.98		1.00	0.94	0.94		1.00	0.98	0.86		1.00	1.00	1.00	
Q1:	5.3	11.7	5.6		15.9	7.1	5.4		6.2	14.5	2.1		4.2	19.5	19.5	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.98	0.98	0.98		0.81	0.81	0.81	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.14	0.14	0.14		0.47	0.47	0.47	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.04	0.07	0.07		0.12	0.25	0.25	
Q2:	1.6	13.1	2.3		16.5	1.6	1.3		5.0	0.7	0.0		0.8	16.4	16.4	
HCM2KQueue:	6.9	24.8	7.8		32.4	8.7	6.7		11.1	15.2	2.1		5.1	35.9	35.9	
70th%Factor:	1.18	1.15	1.18		1.14	1.18	1.18		1.18	1.17	1.19		1.19	1.14	1.14	
HCM2k70thQ:	8.1	28.6	9.3		37.1	10.3	7.9		13.1	17.8	2.5		6.0	40.9	40.9	
85th%Factor:	1.54	1.43	1.53		1.40	1.52	1.54		1.51	1.48	1.58		1.55	1.39	1.39	
HCM2k85thQ:	10.6	35.5	12.0		45.4	13.3	10.3		16.8	22.5	3.3		7.8	49.9	49.9	
90th%Factor:	1.68	1.52	1.67		1.48	1.66	1.69		1.63	1.59	1.76		1.71	1.47	1.47	
HCM2k90thQ:	11.6	37.6	13.1		47.9	14.4	11.3		18.1	24.1	3.7		8.6	52.6	52.6	
95th%Factor:	1.91	1.65	1.89		1.60	1.87	1.91		1.82	1.76	2.03		1.95	1.58	1.58	
HCM2k95thQ:	13.1	40.9	14.8		51.8	16.3	12.8		20.3	26.7	4.3		9.9	56.8	56.8	
98th%Factor:	2.29	1.85	2.25		1.78	2.21	2.30		2.13	2.01	2.55		2.38	1.76	1.76	
HCM2k98thQ:	15.7	45.8	17.6		57.7	19.3	15.3		23.6	30.6	5.4		12.0	63.3	63.3	

Cumul + No Build Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.838
Loss Time (sec):	12	Average Delay (sec/veh):	39.1
Optimal Cycle:	87	Level Of Service:	D

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	PM Peak Hour											
Base Vol:	328	601	272	251	448	128	228	1782	185	356	1751	186
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	328	601	272	251	448	128	228	1782	185	356	1751	186
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	328	601	272	251	448	128	228	1782	185	356	1751	186
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	357	653	296	273	487	139	248	1937	201	387	1903	202
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	357	653	296	273	487	139	248	1937	201	387	1903	202
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	357	653	296	273	487	139	248	1937	201	387	1903	202
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.88	0.88
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	3.62	0.38
Final Sat.:	1769	3538	1583	1769	3538	1583	3432	6778	1583	3432	6041	642
Capacity Analysis Module:												
Vol/Sat:	0.20	0.18	0.19	0.15	0.14	0.09	0.07	0.29	0.13	0.11	0.32	0.32
Crit Moves:	****				****			****		****		
Green/Cycle:	0.24	0.22	0.22	0.18	0.16	0.16	0.09	0.34	0.34	0.13	0.39	0.39
Volume/Cap:	0.84	0.83	0.84	0.84	0.84	0.54	0.81	0.84	0.37	0.84	0.81	0.81
Delay/Veh:	49.8	44.8	53.9	57.3	50.9	40.5	60.2	33.3	25.3	55.0	29.6	29.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.8	44.8	53.9	57.3	50.9	40.5	60.2	33.3	25.3	55.0	29.6	29.6
LOS by Move:	D	D	D	E	D	D	E	C	C	D	C	C
HCM2k95thQ:	576	561	512	489	468	221	186	615	187	398	738	738

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	2 0	1		1 0	2 0	1		2 0	4 0	1		2 0	3 1	0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	2	1		1	2	1		2	4	1		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.90	0.89	0.83		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.24	0.22	0.22	0.18	0.16	0.16	0.09	0.34	0.34	0.13	0.39	0.39
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.98	0.98	0.99	0.99	0.97	0.99	0.96	0.87	0.99	0.93	0.93
Q1:	9.2	8.9	7.7	7.2	6.8	3.4	3.5	13.0	3.7	5.4	13.4	13.4
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.91	0.91	0.91	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.29	0.29	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.07	0.16	0.15	1.00	1.00	1.00
Q2:	3.6	3.5	3.5	3.5	3.4	1.1	0.3	0.8	0.1	3.1	3.6	3.6
HCM2KQueue:	12.8	12.5	11.2	10.7	10.2	4.5	3.8	13.8	3.8	8.5	17.0	17.0
70th%Factor:	1.17	1.17	1.18	1.18	1.18	1.19	1.19	1.17	1.19	1.18	1.17	1.17
HCM2k70thQ:	15.1	14.6	13.2	12.6	12.0	5.3	4.5	16.2	4.5	10.0	19.8	19.8
85th%Factor:	1.50	1.50	1.51	1.51	1.51	1.56	1.56	1.49	1.56	1.53	1.47	1.47
HCM2k85thQ:	19.2	18.7	16.9	16.1	15.4	7.0	5.9	20.6	5.9	13.0	25.0	25.0
90th%Factor:	1.61	1.61	1.63	1.63	1.64	1.72	1.73	1.60	1.73	1.66	1.57	1.57
HCM2k90thQ:	20.7	20.1	18.3	17.5	16.7	7.7	6.5	22.1	6.5	14.1	26.7	26.7
95th%Factor:	1.79	1.80	1.82	1.83	1.84	1.97	1.99	1.78	1.99	1.87	1.73	1.73
HCM2k95thQ:	23.0	22.4	20.5	19.6	18.7	8.8	7.5	24.6	7.5	15.9	29.5	29.5
98th%Factor:	2.07	2.08	2.12	2.14	2.16	2.41	2.45	2.05	2.45	2.22	1.97	1.97
HCM2k98thQ:	26.6	26.0	23.9	22.9	21.9	10.8	9.2	28.3	9.2	18.9	33.5	33.5

Cumul + No Build Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec): 100 Critical Vol./Cap.(X): 1.111
Loss Time (sec): 12 Average Delay (sec/veh): 84.7
Optimal Cycle: 180 Level Of Service: F

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	PM Peak Hour											
Base Vol:	174	785	424	631	504	110	212	1982	92	532	1995	520
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	174	785	424	631	504	110	212	1982	92	532	1995	520
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	174	785	424	631	504	110	212	1982	92	532	1995	520
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	189	853	461	686	548	120	230	2154	100	578	2168	565
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	189	853	461	686	548	120	230	2154	100	578	2168	565
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	189	853	461	686	548	120	230	2154	100	578	2168	565
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.86	0.86
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	4.00	1.00	2.00	3.17	0.83
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	6778	1583	3432	5210	1358
Capacity Analysis Module:												
Vol/Sat:	0.06	0.24	0.29	0.20	0.15	0.08	0.07	0.32	0.06	0.17	0.42	0.42
Crit Moves:			****	****				****		****		
Green/Cycle:	0.12	0.26	0.26	0.18	0.33	0.33	0.06	0.29	0.29	0.15	0.38	0.38
Volume/Cap:	0.47	0.92	1.11	1.11	0.47	0.23	1.10	1.11	0.22	1.11	1.10	1.10
Delay/Veh:	42.2	49.9	114.6	111.5	27.2	24.8	139.8	93.5	27.4	115.8	84.7	84.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.2	49.9	114.6	111.5	27.2	24.8	139.8	93.5	27.4	115.8	84.7	84.7
LOS by Move:	D	D	F	F	C	C	F	F	C	F	F	F
HCM2k95thQ:	166	752	987	813	316	121	373	1192	110	718	1421	1421

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	4	0	1	2	0	3	1	0
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R		L	RT		RT
#LnsInGrps:	2	2	1		2	2	1		2	4	1		2	4	4					
HCM Ops Input Saturation Adj Module:																				
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12					
CrsswalkWid:	8				8				8				8							
% Hev Veh:	2				2				2				2							
Grade:	0%				0%				0%				0%							
Parking/Hr:	No				No				No				No							
Bus Stp/Hr:	0				0				0				0							
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >																			
Cnft Ped/Hr:	0				0				0				0							
ExclusiveRT:	Include				Include				Include				Include							
% RT Prtct:	0				0				0				0							
HCM Ops f(lt) Adj Case Module:																				
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx					
HCM Ops Saturation Adj Module:																				
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00					
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98					
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00					
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00					
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00					
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00					
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.97	0.97					
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx					
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00					
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.95	0.95					
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00					
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91					
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.86	0.86					
Delay Adjustment Factor Module:																				
Coordinated:	< < < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >																			
Signal Type:	< < < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >																			
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00					

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.12	0.26	0.26		0.18	0.33	0.33		0.06	0.29	0.29		0.15	0.38	0.38	
ArrivalType:	4				4				4				4			
ProgFactor:	0.98	0.99	1.00		1.00	0.89	0.86		1.00	1.00	0.89		1.00	1.00	1.00	
Q1:	2.5	12.0	12.8		9.8	5.7	2.1		3.3	16.4	1.9		8.3	20.9	20.9	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.9	5.4	11.0		9.2	0.9	0.3		4.6	13.0	0.3		8.2	15.1	15.1	
HCM2KQueue:	3.3	17.4	23.8		19.0	6.6	2.4		7.9	29.5	2.2		16.5	35.9	35.9	
70th%Factor:	1.19	1.16	1.16		1.16	1.18	1.19		1.18	1.15	1.19		1.17	1.14	1.14	
HCM2k70thQ:	4.0	20.3	27.5		22.1	7.8	2.9		9.4	33.8	2.6		19.3	41.0	41.0	
85th%Factor:	1.57	1.47	1.44		1.46	1.54	1.58		1.53	1.41	1.58		1.47	1.39	1.39	
HCM2k85thQ:	5.2	25.5	34.2		27.8	10.2	3.8		12.1	41.6	3.4		24.3	50.0	50.0	
90th%Factor:	1.74	1.57	1.52		1.55	1.69	1.75		1.67	1.49	1.76		1.58	1.47	1.47	
HCM2k90thQ:	5.8	27.3	36.2		29.6	11.1	4.2		13.2	44.0	3.8		26.0	52.7	52.7	
95th%Factor:	2.00	1.73	1.66		1.71	1.92	2.03		1.89	1.62	2.03		1.74	1.58	1.58	
HCM2k95thQ:	6.6	30.1	39.5		32.5	12.6	4.8		14.9	47.7	4.4		28.7	56.8	56.8	
98th%Factor:	2.47	1.96	1.86		1.93	2.30	2.53		2.24	1.80	2.55		1.98	1.76	1.76	
HCM2k98thQ:	8.2	34.1	44.3		36.7	15.2	6.0		17.8	53.2	5.5		32.7	63.3	63.3	

Cumul + No Build Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec):	100	Critical Vol./Cap.(X):	1.397
Loss Time (sec):	12	Average Delay (sec/veh):	147.5
Optimal Cycle:	180	Level Of Service:	F

Street Name:	West Lane												Armstrong Road											
Approach:	North Bound				South Bound				East Bound				West Bound											
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected								
Rights:	Include					Include					Include					Include								
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0						
Y+R:	4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0						
Lanes:	1	0	2	0	1	1	0	2	0	1	1	0	2	0	1	1	0	2	0	1				
Volume Module:	PM Peak Hour																							
Base Vol:	45	772	449			666	461	28			57	573	23			547	576	575						
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
Initial Bse:	45	772	449			666	461	28			57	573	23			547	576	575						
Added Vol:	0	0	0			0	0	0			0	0	0			0	0	0						
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0						
Initial Fut:	45	772	449			666	461	28			57	573	23			547	576	575						
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
PHF Adj:	0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92						
PHF Volume:	49	839	488			724	501	30			62	623	25			595	626	625						
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0						
Reduced Vol:	49	839	488			724	501	30			62	623	25			595	626	625						
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
FinalVolume:	49	839	488			724	501	30			62	623	25			595	626	625						
Saturation Flow Module:																								
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900						
Adjustment:	0.93	0.93	0.83			0.93	0.93	0.83			0.93	0.93	0.83			0.93	0.93	0.83						
Lanes:	1.00	2.00	1.00			1.00	2.00	1.00			1.00	2.00	1.00			1.00	2.00	1.00						
Final Sat.:	1769	3538	1583			1769	3538	1583			1769	3538	1583			1769	3538	1583						
Capacity Analysis Module:																								
Vol/Sat:	0.03	0.24	0.31			0.41	0.14	0.02			0.04	0.18	0.02			0.34	0.18	0.39						
Crit Moves:			****			****						****				****								
Green/Cycle:	0.08	0.22	0.22			0.29	0.43	0.43			0.03	0.13	0.13			0.24	0.34	0.34						
Volume/Cap:	0.33	1.07	1.40			1.40	0.33	0.04			1.17	1.40	0.13			1.40	0.53	1.17						
Delay/Veh:	44.5	93.2	234.4			225.7	19.1	16.6			227.1	236	39.1			230.6	27.2	129.5						
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
AdjDel/Veh:	44.5	93.2	234.4			225.7	19.1	16.6			227.1	236	39.1			230.6	27.2	129.5						
LOS by Move:	D	F	F			F	B	B			F	F	D			F	C	F						
HCM2k95thQ:	88	917	1349			1885	214	22			250	980	38			1591	363	1341						

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																				
Lanes:	1	0	2	0	1	1	0	2	0	1	1	0	2	0	1	1	0	2	0	1
Lane Group:	L		T		R	L		T		R	L		T		R	L		T		R
#LnsInGrps:	1		2		1	1		2		1	1		2		1	1		2		1
HCM Ops Input Saturation Adj Module:																				
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12
CrsswalkWid:			8					8					8					8		
% Hev Veh:			2					2					2					2		
Grade:			0%					0%					0%					0%		
Parking/Hr:			No					No					No					No		
Bus Stp/Hr:			0					0					0					0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																			
Cnft Ped/Hr:			0					0					0					0		
ExclusiveRT:			Include					Include					Include					Include		
% RT Prtct:			0					0					0					0		
HCM Ops f(lt) Adj Case Module:																				
f(lt) Case:	1		xxxx		xxxx	1		xxxx		xxxx	1		xxxx		xxxx	1		xxxx		xxxx
HCM Ops Saturation Adj Module:																				
Ln Wid Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Hev Veh Adj:	0.98		0.98		0.98	0.98		0.98		0.98	0.98		0.98		0.98	0.98		0.98		0.98
Grade Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Parking Adj:	xxxx		xxxx		1.00	xxxx		xxxx		1.00	xxxx		xxxx		1.00	xxxx		xxxx		1.00
Bus Stp Adj:	xxxx		xxxx		1.00	xxxx		xxxx		1.00	xxxx		xxxx		1.00	xxxx		xxxx		1.00
Area Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
RT Adj:	xxxx		xxxx		0.85	xxxx		xxxx		0.85	xxxx		xxxx		0.85	xxxx		xxxx		0.85
LT Adj:	0.95		xxxx		xxxxx	0.95		xxxx		xxxxx	0.95		xxxx		xxxxx	0.95		xxxx		xxxxx
PedBike Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
HCM Sat Adj:	0.93		0.98		0.83	0.93		0.98		0.83	0.93		0.98		0.83	0.93		0.98		0.83
Usr Sat Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
MLF Sat Adj:	1.00		0.95		1.00	1.00		0.95		1.00	1.00		0.95		1.00	1.00		0.95		1.00
Fnl Sat Adj:	0.93		0.93		0.83	0.93		0.93		0.83	0.93		0.93		0.83	0.93		0.93		0.83
Delay Adjustment Factor Module:																				
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																			
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >																			
DelAdjFctr:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.08	0.22	0.22	0.29	0.43	0.43	0.03	0.13	0.13	0.24	0.34	0.34
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	1.00	1.00	1.00	0.79	0.75	1.00	1.00	0.96	1.00	0.90	1.00
Q1:	1.3	12.3	13.6	20.1	3.9	0.4	1.7	9.1	0.6	16.5	6.6	17.4
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.5	9.6	20.3	28.9	0.5	0.0	3.4	14.5	0.1	24.2	1.1	16.3
HCM2KQueue:	1.7	21.9	33.9	49.0	4.3	0.4	5.1	23.6	0.7	40.7	7.7	33.7
70th%Factor:	1.20	1.16	1.14	1.13	1.19	1.20	1.19	1.16	1.20	1.14	1.18	1.14
HCM2k70thQ:	2.1	25.3	38.7	55.3	5.2	0.5	6.1	27.3	0.9	46.3	9.1	38.5
85th%Factor:	1.58	1.44	1.40	1.36	1.56	1.60	1.55	1.44	1.59	1.38	1.53	1.40
HCM2k85thQ:	2.7	31.6	47.4	66.5	6.8	0.7	8.0	33.9	1.2	56.1	11.8	47.1
90th%Factor:	1.77	1.53	1.47	1.43	1.72	1.79	1.71	1.52	1.79	1.45	1.67	1.47
HCM2k90thQ:	3.1	33.5	50.0	70.3	7.5	0.7	8.8	35.9	1.3	59.1	12.8	49.6
95th%Factor:	2.05	1.68	1.59	1.54	1.97	2.09	1.95	1.66	2.08	1.56	1.89	1.59
HCM2k95thQ:	3.5	36.7	54.0	75.4	8.6	0.9	10.0	39.2	1.5	63.6	14.5	53.6
98th%Factor:	2.58	1.89	1.77	1.72	2.42	2.67	2.37	1.86	2.65	1.74	2.25	1.77
HCM2k98thQ:	4.4	41.2	60.1	84.4	10.5	1.1	12.2	43.9	1.9	71.0	17.3	59.8

Cumul + No Build Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.508
Loss Time (sec): 9 Average Delay (sec/veh): 12.6
Optimal Cycle: 35 Level Of Service: B

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0 1	1 0	1	0 1 1 0
Volume Module:	PM Peak Hour											
Base Vol:	54	32	36	47	23	30	55	1062	30	46	1062	36
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	54	32	36	47	23	30	55	1062	30	46	1062	36
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	54	32	36	47	23	30	55	1062	30	46	1062	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	59	35	39	51	25	33	60	1154	33	50	1154	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	59	35	39	51	25	33	60	1154	33	50	1154	39
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	59	35	39	51	25	33	60	1154	33	50	1154	39
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.78	0.78	0.78	0.76	0.76	0.76	0.93	0.93	0.93	0.93	0.93	0.93
Lanes:	0.44	0.26	0.30	0.47	0.23	0.30	1.00	1.95	0.05	1.00	1.93	0.07
Final Sat.:	658	390	439	681	333	435	1769	3427	97	1769	3405	115
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.07	0.07	0.07	0.03	0.34	0.34	0.03	0.34	0.34
Crit Moves:		****					****				****	
Green/Cycle:	0.18	0.18	0.18	0.18	0.18	0.18	0.07	0.68	0.68	0.06	0.67	0.67
Volume/Cap:	0.51	0.51	0.51	0.43	0.43	0.43	0.51	0.50	0.50	0.50	0.51	0.51
Delay/Veh:	38.9	38.9	38.9	37.9	37.9	37.9	48.7	8.0	8.0	49.6	8.5	8.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.9	38.9	38.9	37.9	37.9	37.9	48.7	8.0	8.0	49.6	8.5	8.5
LOS by Move:	D	D	D	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	206	206	206	164	164	164	126	199	199	112	222	222

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	1	1 0	1	0	1	1 0
Lane Group:	LTR	LTR	LTR		LTR	LTR	LTR		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	2	2		1	2	2	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	5	5	5		5	5	5		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	1.00	1.00	1.00		1.00	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	1.00	1.00	1.00		1.00	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	0.96	0.96	0.96		0.96	0.96	0.96		xxxx	1.00	1.00		xxxx	1.00	1.00	
LT Adj:	0.83	0.83	0.83		0.81	0.81	0.81		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.78	0.78	0.78		0.76	0.76	0.76		0.93	0.98	0.98		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	0.95		1.00	0.95	0.95	
Fnl Sat Adj:	0.78	0.78	0.78		0.76	0.76	0.76		0.93	0.93	0.93		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	100	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	16.56	16.56	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	17.56	17.56	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	17.56	17.56	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	1	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	1	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	59	51	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	0.44	0.47	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	0.47	0.44	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	1.63	1.42	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	109	133	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	3.03	3.69	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	1.33	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	3.00	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	2.14	2.67	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	0.77	0.77	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	5.66	7.08	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	11.90	10.48	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	1.76	2.21	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	0.53	0.56	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	1.56	1.60	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	1.43	1.64	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	0.16	0.17	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	0.83	0.81	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	0.83	0.81	xxxxxx	xxxxxx

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.18	0.18	0.18	0.18	0.18	0.18	0.07	0.68	0.68	0.06	0.67	0.67
ArrivalType:		4			4			4			4	
ProgFactor:	0.96	0.96	0.96	0.95	0.95	0.95	0.99	0.36	0.36	0.99	0.40	0.40
Q1:	3.2	3.2	3.2	2.6	2.6	2.6	1.6	3.1	3.1	1.3	3.5	3.5
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	1.0	1.0	1.0	0.7	0.7	0.7	0.9	1.0	1.0	0.9	1.0	1.0
HCM2KQueue:	4.2	4.2	4.2	3.3	3.3	3.3	2.5	4.0	4.0	2.2	4.5	4.5
70th%Factor:	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19
HCM2k70thQ:	5.0	5.0	5.0	3.9	3.9	3.9	3.0	4.8	4.8	2.6	5.4	5.4
85th%Factor:	1.56	1.56	1.56	1.57	1.57	1.57	1.58	1.56	1.56	1.58	1.56	1.56
HCM2k85thQ:	6.5	6.5	6.5	5.2	5.2	5.2	3.9	6.3	6.3	3.5	7.0	7.0
90th%Factor:	1.72	1.72	1.72	1.74	1.74	1.74	1.75	1.73	1.73	1.76	1.72	1.72
HCM2k90thQ:	7.2	7.2	7.2	5.7	5.7	5.7	4.4	7.0	7.0	3.9	7.8	7.8
95th%Factor:	1.98	1.98	1.98	2.00	2.00	2.00	2.02	1.98	1.98	2.03	1.97	1.97
HCM2k95thQ:	8.2	8.2	8.2	6.6	6.6	6.6	5.1	8.0	8.0	4.5	8.9	8.9
98th%Factor:	2.43	2.43	2.43	2.48	2.48	2.48	2.53	2.43	2.43	2.54	2.41	2.41
HCM2k98thQ:	10.1	10.1	10.1	8.1	8.1	8.1	6.3	9.8	9.8	5.6	10.9	10.9

Cumul + No Build Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 1.180
Loss Time (sec): 12 Average Delay (sec/veh): 91.6
Optimal Cycle: 180 Level Of Service: F

Street Name:	West Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	3 1	0	2 0	3 1	0
Volume Module:	PM Peak Hour											
Base Vol:	785	848	144	168	756	386	643	1890	493	211	1866	117
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	785	848	144	168	756	386	643	1890	493	211	1866	117
Added Vol:	0	0	0	0	0	0	0	0	0	1	1	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	785	848	144	168	756	386	643	1890	493	212	1867	117
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	853	922	157	183	822	420	699	2054	536	230	2029	127
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	853	922	157	183	822	420	699	2054	536	230	2029	127
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	853	922	157	183	822	420	699	2054	536	230	2029	127
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.86	0.86	0.90	0.88	0.88
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.17	0.83	2.00	3.76	0.24
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	5209	1359	3432	6321	396
Capacity Analysis Module:												
Vol/Sat:	0.25	0.26	0.10	0.05	0.23	0.27	0.20	0.39	0.39	0.07	0.32	0.32
Crit Moves:	****					****	****				****	
Green/Cycle:	0.21	0.36	0.36	0.07	0.22	0.22	0.17	0.38	0.38	0.06	0.27	0.27
Volume/Cap:	1.18	0.72	0.27	0.72	1.03	1.18	1.18	1.04	1.04	1.04	1.18	1.18
Delay/Veh:	134.4	29.6	22.9	55.0	79.8	145.1	138.9	59.8	59.8	117.4	123	123.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	134.4	29.6	22.9	55.0	79.8	145.1	138.9	59.8	59.8	117.4	123	123.4
LOS by Move:	F	C	C	D	E	F	F	E	E	F	F	F
HCM2k95thQ:	949	547	141	216	860	992	885	1244	1244	259	1222	1222

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	3	1	0	
Lane Group:	L	T	R		L	T	R		L	RT	RT		L	RT	RT	
#LnsInGrps:	2	2	1		2	2	1		2	4	4		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.97	0.97		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.95	0.95		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.86	0.86		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.21	0.36	0.36		0.07	0.22	0.22		0.17	0.38	0.38		0.06	0.27	0.27	
ArrivalType:	4				4				4				4			
ProgFactor:	1.00	0.92	0.84		0.99	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q1:	12.2	10.7	2.6		2.5	12.0	11.7		10.0	19.8	19.8		3.3	16.5	16.5	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	1.00	1.00	1.00		0.00	0.00	0.00		0.00	0.00	0.00		1.00	1.00	1.00	
EarlyArrAdj:	0.41	0.58	0.53		1.00	1.00	1.00		1.00	1.00	1.00		0.20	0.49	0.49	
Q2:	10.5	1.4	0.2		1.8	8.3	12.3		11.0	11.2	11.2		2.0	13.9	13.9	
HCM2KQueue:	22.7	12.1	2.8		4.4	20.3	23.9		21.0	31.0	31.0		5.3	30.3	30.3	
70th%Factor:	1.16	1.17	1.19		1.19	1.16	1.15		1.16	1.15	1.15		1.19	1.15	1.15	
HCM2k70thQ:	26.3	14.2	3.3		5.2	23.6	27.6		24.3	35.5	35.5		6.3	34.8	34.8	
85th%Factor:	1.44	1.50	1.57		1.56	1.45	1.44		1.45	1.41	1.41		1.55	1.41	1.41	
HCM2k85thQ:	32.7	18.2	4.4		6.8	29.5	34.3		30.4	43.6	43.6		8.2	42.8	42.8	
90th%Factor:	1.53	1.62	1.75		1.72	1.54	1.52		1.54	1.49	1.49		1.71	1.49	1.49	
HCM2k90thQ:	34.7	19.6	4.9		7.5	31.4	36.4		32.3	46.0	46.0		9.1	45.2	45.2	
95th%Factor:	1.67	1.81	2.01		1.97	1.69	1.66		1.69	1.61	1.61		1.95	1.61	1.61	
HCM2k95thQ:	38.0	21.9	5.6		8.6	34.4	39.7		35.4	49.8	49.8		10.3	48.9	48.9	
98th%Factor:	1.87	2.09	2.51		2.41	1.91	1.86		1.90	1.79	1.79		2.36	1.80	1.80	
HCM2k98thQ:	42.6	25.4	7.0		10.6	38.8	44.5		39.8	55.5	55.5		12.6	54.5	54.5	

Cumul + No Build Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.816
Loss Time (sec): 12 | Average Delay (sec/veh): 25.2
Optimal Cycle: 81 | Level Of Service: C

Street Name:	Ham Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0	4	0	1	1	0	4	0	1
Volume Module:	PM Peak Hour											
Base Vol:	0	0	0	447	0	71	166	2083	0	0	2131	454
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	447	0	71	166	2083	0	0	2131	454
Added Vol:	2	0	2	0	0	0	0	0	1	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	2	0	2	447	0	71	166	2083	1	0	2131	454
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	2	0	2	486	0	77	180	2264	1	0	2316	493
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	0	2	486	0	77	180	2264	1	0	2316	493
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	2	0	2	486	0	77	180	2264	1	0	2316	493
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	0.93	1.00	0.83	0.93	0.89	0.83	1.00	0.89	0.83
Lanes:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	4.00	1.00	1.00	4.00	1.00
Final Sat.:	1769	0	1583	1769	0	1583	1769	6778	1583	1900	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.27	0.00	0.05	0.10	0.33	0.00	0.00	0.34	0.31
Crit Moves:		****		****			****				****	
Green/Cycle:	0.01	0.00	0.01	0.34	0.00	0.33	0.12	0.54	0.54	0.00	0.42	0.42
Volume/Cap:	0.15	0.00	0.17	0.82	0.00	0.15	0.82	0.61	0.00	0.00	0.82	0.74
Delay/Veh:	53.9	0.0	55.2	39.0	0.0	23.9	63.1	16.0	10.4	0.0	27.6	29.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.9	0.0	55.2	39.0	0.0	23.9	63.1	16.0	10.4	0.0	27.6	29.2
LOS by Move:	D	A	E	D	A	C	E	B	B	A	C	C
HCM2k95thQ:	11	0	12	671	0	75	286	450	0	0	720	533

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	1 0	1	0	0	1 0	1	0	4	0 1	1	0	4	0 1
Lane Group:	L		RT	RT	L		RT	RT	L		T	R	L		T	R
#LnsInGrps:	1		1	1	1		1	1	1		4	1	1		4	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		xxxx	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
Hev Veh Adj:	0.98	xxxx	0.98		0.98	xxxx	0.98		0.98	0.98	0.98		xxxx	0.98	0.98	
Grade Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		xxxx	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	1.00	0.83		0.93	1.00	0.83		0.93	0.98	0.83		1.00	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.91	1.00		1.00	0.91	1.00	
Fnl Sat Adj:	0.93	1.00	0.83		0.93	1.00	0.83		0.93	0.89	0.83		1.00	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	1.00		1.00	0.00	1.00		1.00	1.00	1.00		0.00	1.00	1.00	

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.01	0.00	0.01	0.34	0.00	0.33	0.12	0.54	0.54	0.00	0.42	0.42
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	1.00	1.00	0.95	1.00	0.85	0.99	0.72	0.60	1.00	0.92	0.90
Q1:	0.1	0.0	0.1	11.7	0.0	1.3	4.8	8.6	0.0	0.0	14.4	10.4
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.46
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.89	0.89
EarlyArrAdj:	1.00	0.00	1.00	1.00	0.00	1.00	0.30	0.74	0.67	0.00	0.56	0.51
Q2:	0.2	0.0	0.2	3.5	0.0	0.2	1.1	1.2	0.0	0.0	2.2	1.4
HCM2KQueue:	0.2	0.0	0.2	15.3	0.0	1.5	5.9	9.7	0.0	0.0	16.6	11.8
70th%Factor:	1.20	1.20	1.20	1.17	1.20	1.20	1.19	1.18	1.20	1.20	1.17	1.17
HCM2k70thQ:	0.3	0.0	0.3	17.8	0.0	1.8	7.0	11.5	0.0	0.0	19.3	13.8
85th%Factor:	1.60	1.60	1.60	1.48	1.60	1.59	1.55	1.52	1.60	1.60	1.47	1.50
HCM2k85thQ:	0.3	0.0	0.4	22.6	0.0	2.3	9.2	14.8	0.0	0.0	24.4	17.7
90th%Factor:	1.80	1.80	1.80	1.59	1.80	1.77	1.70	1.65	1.80	1.80	1.57	1.62
HCM2k90thQ:	0.4	0.0	0.4	24.2	0.0	2.6	10.1	16.0	0.0	0.0	26.1	19.1
95th%Factor:	2.09	2.10	2.09	1.76	2.10	2.05	1.93	1.85	2.10	2.10	1.74	1.81
HCM2k95thQ:	0.5	0.0	0.5	26.8	0.0	3.0	11.4	18.0	0.0	0.0	28.8	21.3
98th%Factor:	2.68	2.70	2.68	2.01	2.70	2.59	2.33	2.17	2.70	2.70	1.98	2.10
HCM2k98thQ:	0.6	0.0	0.6	30.7	0.0	3.8	13.8	21.1	0.0	0.0	32.8	24.8

Cumul + No Build Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St J

Cycle (sec):	100	Critical Vol./Cap.(X):	0.461
Loss Time (sec):	12	Average Delay (sec/veh):	1.2
Optimal Cycle:	38	Level Of Service:	A

Street Name:	Leach Road/Street J						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	0 1	1	0 0	1 0	1	0 3	1 0	1	0 3	1 0
Volume Module:	PM Peak Hour											
Base Vol:	0	0	0	0	0	4	0	2025	0	0	2527	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	4	0	2025	0	0	2527	4
Added Vol:	0	0	0	0	0	0	0	2	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	4	0	2027	0	0	2527	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	0	0	4	0	2203	0	0	2747	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	4	0	2203	0	0	2747	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	4	0	2203	0	0	2747	4
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	0.83	1.00	0.89	0.91	1.00	0.89	0.89
Lanes:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	4.00	0.00	1.00	3.99	0.01
Final Sat.:	1900	1900	1900	1900	0	1583	1900	6778	0	1900	6767	11
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.41	0.41
Crit Moves:					****		****				****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88	0.00	0.00	0.88	0.88
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	xxxx	0.00	0.37	0.00	0.00	0.46	0.46
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	1.3	1.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	1.3	1.3
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
HCM2k95thQ:	0	0	0	0	0	6	0	23	0	0	44	44

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	1	0	1	1	0	0	1	0	1	0	3	1	0	
Lane Group:	L	T	R		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	4	4		1	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	1.00		xxxx	1.00	xxxxx		xxxx	1.00	1.00	
Hev Veh Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	0.98		xxxx	0.98	xxxxx		xxxx	0.98	0.98	
Grade Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	1.00		xxxx	1.00	xxxxx		xxxx	1.00	1.00	
Parking Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	1.00		xxxx	1.00	xxxxx		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	1.00		xxxx	1.00	xxxxx		xxxx	1.00	1.00	
Area Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	1.00		xxxx	1.00	xxxxx		xxxx	1.00	1.00	
RT Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	0.85		xxxx	xxxx	xxxxx		xxxx	1.00	1.00	
LT Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	1.00	1.00	1.00		1.00	1.00	0.83		1.00	0.98	1.00		1.00	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.91	0.91		1.00	0.91	0.91	
Fnl Sat Adj:	1.00	1.00	1.00		1.00	1.00	0.83		1.00	0.89	0.91		1.00	0.89	0.89	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	0.00	0.00	0.00		0.00	0.00	0.00		1.00	0.00	0.00		1.00	1.00		

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.88	0.00		0.00	0.88	0.88	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	1.00	1.00		1.00	1.00	1.00		0.00	1.00	1.00		0.00	0.00		
Q1:		0.0	0.0	0.0		0.0	0.0	0.1		0.0	0.0	0.0		0.0	0.0	0.0
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.61	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.75	0.00		0.00	0.00	0.00	
EarlyArrAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.74	0.00		0.00	1.00	1.00	
Q2:		0.0	0.0	0.0		0.0	0.0	0.0		0.4	0.0		0.0	0.8	0.8	
HCM2KQueue:		0.0	0.0	0.0		0.0	0.0	0.1		0.0	0.4	0.0		0.0	0.8	0.8
70th%Factor:	1.20	1.20	1.20		1.20	1.20	1.20		1.20	1.20	1.20		1.20	1.20	1.20	
HCM2k70thQ:		0.0	0.0	0.0		0.0	0.0	0.1		0.0	0.5	0.0		0.0	1.0	1.0
85th%Factor:	1.60	1.60	1.60		1.60	1.60	1.60		1.60	1.60	1.60		1.60	1.59	1.59	
HCM2k85thQ:		0.0	0.0	0.0		0.0	0.0	0.2		0.0	0.7	0.0		0.0	1.4	1.4
90th%Factor:	1.80	1.80	1.80		1.80	1.80	1.80		1.80	1.79	1.80		1.80	1.78	1.78	
HCM2k90thQ:		0.0	0.0	0.0		0.0	0.0	0.2		0.0	0.8	0.0		0.0	1.5	1.5
95th%Factor:	2.10	2.10	2.10		2.10	2.10	2.10		2.10	2.09	2.10		2.10	2.07	2.07	
HCM2k95thQ:		0.0	0.0	0.0		0.0	0.0	0.3		0.0	0.9	0.0		0.0	1.8	1.8
98th%Factor:	2.70	2.70	2.70		2.70	2.70	2.69		2.70	2.67	2.70		2.70	2.64	2.64	
HCM2k98thQ:		0.0	0.0	0.0		0.0	0.0	0.3		0.0	1.2	0.0		0.0	2.2	2.2

Cumul + No Build Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Cycle (sec):	100	Critical Vol./Cap.(X):	0.866
Loss Time (sec):	12	Average Delay (sec/veh):	36.2
Optimal Cycle:	96	Level Of Service:	D

Street Name:	Micke Grove Road/Holman Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	4 0	1
Volume Module:	PM Peak Hour											
Base Vol:	636	188	43	42	201	260	404	1609	445	71	1583	27
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	636	188	43	42	201	260	404	1609	445	71	1583	27
Added Vol:	0	0	0	0	0	0	0	1	1	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	636	188	43	42	201	260	404	1610	446	71	1583	27
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	691	204	47	46	218	283	439	1750	485	77	1721	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	691	204	47	46	218	283	439	1750	485	77	1721	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	691	204	47	46	218	283	439	1750	485	77	1721	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	3538	1583	1769	3538	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.20	0.06	0.03	0.03	0.06	0.18	0.13	0.26	0.31	0.02	0.25	0.02
Crit Moves:	****					****	****				****	
Green/Cycle:	0.23	0.30	0.30	0.14	0.21	0.21	0.15	0.41	0.41	0.03	0.29	0.29
Volume/Cap:	0.87	0.19	0.10	0.19	0.30	0.87	0.87	0.63	0.75	0.75	0.87	0.06
Delay/Veh:	46.7	25.8	25.1	38.7	33.8	59.1	56.1	23.9	29.7	73.3	37.8	25.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.7	25.8	25.1	38.7	33.8	59.1	56.1	23.9	29.7	73.3	37.8	25.5
LOS by Move:	D	C	C	D	C	E	E	C	C	E	D	C
HCM2k95thQ:	598	110	47	67	148	513	446	495	578	62	585	27

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	4 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	2	1	1	2	1	2	4	1	2	4	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Fnl Sat Adj:	0.90	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.23	0.30	0.30	0.14	0.21	0.21	0.15	0.41	0.41	0.03	0.29	0.29
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.87	0.86	0.96	0.93	0.98	0.99	0.87	0.90	1.00	0.97	0.87
Q1:	9.3	1.9	0.8	1.1	2.5	7.5	6.1	9.2	10.3	1.1	12.1	0.5
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.89	0.89	0.89
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.33	0.33
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.04	0.17	0.15
Q2:	4.1	0.2	0.1	0.2	0.4	3.8	3.6	1.6	2.6	0.1	1.0	0.0
HCM2KQueue:	13.4	2.2	0.9	1.3	2.9	11.3	9.6	10.8	12.9	1.2	13.1	0.5
70th%Factor:	1.17	1.19	1.20	1.20	1.19	1.18	1.18	1.18	1.17	1.20	1.17	1.20
HCM2k70thQ:	15.7	2.6	1.1	1.6	3.5	13.3	11.4	12.7	15.1	1.4	15.3	0.6
85th%Factor:	1.49	1.58	1.59	1.59	1.57	1.51	1.52	1.51	1.50	1.59	1.49	1.59
HCM2k85thQ:	20.0	3.4	1.5	2.1	4.6	17.0	14.6	16.3	19.3	1.9	19.5	0.8
90th%Factor:	1.60	1.76	1.78	1.77	1.75	1.63	1.65	1.63	1.61	1.78	1.61	1.79
HCM2k90thQ:	21.5	3.8	1.6	2.3	5.1	18.4	15.9	17.7	20.8	2.1	21.0	0.9
95th%Factor:	1.79	2.03	2.07	2.06	2.01	1.82	1.85	1.83	1.79	2.06	1.79	2.08
HCM2k95thQ:	23.9	4.4	1.9	2.7	5.9	20.5	17.9	19.8	23.1	2.5	23.4	1.1
98th%Factor:	2.06	2.55	2.63	2.60	2.50	2.12	2.18	2.13	2.07	2.61	2.07	2.66
HCM2k98thQ:	27.6	5.5	2.4	3.4	7.4	23.9	21.0	23.1	26.7	3.2	27.0	1.4

Cumul + No Build Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Eight Mile & SR 99 W Frontage

Cycle (sec):	100	Critical Vol./Cap.(X):	0.892
Loss Time (sec):	12	Average Delay (sec/veh):	31.5
Optimal Cycle:	106	Level Of Service:	C

Street Name:	SR 99 West Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1 0	1 0	0	1 0	1 0	3	0 1	2 0	2	1 0
Volume Module:	PM Peak Hour											
Base Vol:	2	10	157	340	3	2	6	1724	1	132	1690	396
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	10	157	340	3	2	6	1724	1	132	1690	396
Added Vol:	0	0	0	0	0	0	0	1	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	2	10	157	340	3	2	6	1725	1	132	1690	396
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	2	11	171	370	3	2	7	1875	1	143	1837	430
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	11	171	370	3	2	7	1875	1	143	1837	430
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	2	11	171	370	3	2	7	1875	1	143	1837	430
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.84	0.84	0.93	0.92	0.92	0.93	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	0.06	0.94	1.00	0.60	0.40	1.00	3.00	1.00	2.00	2.43	0.57
Final Sat.:	1769	96	1504	1769	1050	700	1769	5083	1583	3432	4003	938
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.11	0.21	0.00	0.00	0.00	0.37	0.00	0.04	0.46	0.46
Crit Moves:		****		****			****				****	
Green/Cycle:	0.10	0.13	0.13	0.23	0.26	0.26	0.00	0.47	0.47	0.05	0.51	0.51
Volume/Cap:	0.01	0.89	0.89	0.89	0.01	0.01	0.89	0.79	0.00	0.79	0.89	0.89
Delay/Veh:	40.4	78.1	78.1	57.9	27.6	27.6	312.4	24.5	14.3	67.5	26.2	26.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.4	78.1	78.1	57.9	27.6	27.6	312.4	24.5	14.3	67.5	26.2	26.2
LOS by Move:	D	E	E	E	C	C	F	C	B	E	C	C
HCM2k95thQ:	3	399	399	635	6	6	15	698	1	127	945	945

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        1  0  0  1  0    1  0  0  1  0    1  0  3  0  1    2  0  2  1  0
Lane Group:    L   RT     RT    L   RT     RT    L    T     R     L   RT     RT
#LnsInGrps:     1    1     1     1    1     1     1    3     1     2    3     3
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:          8                8                8                8
% Hev Veh:            2                2                2                2
Grade:               0%               0%               0%               0%
Parking/Hr:          No               No               No               No
Bus Stp/Hr:           0                0                0                0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:          0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:           0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Hev Veh Adj: 0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
Grade Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Parking Adj: xxxx 1.00  1.00  xxxx 1.00  1.00  xxxx xxxx  1.00  xxxx 1.00  1.00
Bus Stp Adj: xxxx 1.00  1.00  xxxx 1.00  1.00  xxxx xxxx  1.00  xxxx 1.00  1.00
Area Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
RT Adj:      xxxx 0.86  0.86  xxxx 0.94  0.94  xxxx xxxx  0.85  xxxx 0.97  0.97
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.93 0.84  0.84  0.93 0.92  0.92  0.93 0.98  0.83  0.93 0.95  0.95
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 0.91  1.00  0.97 0.91  0.91
Fnl Sat Adj: 0.93 0.84  0.84  0.93 0.92  0.92  0.93 0.89  0.83  0.90 0.87  0.87
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
```


Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Green/Cycle: 0.10 0.13  0.13  0.23 0.26  0.26  0.00 0.47  0.47  0.05 0.51  0.51
ArrivalType:         4                4                4                4
ProgFactor:  0.96 0.99  0.99  0.98 0.88  0.88  1.00 0.88  0.71  1.00 0.90  0.90
Q1:           0.1  4.9   4.9   9.8  0.1   0.1   0.2 14.2   0.0   2.0 18.7  18.7
UpstreamVC:  0.00 0.00  0.00  0.00 0.00  0.00  0.63 0.63  0.63  0.45 0.45  0.45
UpstreamAdj: 0.00 0.00  0.00  0.00 0.00  0.00  0.74 0.74  0.74  0.89 0.89  0.89
EarlyArrAdj: 1.00 1.00  1.00  1.00 1.00  1.00  0.03 0.50  0.45  0.16 0.63  0.63
Q2:           0.0  3.6   3.6   4.6  0.0   0.0   0.1  1.8   0.0   0.5  4.0   4.0
HCM2KQueue:   0.1  8.5   8.5  14.3  0.1   0.1   0.3 16.0   0.0   2.5 22.6  22.6
------------|---------------||---------------||---------------||---------------|
70th%Factor: 1.20 1.18  1.18  1.17 1.20  1.20  1.20 1.17  1.20  1.19 1.16  1.16
HCM2k70thQ:   0.1 10.1  10.1  16.8  0.1   0.1   0.3 18.7   0.0   3.0 26.2  26.2
------------|---------------||---------------||---------------||---------------|
85th%Factor: 1.60 1.53  1.53  1.49 1.60  1.60  1.60 1.48  1.60  1.58 1.44  1.44
HCM2k85thQ:   0.1 13.0  13.0  21.3  0.2   0.2   0.5 23.6   0.0   4.0 32.6  32.6
------------|---------------||---------------||---------------||---------------|
90th%Factor: 1.80 1.66  1.66  1.60 1.80  1.80  1.79 1.58  1.80  1.75 1.53  1.53
HCM2k90thQ:   0.1 14.2  14.2  22.9  0.2   0.2   0.5 25.3   0.0   4.4 34.6  34.6
------------|---------------||---------------||---------------||---------------|
95th%Factor: 2.10 1.87  1.87  1.77 2.10  2.10  2.09 1.75  2.10  2.02 1.67  1.67
HCM2k95thQ:   0.1 16.0  16.0  25.4  0.2   0.2   0.6 27.9   0.0   5.1 37.8  37.8
------------|---------------||---------------||---------------||---------------|
98th%Factor: 2.70 2.22  2.22  2.03 2.69  2.69  2.68 1.99  2.70  2.52 1.88  1.88
HCM2k98thQ:   0.2 18.9  18.9  29.1  0.3   0.3   0.8 31.9   0.0   6.4 42.4  42.4
```

Cumul + No Build Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Eight Mile & SR 99 E Frontage

Cycle (sec):	100	Critical Vol./Cap.(X):	0.234
Loss Time (sec):	12	Average Delay (sec/veh):	4.0
Optimal Cycle:	29	Level Of Service:	A

Street Name:	SR 99 East Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	2 0	1	1 0	1 1	0
Volume Module:	PM Peak Hour											
Base Vol:	9	2	6	8	1	5	9	615	5	8	615	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	2	6	8	1	5	9	615	5	8	615	6
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	2	6	8	1	5	9	615	5	8	615	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	10	2	7	9	1	5	10	668	5	9	668	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	2	7	9	1	5	10	668	5	9	668	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	10	2	7	9	1	5	10	668	5	9	668	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.87	0.87	0.93	0.86	0.86	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	1.00	0.25	0.75	1.00	0.17	0.83	1.00	2.00	1.00	1.00	1.98	0.02
Final Sat.:	1769	413	1240	1769	272	1358	1769	3538	1583	1769	3500	34
Capacity Analysis Module:												
Vol/Sat:	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.19	0.00	0.00	0.19	0.19
Crit Moves:	****				****		****				****	
Green/Cycle:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.82	0.82	0.02	0.82	0.82
Volume/Cap:	0.23	0.25	0.25	0.25	0.23	0.23	0.23	0.23	0.00	0.23	0.23	0.23
Delay/Veh:	50.8	51.9	51.9	52.0	52.8	52.8	50.8	2.1	1.7	51.3	2.1	2.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.8	51.9	51.9	52.0	52.8	52.8	50.8	2.1	1.7	51.3	2.1	2.1
LOS by Move:	D	D	D	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	29	28	28	28	24	24	16	15	0	27	16	16

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	2 0	1	1 0	1 1	0
Lane Group:	L	RT	RT	L	RT	RT	L	T	R	L	RT	RT
#LnsInGrps:	1	1	1	1	1	1	1	2	1	1	2	2
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	0.89	0.89	xxxx	0.88	0.88	xxxx	xxxx	0.85	xxxx	1.00	1.00
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.87	0.87	0.93	0.86	0.86	0.93	0.98	0.83	0.93	0.98	0.98
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Fnl Sat Adj:	0.93	0.87	0.87	0.93	0.86	0.86	0.93	0.93	0.83	0.93	0.93	0.93
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.82	0.82	0.02	0.82	0.82
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.99	0.99	0.99	1.00	1.00	0.99	0.00	0.00	0.99	0.00	0.00
Q1:	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.0	0.0	0.2	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.25	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.98	0.98	0.98	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.11	0.93	0.84	1.00	1.00	1.00
Q2:	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.3	0.0	0.3	0.3	0.3
HCM2KQueue:	0.6	0.5	0.5	0.5	0.5	0.5	0.3	0.3	0.0	0.5	0.3	0.3
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	0.7	0.6	0.6	0.6	0.5	0.5	0.4	0.3	0.0	0.6	0.4	0.4
85th%Factor:	1.59	1.59	1.59	1.59	1.60	1.60	1.60	1.60	1.60	1.59	1.60	1.60
HCM2k85thQ:	0.9	0.9	0.9	0.9	0.7	0.7	0.5	0.4	0.0	0.8	0.5	0.5
90th%Factor:	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.80	1.79	1.79	1.79
HCM2k90thQ:	1.0	1.0	1.0	1.0	0.8	0.8	0.5	0.5	0.0	0.9	0.5	0.5
95th%Factor:	2.08	2.08	2.08	2.08	2.09	2.09	2.09	2.09	2.10	2.08	2.09	2.09
HCM2k95thQ:	1.1	1.1	1.1	1.1	0.9	0.9	0.6	0.6	0.0	1.1	0.6	0.6
98th%Factor:	2.66	2.66	2.66	2.66	2.67	2.67	2.68	2.68	2.70	2.66	2.68	2.68
HCM2k98thQ:	1.5	1.4	1.4	1.4	1.2	1.2	0.8	0.7	0.0	1.4	0.8	0.8

Cumul + No Build Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

Cycle (sec):	100	Critical Vol./Cap.(X):	1.206
Loss Time (sec):	12	Average Delay (sec/veh):	101.5
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Holman Road						Lt. Col. Mark Taylor Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	1 0	1	1 0	0 1	0
Volume Module:	PM Peak Hour											
Base Vol:	46	558	272	442	347	31	62	526	24	341	532	376
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	46	558	272	442	347	31	62	526	24	341	532	376
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	46	558	272	442	347	31	62	526	24	341	532	376
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	50	607	296	480	377	34	67	572	26	371	578	409
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	607	296	480	377	34	67	572	26	371	578	409
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	607	296	480	377	34	67	572	26	371	578	409
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.98	0.83	0.93	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.00	1.00	1.00	0.59	0.41
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	1862	1583	1769	1023	723
Capacity Analysis Module:												
Vol/Sat:	0.03	0.12	0.19	0.27	0.07	0.02	0.04	0.31	0.02	0.21	0.57	0.57
Crit Moves:			****	****			****				****	
Green/Cycle:	0.10	0.15	0.15	0.23	0.28	0.28	0.03	0.30	0.30	0.20	0.47	0.47
Volume/Cap:	0.27	0.77	1.21	1.21	0.27	0.08	1.21	1.03	0.06	1.03	1.21	1.21
Delay/Veh:	42.0	45.2	167.1	153.1	28.5	26.9	235.0	82.2	25.2	96.2	131	130.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.0	45.2	167.1	153.1	28.5	26.9	235.0	82.2	25.2	96.2	131	130.9
LOS by Move:	D	D	F	F	C	C	F	F	C	F	F	F
HCM2k95thQ:	68	319	690	1131	154	36	192	966	25	770	2040	2040

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	1 0	1	1 0	0 1	0
Lane Group:	L	T	R	L	T	R	L	T	R	L	RT	RT
#LnsInGrps:	1	3	1	1	3	1	1	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:		8			8			8			8	
% Hev Veh:		2			2			2			2	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:		Include			Include			Include			Include	
% RT Prtct:		0			0			0			0	
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	0.94	0.94
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.92	0.92
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.98	0.83	0.93	0.92	0.92
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L -	T -	R		L -	T -	R		L -	T -	R		L -	T -	R	
Green/Cycle:	0.10	0.15	0.15		0.23	0.28	0.28		0.03	0.30	0.30		0.20	0.47	0.47	
ArrivalType:		4				4				4				4		
ProgFactor:	0.97	0.98	1.00		1.00	0.90	0.88		1.00	1.00	0.86		1.00	1.00	1.00	
Q1:		1.2	5.8	8.2	13.3	2.7	0.6	1.9	15.9	0.4	10.3	27.4	27.4			
UpstreamVC:	0.57	0.57	0.57		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.80	0.80	0.80		0.00	0.00	0.00		1.00	1.00	1.00		0.00	0.00	0.00	
EarlyArrAdj:	0.21	0.28	0.25		1.00	1.00	1.00		0.13	0.52	0.47		1.00	1.00	1.00	
Q2:		0.1	0.8	7.6	14.4	0.4	0.1	2.0	7.3	0.0	7.6	25.9	25.9			
HCM2KQueue:		1.3	6.7	15.8	27.8	3.1	0.7	3.9	23.2	0.5	17.9	53.3	53.3			
70th%Factor:	1.20	1.18	1.17		1.15	1.19	1.20		1.19	1.16	1.20		1.16	1.13	1.13	
HCM2k70thQ:		1.6	7.9	18.4	31.9	3.7	0.8	4.6	26.8	0.6	20.8	60.0	60.0			
85th%Factor:	1.59	1.54	1.48		1.42	1.57	1.59		1.56	1.44	1.60		1.47	1.35	1.35	
HCM2k85thQ:		2.1	10.3	23.3	39.4	4.8	1.1	6.0	33.4	0.8	26.2	72.0	72.0			
90th%Factor:	1.77	1.69	1.58		1.50	1.74	1.79		1.73	1.53	1.79		1.56	1.43	1.43	
HCM2k90thQ:		2.3	11.3	24.9	41.7	5.3	1.2	6.7	35.4	0.9	28.0	76.1	76.1			
95th%Factor:	2.06	1.91	1.75		1.63	2.01	2.08		1.98	1.67	2.08		1.72	1.53	1.53	
HCM2k95thQ:		2.7	12.8	27.6	45.2	6.1	1.4	7.7	38.6	1.0	30.8	81.6	81.6			
98th%Factor:	2.60	2.30	2.00		1.82	2.49	2.65		2.44	1.87	2.66		1.95	1.72	1.72	
HCM2k98thQ:		3.4	15.3	31.5	50.5	7.6	1.8	9.4	43.3	1.3	34.9	91.5	91.5			

Cumul + No Build Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.763
Loss Time (sec):	12	Average Delay (sec/veh):	32.0
Optimal Cycle:	69	Level Of Service:	C

Street Name:	West Lane						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	2	0	1	2	0	2	0	1
Volume Module:	PM Peak Hour											
Base Vol:	436	1790	253	113	1438	82	159	388	287	334	329	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	436	1790	253	113	1438	82	159	388	287	334	329	78
Added Vol:	0	0	0	0	1	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	436	1790	253	113	1439	82	159	388	287	334	329	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	474	1946	275	123	1564	89	173	422	312	363	358	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	474	1946	275	123	1564	89	173	422	312	363	358	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	474	1946	275	123	1564	89	173	422	312	363	358	85
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.93	0.83	0.90	0.93	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	3538	1583	3432	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.14	0.29	0.17	0.04	0.23	0.06	0.05	0.12	0.20	0.11	0.10	0.05
Crit Moves:	****				****				****	****		
Green/Cycle:	0.18	0.43	0.43	0.05	0.30	0.30	0.13	0.26	0.26	0.14	0.26	0.26
Volume/Cap:	0.76	0.67	0.40	0.67	0.76	0.19	0.38	0.46	0.76	0.76	0.38	0.20
Delay/Veh:	44.5	23.4	20.1	55.5	33.4	26.0	40.2	31.6	42.6	48.7	30.3	28.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.5	23.4	20.1	55.5	33.4	26.0	40.2	31.6	42.6	48.7	30.3	28.8
LOS by Move:	D	C	C	E	C	C	D	C	D	D	C	C
HCM2k95thQ:	413	550	241	159	585	93	140	274	476	349	222	97

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	4	0 1	2	0	4	0 1	2	0	2	0 1	2	0	2	0 1
Lane Group:	L		T	R	L		T	R	L		T	R	L		T	R
#LnsInGrps:	2		4	1	2		4	1	2		2	1	2		2	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.95	1.00		0.97	0.95	1.00	
Fnl Sat Adj:	0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.93	0.83		0.90	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.18	0.43	0.43	0.05	0.30	0.30	0.13	0.26	0.26	0.14	0.26	0.26
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.87	0.81	0.99	0.95	0.87	0.97	0.93	0.96	0.99	0.91	0.90
Q1:	6.3	10.3	4.2	1.7	10.3	1.6	2.2	4.8	7.7	4.9	3.9	1.6
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	2.5	1.9	0.7	1.5	2.8	0.2	0.6	0.8	2.6	2.4	0.6	0.3
HCM2KQueue:	8.9	12.2	4.9	3.2	13.1	1.8	2.8	5.6	10.4	7.4	4.5	1.9
70th%Factor:	1.18	1.17	1.19	1.19	1.17	1.20	1.19	1.19	1.18	1.18	1.19	1.20
HCM2k70thQ:	10.4	14.3	5.8	3.8	15.3	2.2	3.3	6.7	12.2	8.7	5.4	2.3
85th%Factor:	1.52	1.50	1.55	1.57	1.49	1.58	1.57	1.55	1.51	1.53	1.56	1.58
HCM2k85thQ:	13.5	18.3	7.6	5.0	19.5	2.9	4.4	8.7	15.7	11.3	7.0	3.0
90th%Factor:	1.66	1.62	1.71	1.74	1.61	1.77	1.75	1.70	1.64	1.68	1.72	1.76
HCM2k90thQ:	14.7	19.7	8.4	5.5	21.0	3.2	4.9	9.6	17.0	12.3	7.8	3.3
95th%Factor:	1.87	1.80	1.96	2.00	1.79	2.04	2.01	1.94	1.84	1.90	1.97	2.04
HCM2k95thQ:	16.5	22.0	9.6	6.4	23.4	3.7	5.6	10.9	19.0	14.0	8.9	3.9
98th%Factor:	2.21	2.09	2.39	2.48	2.07	2.57	2.51	2.35	2.15	2.27	2.41	2.56
HCM2k98thQ:	19.5	25.5	11.7	7.9	27.0	4.7	7.0	13.3	22.3	16.7	10.9	4.9

Cumul + No Build Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.623
Loss Time (sec): 12 Average Delay (sec/veh): 35.1
Optimal Cycle: 50 Level Of Service: D

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 3	0 1	1	0 3	0 1	1	0 3	0 1	1	0 3	0 1
Volume Module:	PM Peak Hour											
Base Vol:	245	727	162	152	571	97	172	661	144	218	641	110
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	245	727	162	152	571	97	172	661	144	218	641	110
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	245	727	162	152	571	97	172	661	144	218	641	110
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	266	790	176	165	621	105	187	718	157	237	697	120
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	266	790	176	165	621	105	187	718	157	237	697	120
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	266	790	176	165	621	105	187	718	157	237	697	120
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.15	0.16	0.11	0.09	0.12	0.07	0.11	0.14	0.10	0.13	0.14	0.08
Crit Moves:	****				****			****		****		
Green/Cycle:	0.24	0.27	0.27	0.16	0.20	0.20	0.19	0.23	0.23	0.22	0.25	0.25
Volume/Cap:	0.62	0.57	0.41	0.57	0.62	0.34	0.55	0.62	0.44	0.62	0.55	0.30
Delay/Veh:	36.7	31.8	30.3	41.2	38.0	35.3	38.4	35.9	34.0	38.8	33.1	30.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.7	31.8	30.3	41.2	38.0	35.3	38.4	35.9	34.0	38.8	33.1	30.9
LOS by Move:	D	C	C	D	D	D	D	D	C	D	C	C
HCM2k95thQ:	323	329	191	223	298	129	273	369	209	304	303	133

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	3	1		1	3	1		1	3	1		1	3	1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	3	1		1	3	1		1	3	1		1	3	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.24	0.27	0.27		0.16	0.20	0.20		0.19	0.23	0.23		0.22	0.25	0.25	
ArrivalType:		4				4				4				4		
ProgFactor:	0.95	0.93	0.91		0.97	0.96	0.94		0.96	0.95	0.94		0.96	0.94	0.91	
Q1:	6.3	6.4	3.6		4.1	5.6	2.4		4.5	6.3	3.5		5.7	5.8	2.5	
UpstreamVC:	0.67	0.67	0.67		0.27	0.27	0.27		0.00	0.00	0.00		0.40	0.40	0.40	
UpstreamAdj:	0.69	0.69	0.69		0.97	0.97	0.97		0.00	0.00	0.00		0.92	0.92	0.92	
EarlyArrAdj:	0.30	0.34	0.31		0.34	0.39	0.35		1.00	1.00	1.00		0.38	0.43	0.39	
Q2:	0.5	0.4	0.2		0.4	0.6	0.2		1.1	1.5	0.7		0.6	0.5	0.2	
HCM2KQueue:	6.8	6.9	3.9		4.5	6.2	2.6		5.6	7.8	4.2		6.3	6.3	2.6	
70th%Factor:	1.18	1.18	1.19		1.19	1.19	1.19		1.19	1.18	1.19		1.19	1.19	1.19	
HCM2k70thQ:	8.0	8.2	4.6		5.4	7.3	3.1		6.7	9.2	5.0		7.5	7.5	3.1	
85th%Factor:	1.54	1.54	1.56		1.56	1.54	1.58		1.55	1.53	1.56		1.54	1.54	1.57	
HCM2k85thQ:	10.4	10.6	6.0		7.1	9.6	4.0		8.7	12.0	6.6		9.8	9.7	4.1	
90th%Factor:	1.69	1.68	1.73		1.72	1.69	1.75		1.70	1.67	1.72		1.69	1.69	1.75	
HCM2k90thQ:	11.4	11.6	6.7		7.8	10.5	4.5		9.6	13.1	7.3		10.7	10.7	4.6	
95th%Factor:	1.91	1.91	1.98		1.97	1.93	2.02		1.94	1.89	1.97		1.92	1.92	2.02	
HCM2k95thQ:	12.9	13.1	7.7		8.9	11.9	5.2		10.9	14.8	8.4		12.2	12.1	5.3	
98th%Factor:	2.29	2.29	2.44		2.41	2.32	2.52		2.35	2.25	2.42		2.31	2.32	2.52	
HCM2k98thQ:	15.5	15.8	9.4		10.9	14.4	6.4		13.2	17.6	10.3		14.6	14.6	6.6	

Cumul + No Build Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 Morada Ln & SR99 W Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.656
Loss Time (sec):	12	Average Delay (sec/veh):	24.6
Optimal Cycle:	54	Level Of Service:	C

Street Name:	SR 99 West Frontage Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	2 0	0 1	0	1 0	2 1	0	1 0	2 0	1
Volume Module:PM Peak Hour												
Base Vol:	5	64	89	470	27	11	29	694	2	96	687	509
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	64	89	470	27	11	29	694	2	96	687	509
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	64	89	470	27	11	29	694	2	96	687	509
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	5	70	97	511	29	12	32	754	2	104	747	553
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	70	97	511	29	12	32	754	2	104	747	553
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	5	70	97	511	29	12	32	754	2	104	747	553
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.90	0.94	0.94	0.93	0.89	0.89	0.93	0.93	0.83
Lanes:	2.00	1.00	1.00	2.00	0.71	0.29	1.00	2.99	0.01	1.00	2.00	1.00
Final Sat.:	3432	1862	1583	3432	1266	516	1769	5069	15	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.04	0.06	0.15	0.02	0.02	0.02	0.15	0.15	0.06	0.21	0.35
Crit Moves:			****	****			****					****
Green/Cycle:	0.02	0.09	0.09	0.23	0.30	0.30	0.03	0.40	0.40	0.16	0.53	0.53
Volume/Cap:	0.08	0.40	0.66	0.66	0.08	0.08	0.66	0.37	0.37	0.37	0.40	0.66
Delay/Veh:	48.5	44.2	54.1	37.2	25.2	25.2	76.6	21.2	21.2	38.4	14.0	18.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.5	44.2	54.1	37.2	25.2	25.2	76.6	21.2	21.2	38.4	14.0	18.7
LOS by Move:	D	D	D	D	C	C	E	C	C	D	B	B
HCM2k95thQ:	8	122	203	381	41	41	53	232	232	135	238	441

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #22 Morada Ln & SR99 W Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2 0	1 0	1		2 0	0 1	0		1 0	2 1	0		1 0	2 0	1	
Lane Group:	L	T	R		L	RT	RT		L	RT	RT		L	T	R	
#LnsInGrps:	2	1	1		2	1	1		1	3	3		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.96	0.96		xxxx	1.00	1.00		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.94	0.94		0.93	0.98	0.98		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		0.97	1.00	1.00		1.00	0.91	0.91		1.00	0.95	1.00	
Fnl Sat Adj:	0.90	0.98	0.83		0.90	0.94	0.94		0.93	0.89	0.89		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #22 Morada Ln & SR99 W Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.02	0.09	0.09	0.23	0.30	0.30	0.03	0.40	0.40	0.16	0.53	0.53
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.98	0.99	0.96	0.86	0.86	1.00	0.83	0.83	0.96	0.68	0.76
Q1:	0.1	1.8	2.6	6.4	0.7	0.7	0.9	4.5	4.5	2.5	4.4	8.3
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.62	0.62	0.30	0.30	0.30
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.74	0.74	0.96	0.96	0.96
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.09	0.46	0.46	0.33	0.71	0.64
Q2:	0.1	0.6	1.5	1.7	0.1	0.1	0.2	0.3	0.3	0.2	0.5	1.2
HCM2KQueue:	0.2	2.4	4.1	8.1	0.8	0.8	1.0	4.7	4.7	2.7	4.9	9.5
70th%Factor:	1.20	1.19	1.19	1.18	1.20	1.20	1.20	1.19	1.19	1.19	1.19	1.18
HCM2k70thQ:	0.2	2.9	4.9	9.6	1.0	1.0	1.2	5.6	5.6	3.2	5.8	11.2
85th%Factor:	1.60	1.58	1.56	1.53	1.59	1.59	1.59	1.56	1.56	1.57	1.56	1.52
HCM2k85thQ:	0.3	3.8	6.4	12.4	1.3	1.3	1.6	7.4	7.4	4.2	7.6	14.5
90th%Factor:	1.80	1.75	1.73	1.67	1.78	1.78	1.78	1.72	1.72	1.75	1.71	1.65
HCM2k90thQ:	0.3	4.2	7.1	13.5	1.4	1.4	1.8	8.1	8.1	4.7	8.3	15.7
95th%Factor:	2.09	2.02	1.98	1.88	2.07	2.07	2.07	1.96	1.96	2.02	1.96	1.85
HCM2k95thQ:	0.3	4.9	8.1	15.2	1.6	1.6	2.1	9.3	9.3	5.4	9.5	17.6
98th%Factor:	2.69	2.53	2.43	2.24	2.64	2.64	2.62	2.39	2.39	2.51	2.39	2.18
HCM2k98thQ:	0.4	6.1	10.0	18.1	2.1	2.1	2.7	11.3	11.3	6.7	11.6	20.8

Cumul + No Build Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 West Ln & West Ln Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.873
Loss Time (sec):	12	Average Delay (sec/veh):	29.9
Optimal Cycle:	98	Level Of Service:	C

Street Name:	West Lane						West Lane Frontage Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3	1 0	1 0	3	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:	PM Peak Hour											
Base Vol:	323	2290	80	16	1868	27	65	39	265	99	25	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	323	2290	80	16	1868	27	65	39	265	99	25	10
Added Vol:	0	0	0	0	1	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	323	2290	80	16	1869	27	65	39	265	99	25	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	351	2489	87	17	2032	29	71	42	288	108	27	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	351	2489	87	17	2032	29	71	42	288	108	27	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	351	2489	87	17	2032	29	71	42	288	108	27	11
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.89	0.89	0.93	0.85	0.85	0.93	0.94	0.94
Lanes:	1.00	3.86	0.14	1.00	3.94	0.06	1.00	0.13	0.87	1.00	0.71	0.29
Final Sat.:	1769	6516	228	1769	6668	96	1769	208	1410	1769	1273	509
Capacity Analysis Module:												
Vol/Sat:	0.20	0.38	0.38	0.01	0.30	0.30	0.04	0.20	0.20	0.06	0.02	0.02
Crit Moves:	****				****			****		****		
Green/Cycle:	0.23	0.56	0.56	0.01	0.35	0.35	0.20	0.23	0.23	0.07	0.11	0.11
Volume/Cap:	0.87	0.68	0.68	0.68	0.87	0.87	0.20	0.87	0.87	0.87	0.20	0.20
Delay/Veh:	55.7	16.0	16.0	104.0	34.4	34.4	33.8	56.3	56.3	90.9	41.4	41.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	55.7	16.0	16.0	104.0	34.4	34.4	33.8	56.3	56.3	90.9	41.4	41.4
LOS by Move:	E	B	B	F	C	C	C	E	E	F	D	D
HCM2k95thQ:	465	484	484	78	807	807	91	573	573	279	61	61

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 3	1 0		1	0 3	1 0		1	0 0	1 0		1	0 0	1 0	
Lane Group:	L	RT	RT		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	4	4		1	4	4		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	0.87	0.87		xxxx	0.96	0.96	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.98		0.93	0.98	0.98		0.93	0.85	0.85		0.93	0.94	0.94	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	0.91		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.89		0.93	0.89	0.89		0.93	0.85	0.85		0.93	0.94	0.94	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.23	0.56	0.56		0.01	0.35	0.35		0.20	0.23	0.23		0.07	0.11	0.11	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.72	0.72		1.00	0.96	0.96		0.93	0.98	0.98		1.00	0.97	0.97	
Q1:		9.2	10.1	10.1		0.5	14.2	14.2		1.5	8.7	8.7		3.0	0.9	0.9
UpstreamVC:	0.89	0.89	0.89		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.33	0.33	0.33		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	0.14	0.25	0.25		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:		0.8	0.5	0.5		1.0	4.7	4.7		0.3	4.1	4.1		2.8	0.2	0.2
HCM2KQueue:		10.1	10.6	10.6		1.5	18.9	18.9		1.8	12.8	12.8		5.8	1.2	1.2
70th%Factor:	1.18	1.18	1.18		1.20	1.16	1.16		1.20	1.17	1.17		1.19	1.20	1.20	
HCM2k70thQ:		11.9	12.4	12.4		1.8	21.9	21.9		2.1	15.0	15.0		6.8	1.4	1.4
85th%Factor:	1.51	1.51	1.51		1.59	1.46	1.46		1.58	1.50	1.50		1.55	1.59	1.59	
HCM2k85thQ:		15.3	16.0	16.0		2.4	27.6	27.6		2.8	19.1	19.1		8.9	1.9	1.9
90th%Factor:	1.64	1.64	1.64		1.77	1.56	1.56		1.77	1.61	1.61		1.70	1.78	1.78	
HCM2k90thQ:		16.6	17.3	17.3		2.7	29.4	29.4		3.1	20.6	20.6		9.8	2.1	2.1
95th%Factor:	1.84	1.83	1.83		2.05	1.71	1.71		2.04	1.80	1.80		1.94	2.06	2.06	
HCM2k95thQ:		18.6	19.4	19.4		3.1	32.3	32.3		3.6	22.9	22.9		11.2	2.4	2.4
98th%Factor:	2.16	2.14	2.14		2.59	1.93	1.93		2.57	2.07	2.07		2.34	2.61	2.61	
HCM2k98thQ:		21.8	22.7	22.7		4.0	36.5	36.5		4.6	26.5	26.5		13.5	3.1	3.1

Cumul + No Build Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 West Lane & Knickerbocker Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.884
Loss Time (sec):	12	Average Delay (sec/veh):	35.2
Optimal Cycle:	103	Level Of Service:	D

Street Name:	West Lane						Knickerbocker Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3	1 0	1 0	3	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:	PM Peak Hour											
Base Vol:	196	2560	59	119	2104	167	265	106	108	84	115	87
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	196	2560	59	119	2104	167	265	106	108	84	115	87
Added Vol:	0	0	0	0	1	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	196	2560	59	119	2105	167	265	106	108	84	115	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	213	2783	64	129	2288	182	288	115	117	91	125	95
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	213	2783	64	129	2288	182	288	115	117	91	125	95
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	213	2783	64	129	2288	182	288	115	117	91	125	95
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.88	0.88	0.93	0.91	0.91	0.93	0.92	0.92
Lanes:	1.00	3.91	0.09	1.00	3.71	0.29	1.00	0.50	0.50	1.00	0.57	0.43
Final Sat.:	1769	6605	152	1769	6210	493	1769	852	868	1769	991	750
Capacity Analysis Module:												
Vol/Sat:	0.12	0.42	0.42	0.07	0.37	0.37	0.16	0.14	0.14	0.05	0.13	0.13
Crit Moves:	****				****		****				****	
Green/Cycle:	0.14	0.47	0.47	0.08	0.42	0.42	0.18	0.24	0.24	0.09	0.14	0.14
Volume/Cap:	0.88	0.89	0.89	0.89	0.88	0.88	0.88	0.57	0.57	0.57	0.88	0.88
Delay/Veh:	72.0	27.8	27.8	90.3	30.7	30.7	63.3	35.6	35.6	48.5	71.0	71.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	72.0	27.8	27.8	90.3	30.7	30.7	63.3	35.6	35.6	48.5	71.0	71.0
LOS by Move:	E	C	C	F	C	C	E	D	D	D	E	E
HCM2k95thQ:	288	809	809	203	774	774	534	319	319	178	448	448

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	3	1 0		1 0	3	1 0		1 0	0	1 0		1 0	0	1 0	
Lane Group:	L	RT	RT		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	4	4		1	4	4		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	1.00	1.00		xxxx	0.99	0.99		xxxx	0.92	0.92		xxxx	0.94	0.94	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.98		0.93	0.97	0.97		0.93	0.91	0.91		0.93	0.92	0.92	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	0.91		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.89		0.93	0.88	0.88		0.93	0.91	0.91		0.93	0.92	0.92	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.14	0.47	0.47	0.08	0.42	0.42	0.18	0.24	0.24	0.09	0.14	0.14
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.93	0.93	1.00	0.95	0.95	0.99	0.95	0.95	0.98	0.99	0.99
Q1:	5.8	18.4	18.4	3.5	16.5	16.5	7.7	5.4	5.4	2.4	5.9	5.9
UpstreamVC:	1.19	1.19	1.19	0.87	0.87	0.87	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.09	0.09	0.09	0.37	0.37	0.37	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.03	0.06	0.06	0.08	0.23	0.23	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.2	0.5	0.5	0.6	1.5	1.5	4.1	1.3	1.3	1.2	3.7	3.7
HCM2KQueue:	6.0	18.9	18.9	4.1	18.0	18.0	11.8	6.7	6.7	3.6	9.7	9.7
70th%Factor:	1.19	1.16	1.16	1.19	1.16	1.16	1.17	1.18	1.18	1.19	1.18	1.18
HCM2k70thQ:	7.1	22.0	22.0	4.9	20.9	20.9	13.9	7.9	7.9	4.3	11.4	11.4
85th%Factor:	1.55	1.46	1.46	1.56	1.46	1.46	1.50	1.54	1.54	1.57	1.52	1.52
HCM2k85thQ:	9.2	27.6	27.6	6.4	26.4	26.4	17.7	10.3	10.3	5.6	14.7	14.7
90th%Factor:	1.70	1.56	1.56	1.73	1.56	1.56	1.62	1.69	1.69	1.73	1.65	1.65
HCM2k90thQ:	10.1	29.4	29.4	7.1	28.1	28.1	19.1	11.2	11.2	6.2	15.9	15.9
95th%Factor:	1.93	1.71	1.71	1.98	1.72	1.72	1.81	1.91	1.91	1.99	1.85	1.85
HCM2k95thQ:	11.5	32.3	32.3	8.1	31.0	31.0	21.4	12.7	12.7	7.1	17.9	17.9
98th%Factor:	2.33	1.93	1.93	2.43	1.95	1.95	2.10	2.30	2.30	2.46	2.18	2.18
HCM2k98thQ:	13.9	36.6	36.6	10.0	35.1	35.1	24.8	15.3	15.3	8.8	21.0	21.0

Cumul + No Build Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	1.251
Loss Time (sec):	12	Average Delay (sec/veh):	89.2
Optimal Cycle:	180	Level Of Service:	F

Street Name:	West Lane						Hammer Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	4 0	1	2 0	4 0	1	2 0	4 0	1	2 0	4 0	1
Volume Module:	PM Peak Hour											
Base Vol:	184	1912	468	813	1359	135	248	1048	101	625	1071	645
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	184	1912	468	813	1359	135	248	1048	101	625	1071	645
Added Vol:	0	0	0	0	1	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	184	1912	468	813	1360	135	248	1048	101	625	1071	645
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	200	2078	509	884	1478	147	270	1139	110	679	1164	701
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	200	2078	509	884	1478	147	270	1139	110	679	1164	701
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	200	2078	509	884	1478	147	270	1139	110	679	1164	701
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.06	0.31	0.32	0.26	0.22	0.09	0.08	0.17	0.07	0.20	0.17	0.44
Crit Moves:			****	****			****					****
Green/Cycle:	0.10	0.26	0.26	0.21	0.37	0.37	0.06	0.19	0.19	0.23	0.35	0.35
Volume/Cap:	0.60	1.19	1.25	1.25	0.60	0.25	1.25	0.88	0.36	0.88	0.48	1.25
Delay/Veh:	46.2	130	168.8	164.0	26.2	22.4	192.0	46.4	35.9	48.5	25.3	159.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.2	130	168.8	164.0	26.2	22.4	192.0	46.4	35.9	48.5	25.3	159.2
LOS by Move:	D	F	F	F	C	C	F	D	D	D	C	F
HCM2k95thQ:	198	1276	1235	1021	396	124	466	560	153	440	295	1468

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	4	0 1	2	0	4	0 1	2	0	4	0 1	2	0	4	0 1
Lane Group:	L	T		R	L	T		R	L	T		R	L	T		R
#LnsInGrps:	2	4		1	2	4		1	2	4		1	2	4		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.10	0.26	0.26		0.21	0.37	0.37		0.06	0.19	0.19		0.23	0.35	0.35	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	1.00	1.00		1.00	0.89	0.84		1.00	0.99	0.94		0.98	0.88	1.00	
Q1:	2.7	15.9	14.1		12.7	8.2	2.4		3.9	8.3	2.5		9.2	6.1	19.5	
UpstreamVC:	0.00	0.00	0.00		0.88	0.88	0.88		0.00	0.00	0.00		1.02	1.02	1.02	
UpstreamAdj:	0.00	0.00	0.00		0.35	0.35	0.35		0.00	0.00	0.00		0.09	0.09	0.09	
EarlyArrAdj:	1.00	1.00	1.00		0.14	0.20	0.18		1.00	1.00	1.00		0.04	0.05	0.05	
Q2:	1.3	16.0	16.6		12.1	0.3	0.1		6.3	4.1	0.6		0.3	0.0	17.8	
HCM2KQueue:	4.0	31.9	30.7		24.7	8.5	2.4		10.1	12.4	3.1		9.5	6.1	37.3	
70th%Factor:	1.19	1.15	1.15		1.15	1.18	1.19		1.18	1.17	1.19		1.18	1.19	1.14	
HCM2k70thQ:	4.8	36.5	35.2		28.5	10.0	2.9		11.9	14.6	3.6		11.2	7.3	42.5	
85th%Factor:	1.56	1.40	1.41		1.43	1.53	1.58		1.51	1.50	1.57		1.52	1.54	1.39	
HCM2k85thQ:	6.2	44.7	43.2		35.4	12.9	3.9		15.3	18.6	4.8		14.4	9.5	51.7	
90th%Factor:	1.73	1.48	1.49		1.52	1.66	1.75		1.64	1.61	1.74		1.65	1.69	1.46	
HCM2k90thQ:	6.9	47.2	45.6		37.5	14.1	4.3		16.6	20.1	5.3		15.7	10.4	54.5	
95th%Factor:	1.98	1.60	1.61		1.65	1.88	2.02		1.84	1.80	2.01		1.85	1.93	1.58	
HCM2k95thQ:	7.9	51.1	49.4		40.8	15.9	5.0		18.6	22.4	6.1		17.6	11.8	58.7	
98th%Factor:	2.44	1.79	1.79		1.85	2.22	2.53		2.16	2.08	2.49		2.18	2.32	1.76	
HCM2k98thQ:	9.7	56.9	55.1		45.7	18.8	6.2		21.8	25.9	7.6		20.7	14.2	65.5	

Cumul + No Build Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	1.024
Loss Time (sec):	12	Average Delay (sec/veh):	50.5
Optimal Cycle:	180	Level Of Service:	D

Street Name:	Hammer Lane						Holman Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2 1 0	2	0	3 0 1	2	0	3 1 0	2	0	3 1 0
Volume Module:	PM Peak Hour											
Base Vol:	504	662	147	220	564	319	530	2026	301	208	2032	155
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	504	662	147	220	564	319	530	2026	301	208	2032	155
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	504	662	147	220	564	319	530	2026	301	208	2032	155
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	548	720	160	239	613	347	576	2202	327	226	2209	168
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	548	720	160	239	613	347	576	2202	327	226	2209	168
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	548	720	160	239	613	347	576	2202	327	226	2209	168
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.87	0.87	0.90	0.89	0.83	0.90	0.87	0.87	0.90	0.88	0.88
Lanes:	2.00	2.45	0.55	2.00	3.00	1.00	2.00	3.48	0.52	2.00	3.72	0.28
Final Sat.:	3432	4047	899	3432	5083	1583	3432	5789	860	3432	6228	475
Capacity Analysis Module:												
Vol/Sat:	0.16	0.18	0.18	0.07	0.12	0.22	0.17	0.38	0.38	0.07	0.35	0.35
Crit Moves:	****					****	****				****	
Green/Cycle:	0.16	0.27	0.27	0.10	0.21	0.21	0.16	0.43	0.43	0.08	0.35	0.35
Volume/Cap:	1.02	0.67	0.67	0.67	0.56	1.02	1.02	0.87	0.87	0.87	1.02	1.02
Delay/Veh:	87.4	34.1	34.1	48.0	35.8	94.5	86.0	29.1	29.1	72.2	57.8	57.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	87.4	34.1	34.1	48.0	35.8	94.5	86.0	29.1	29.1	72.2	57.8	57.8
LOS by Move:	F	C	C	D	D	F	F	C	C	E	E	E
HCM2k95thQ:	630	437	437	181	277	610	497	770	770	294	1145	1145

Note: Queue reported is the distance per lane in feet.

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2	0	2 1 0	2	0	3 0 1	2	0	3 1 0	2	0	3 1 0
Lane Group:	L	RT	RT	L	T	R	L	RT	RT	L	RT	RT
#LnsInGrps:	2	3	3	2	3	1	2	4	4	2	4	4
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	1.00	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	1.00	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	0.97	0.97	xxxx	xxxx	0.85	xxxx	0.98	0.98	xxxx	0.99	0.99
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.95	0.95	0.93	0.98	0.83	0.93	0.96	0.96	0.93	0.97	0.97
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Fnl Sat Adj:	0.90	0.87	0.87	0.90	0.89	0.83	0.90	0.87	0.87	0.90	0.88	0.88
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul + No Build Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.16	0.27	0.27	0.10	0.21	0.21	0.16	0.43	0.43	0.08	0.35	0.35
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.95	0.95	0.99	0.95	1.00	1.00	0.93	0.93	1.00	1.00	1.00
Q1:	7.8	7.6	7.6	3.3	5.3	9.6	8.2	16.5	16.5	3.2	18.1	18.1
UpstreamVC:	0.00	0.00	0.00	0.62	0.62	0.62	0.88	0.88	0.88	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.74	0.74	0.74	0.36	0.36	0.36	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	0.20	0.31	0.29	0.13	0.23	0.23	1.00	1.00	1.00
Q2:	6.4	1.9	1.9	0.4	0.4	4.1	2.6	1.4	1.4	2.9	10.0	10.0
HCM2KQueue:	14.2	9.4	9.4	3.6	5.7	13.7	10.9	17.9	17.9	6.1	28.2	28.2
70th%Factor:	1.17	1.18	1.18	1.19	1.19	1.17	1.18	1.16	1.16	1.19	1.15	1.15
HCM2k70thQ:	16.6	11.1	11.1	4.3	6.8	16.0	12.8	20.8	20.8	7.2	32.4	32.4
85th%Factor:	1.49	1.52	1.52	1.57	1.55	1.49	1.51	1.47	1.47	1.54	1.42	1.42
HCM2k85thQ:	21.1	14.3	14.3	5.7	8.8	20.4	16.4	26.2	26.2	9.4	39.9	39.9
90th%Factor:	1.60	1.65	1.65	1.73	1.70	1.60	1.63	1.56	1.56	1.69	1.50	1.50
HCM2k90thQ:	22.7	15.5	15.5	6.3	9.7	21.9	17.8	28.0	28.0	10.3	42.2	42.2
95th%Factor:	1.77	1.86	1.86	1.99	1.94	1.78	1.83	1.72	1.72	1.93	1.63	1.63
HCM2k95thQ:	25.2	17.5	17.5	7.2	11.1	24.4	19.9	30.8	30.8	11.8	45.8	45.8
98th%Factor:	2.04	2.18	2.18	2.46	2.34	2.05	2.13	1.95	1.95	2.33	1.81	1.81
HCM2k98thQ:	28.9	20.6	20.6	8.9	13.4	28.1	23.2	34.9	34.9	14.2	51.1	51.1

Cumul + No Build Alt PM Pk Hr

Future Queue Length Report (feet)

Node	Intersection	Northbound L	T	R	Southbound L	T	R	Eastbound L	T	R	Westbound L	T	R
#3	[HCM2k95thQ]:	328	1023	370	1295	407	319	507	668	107	247	1419	1419
#4	[HCM2k95thQ]:	576	561	512	489	468	221	186	615	187	398	738	738
#5	[HCM2k95thQ]:	166	752	987	813	316	121	373	1192	110	718	1421	1421
#6	[HCM2k95thQ]:	88	917	1349	1885	214	22	250	980	38	1591	363	1341
#7	[HCM2k95thQ]:	206	206	206	164	164	164	126	199	199	112	222	222
#8	[HCM2k95thQ]:	949	547	141	216	860	992	885	1244	1244	259	1222	1222
#9	[HCM2k95thQ]:	11	0	12	671	0	75	286	450	0	0	720	533
#10	[HCM2k95thQ]:	0	0	0	0	0	6	0	23	0	0	44	44
#11	[HCM2k95thQ]:	598	110	47	67	148	513	446	495	578	62	585	27
#12	[HCM2k95thQ]:	3	399	399	635	6	6	15	698	1	127	945	945
#13	[HCM2k95thQ]:	29	28	28	28	24	24	16	15	0	27	16	16
#17	[HCM2k95thQ]:	68	319	690	1131	154	36	192	966	25	770	2040	2040
#18	[HCM2k95thQ]:	413	550	241	159	585	93	140	274	476	349	222	97
#19	[HCM2k95thQ]:	323	329	191	223	298	129	273	369	209	304	303	133
#22	[HCM2k95thQ]:	8	122	203	381	41	41	53	232	232	135	238	441
#24	[HCM2k95thQ]:	465	484	484	78	807	807	91	573	573	279	61	61
#25	[HCM2k95thQ]:	288	809	809	203	774	774	534	319	319	178	448	448
#26	[HCM2k95thQ]:	198	1276	1235	1021	396	124	466	560	153	440	295	1468
#27	[HCM2k95thQ]:	630	437	437	181	277	610	497	770	770	294	1145	1145

Cumul No Project AM Pk Hr

Scenario Report

Scenario:	Cumul No Proj AM
Command:	Cumul No Proj AM
Volume:	Cumul GP Alt AM
Geometry:	Cumul No Proj
Impact Fee:	Default Impact Fee
Trip Generation:	AM Pk Hr
Trip Distribution:	Cumul With Bridge AM
Paths:	Cumul No Proj
Routes:	Default Route
Configuration:	Default Configuration

Cumul No Project AM Pk Hr

Trip Generation Report

Forecast for AM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	0.00	ElemSchStudent	0.25	0.20	0	0	0	0.0
1	Village West	0.00	Tra Vigne SFDU	0.18	0.53	0	0	0	0.0
1	Village West	1646.00	GP Alt SFDU	0.18	0.53	296	872	1168	58.4
1	Village West	130.68	GP Alt Com KSF	0.60	0.36	78	47	125	6.2
1	Village West	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
1	Village West	232.00	GP Alt MFDU	0.10	0.41	23	95	118	5.9
1	Village West	0.00	Tra V Internal	-6.00	-6.00	0	0	0	0.0
1	Village West	1.00	GP Alt Interna	-7.00	-7.00	-7	-7	-14	-0.7
1	Village West	1.00	GP Alt Pass-By	-11.00	-7.00	-11	-7	-18	-0.9
	Zone 1 Subtotal					379	1000	1379	68.9
2	Village East	0.00	Tra Vigne SFDU	0.18	0.53	0	0	0	0.0
2	Village East	774.00	GP Alt SFDU	0.18	0.53	139	410	549	27.4
2	Village East	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
	Zone 2 Subtotal					139	410	549	27.4
4	Industrial	406.94	Indust KSF	0.15	0.03	61	12	73	3.6
	Zone 4 Subtotal					61	12	73	3.6
TOTAL						579	1422	2001	100.0

Cumul No Project AM Pk Hr

Trip Distribution Report

Percent Of Trips Cumul With Bridge AM

Zone	To Gates 1	2	3	4	5	6	7	8	9	10	11
1	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	1.0
2	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	1.0
4	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	1.0

Zone	To Gates 12	13	14	15	16	19	20	21	22	23	24
1	5.0	12.0	1.0	2.0	3.0	17.0	3.0	5.0	3.0	12.0	4.0
2	5.0	12.0	1.0	2.0	3.0	17.0	3.0	5.0	3.0	12.0	4.0
4	5.0	12.0	1.0	2.0	3.0	17.0	3.0	5.0	3.0	12.0	4.0

Zone	To Gates 25	26
1	2.0	2.0
2	2.0	2.0
4	2.0	2.0

Cumul No Project AM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Del/ Veh	V/ C	Future LOS	Del/ Veh	V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	D	36.1	0.820	D	36.8	0.840	+ 0.635 D/V
# 4 Eight Mile Rd & Davis Rd	C	34.2	0.755	C	34.6	0.782	+ 0.444 D/V
# 5 Eight Mile & Lower Sacto Rd	C	33.7	0.771	C	34.9	0.815	+ 1.203 D/V
# 6 West Lane & Armstrong Road	E	67.4	1.088	E	67.8	1.088	+ 0.430 D/V
# 7 West Lane & Ham Lane	B	11.6	0.381	B	13.6	0.421	+ 1.983 D/V
# 8 Eight Mile Rd & West Ln	D	39.6	0.882	D	43.8	0.935	+ 4.237 D/V
# 9 Eight Mile Road & Ham Lane	C	25.3	0.597	D	39.7	0.833	+14.463 D/V
# 10 Eight Mile & Leach Rd/St J	A	1.0	0.303	B	10.5	0.411	+ 9.516 D/V
# 11 Eight Mile & MickeGrove/Holman	C	28.5	0.558	C	29.2	0.621	+ 0.674 D/V
# 12 Eight Mile & SR 99 W Frontage	C	25.3	0.646	C	25.0	0.686	-0.348 D/V
# 13 Eight Mile & SR 99 E Frontage	A	4.0	0.171	A	5.1	0.181	+ 1.191 D/V
# 16 West & L.C.MarkTaylor/Marlette	C	22.7	0.462	C	27.0	0.556	+ 4.211 D/V
# 17 Holman & Lt Col Mark Taylor	D	38.4	0.815	D	46.8	0.929	+ 8.395 D/V
# 18 Morada Lane & West Lane	C	29.2	0.660	C	30.1	0.718	+ 0.884 D/V
# 19 Morada Lane & Holman Road	C	32.9	0.475	C	32.9	0.493	+ 0.034 D/V
# 22 Morada Ln & SR99 W Frontage Rd	C	24.3	0.408	C	24.2	0.408	-0.036 D/V
# 24 West Ln & West Ln Frontage Rd	C	24.5	0.726	C	24.4	0.770	-0.136 D/V
# 25 West Lane & Knickerbocker Dr	C	23.2	0.689	C	23.0	0.733	-0.249 D/V
# 26 West Lane & Hammer Lane	C	34.7	0.807	C	34.6	0.807	-0.114 D/V
# 27 Hammer Lane & Holman Road	C	33.8	0.770	C	33.8	0.770	+ 0.022 D/V
# 46 Lt Col Mark Taylor St & Ham Ln	C	23.0	0.164	C	28.3	0.367	+ 5.287 D/V

Cumul No Project AM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]

Cumul No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.840
Loss Time (sec):	12	Average Delay (sec/veh):	36.8
Optimal Cycle:	87	Level Of Service:	D

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	AM Peak Hour											
Base Vol:	123	347	111	444	595	208	242	1338	104	231	1392	227
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	123	347	111	444	595	208	242	1338	104	231	1392	227
Added Vol:	0	0	6	6	0	0	0	29	0	14	71	14
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	123	347	117	450	595	208	242	1367	104	245	1463	241
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	134	377	127	489	647	226	263	1486	113	266	1590	262
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	134	377	127	489	647	226	263	1486	113	266	1590	262
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	134	377	127	489	647	226	263	1486	113	266	1590	262
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	3.43	0.57
Final Sat.:	1769	3538	1583	1769	3538	1583	3432	6778	1583	3432	5697	938
Capacity Analysis Module:												
Vol/Sat:	0.08	0.11	0.08	0.28	0.18	0.14	0.08	0.22	0.07	0.08	0.28	0.28
Crit Moves:		****		****			****				****	
Green/Cycle:	0.13	0.13	0.13	0.33	0.32	0.32	0.09	0.31	0.31	0.11	0.33	0.33
Volume/Cap:	0.57	0.84	0.63	0.84	0.57	0.44	0.84	0.70	0.23	0.70	0.84	0.84
Delay/Veh:	43.8	55.8	47.9	41.6	28.7	27.4	62.6	31.3	25.7	48.6	34.0	34.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.8	55.8	47.9	41.6	28.7	27.4	62.6	31.3	25.7	48.6	34.0	34.0
LOS by Move:	D	E	D	D	C	C	E	C	C	D	C	C
HCM2k95thQ:	225	398	234	698	393	253	214	464	107	204	642	642

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 2	0 1		1	0 2	0 1		2	0 4	0 1		2	0 3	1 0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	2	1		1	2	1		2	4	1		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.98	0.98	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.96	0.96	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.90	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.13	0.13	0.13		0.33	0.32	0.32		0.09	0.31	0.31		0.11	0.33	0.33	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.99	0.98		0.96	0.91	0.89		0.99	0.94	0.87		0.99	0.96	0.96	
Q1:	3.4	5.3	3.3		12.1	7.1	4.4		3.7	9.3	2.0		3.6	12.5	12.5	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.73	0.73	0.73		0.56	0.56	0.56	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.60	0.60	0.60		0.81	0.81	0.81	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.15	0.32	0.29		0.22	0.44	0.44	
Q2:	1.2	3.1	1.5		3.9	1.3	0.8		0.6	0.7	0.1		0.5	2.0	2.0	
HCM2KQueue:	4.6	8.5	4.8		16.0	8.4	5.2		4.3	10.1	2.1		4.1	14.5	14.5	
70th%Factor:	1.19	1.18	1.19		1.17	1.18	1.19		1.19	1.18	1.19		1.19	1.17	1.17	
HCM2k70thQ:	5.5	10.0	5.7		18.7	9.9	6.2		5.2	11.9	2.5		4.9	17.0	17.0	
85th%Factor:	1.56	1.53	1.56		1.48	1.53	1.55		1.56	1.51	1.58		1.56	1.48	1.48	
HCM2k85thQ:	7.1	13.0	7.4		23.6	12.8	8.1		6.8	15.2	3.3		6.4	21.6	21.6	
90th%Factor:	1.72	1.66	1.72		1.58	1.66	1.71		1.72	1.64	1.76		1.73	1.59	1.59	
HCM2k90thQ:	7.9	14.1	8.2		25.3	13.9	8.9		7.5	16.5	3.7		7.1	23.1	23.1	
95th%Factor:	1.96	1.87	1.96		1.75	1.88	1.95		1.97	1.84	2.03		1.98	1.77	1.77	
HCM2k95thQ:	9.0	15.9	9.4		27.9	15.7	10.1		8.5	18.5	4.3		8.1	25.7	25.7	
98th%Factor:	2.40	2.22	2.39		1.99	2.22	2.37		2.42	2.16	2.55		2.43	2.03	2.03	
HCM2k98thQ:	11.0	18.8	11.4		31.9	18.6	12.3		10.5	21.7	5.4		10.0	29.4	29.4	

Cumul No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.782
Loss Time (sec):	12	Average Delay (sec/veh):	34.6
Optimal Cycle:	73	Level Of Service:	C

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	1 0	3 1	0
Volume Module:	AM Peak Hour											
Base Vol:	203	290	141	215	517	131	152	1273	178	287	1254	104
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	203	290	141	215	517	131	152	1273	178	287	1254	104
Added Vol:	0	0	12	6	0	0	0	41	0	28	100	14
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	203	290	153	221	517	131	152	1314	178	315	1354	118
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	221	315	166	240	562	142	165	1428	193	342	1472	128
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	221	315	166	240	562	142	165	1428	193	342	1472	128
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	221	315	166	240	562	142	165	1428	193	342	1472	128
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.93	0.88	0.88
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	1.00	3.68	0.32
Final Sat.:	1769	3538	1583	1769	3538	1583	3432	6778	1583	1769	6160	537
Capacity Analysis Module:												
Vol/Sat:	0.12	0.09	0.11	0.14	0.16	0.09	0.05	0.21	0.12	0.19	0.24	0.24
Crit Moves:	****				****			****		****		
Green/Cycle:	0.16	0.16	0.16	0.20	0.20	0.20	0.09	0.27	0.27	0.25	0.43	0.43
Volume/Cap:	0.78	0.56	0.66	0.66	0.78	0.44	0.56	0.78	0.45	0.78	0.56	0.56
Delay/Veh:	53.5	40.2	46.1	41.2	43.3	35.9	46.1	36.1	31.2	43.9	21.5	21.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.5	40.2	46.1	41.2	43.3	35.9	46.1	36.1	31.2	43.9	21.5	21.5
LOS by Move:	D	D	D	D	D	D	D	D	C	D	C	C
HCM2k95thQ:	396	259	287	364	478	200	123	492	214	521	413	413

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L - T - R				L - T - R				L - T - R				L - T - R			
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	2 0	1		1 0	2 0	1		2 0	4 0	1		1 0	3 1	0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	2	1		1	2	1		2	4	1		1	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12				
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		0.97	0.91	1.00		1.00	0.91	0.91	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.90	0.89	0.83		0.93	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.16	0.16	0.16	0.20	0.20	0.20	0.09	0.27	0.27	0.25	0.43	0.43
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.97	0.98	0.96	0.98	0.95	0.98	0.96	0.92	0.97	0.84	0.84
Q1:	5.8	4.1	4.2	5.9	7.6	3.3	2.2	9.7	4.1	8.6	7.6	7.6
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.70	0.70	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.65	0.65	0.65	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.15	0.32	0.29	1.00	1.00	1.00
Q2:	2.7	1.2	1.7	1.8	2.8	0.8	0.2	1.0	0.2	2.9	1.2	1.2
HCM2KQueue:	8.4	5.3	5.9	7.7	10.4	4.0	2.4	10.8	4.3	11.5	8.8	8.8
70th%Factor:	1.18	1.19	1.19	1.18	1.18	1.19	1.19	1.18	1.19	1.18	1.18	1.18
HCM2k70thQ:	10.0	6.3	7.0	9.1	12.3	4.8	2.9	12.7	5.2	13.5	10.4	10.4
85th%Factor:	1.53	1.55	1.55	1.53	1.51	1.56	1.58	1.51	1.56	1.50	1.52	1.52
HCM2k85thQ:	12.9	8.3	9.2	11.8	15.7	6.3	3.8	16.2	6.8	17.3	13.5	13.5
90th%Factor:	1.66	1.71	1.70	1.67	1.64	1.73	1.75	1.63	1.72	1.63	1.66	1.66
HCM2k90thQ:	14.0	9.1	10.1	12.9	17.1	7.0	4.3	17.6	7.5	18.6	14.7	14.7
95th%Factor:	1.88	1.95	1.93	1.89	1.84	1.98	2.02	1.83	1.97	1.82	1.87	1.87
HCM2k95thQ:	15.8	10.4	11.5	14.6	19.1	8.0	4.9	19.7	8.6	20.8	16.5	16.5
98th%Factor:	2.22	2.36	2.33	2.25	2.15	2.43	2.53	2.14	2.42	2.11	2.21	2.21
HCM2k98thQ:	18.8	12.6	13.9	17.3	22.4	9.8	6.1	23.0	10.5	24.2	19.5	19.5

Cumul No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.815
Loss Time (sec):	12	Average Delay (sec/veh):	34.9
Optimal Cycle:	81	Level Of Service:	C

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	AM Peak Hour											
Base Vol:	106	379	225	531	591	106	131	1347	87	441	1365	281
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	106	379	225	531	591	106	131	1347	87	441	1365	281
Added Vol:	0	0	17	12	0	0	0	58	0	43	142	28
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	106	379	242	543	591	106	131	1405	87	484	1507	309
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	115	412	263	590	642	115	142	1527	95	526	1638	336
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	115	412	263	590	642	115	142	1527	95	526	1638	336
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	115	412	263	590	642	115	142	1527	95	526	1638	336
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.87	0.87
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	4.00	1.00	2.00	3.32	0.68
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	6778	1583	3432	5484	1124
Capacity Analysis Module:												
Vol/Sat:	0.03	0.12	0.17	0.17	0.18	0.07	0.04	0.23	0.06	0.15	0.30	0.30
Crit Moves:			****	****				****		****		
Green/Cycle:	0.06	0.20	0.20	0.21	0.35	0.35	0.06	0.28	0.28	0.19	0.41	0.41
Volume/Cap:	0.52	0.57	0.81	0.81	0.52	0.21	0.73	0.81	0.22	0.81	0.73	0.73
Delay/Veh:	47.4	37.0	52.6	44.7	26.2	22.9	59.7	36.6	28.1	46.8	26.0	26.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.4	37.0	52.6	44.7	26.2	22.9	59.7	36.6	28.1	46.8	26.0	26.0
LOS by Move:	D	D	D	D	C	C	E	D	C	D	C	C
HCM2k95thQ:	128	309	459	505	362	109	188	619	106	470	617	617

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	0	1	2	0 2	0	1	2	0 4	0	1	2	0 3	1	0
Lane Group:	L	T		R	L	T		R	L	T		R	L	RT		RT
#LnsInGrps:	2	2		1	2	2		1	2	4		1	2	4		4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.98	0.98	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.96	0.96	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.06	0.20	0.20		0.21	0.35	0.35		0.06	0.28	0.28		0.19	0.41	0.41	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.96	0.98		0.98	0.89	0.84		0.99	0.97	0.89		0.98	0.90	0.90	
Q1:	1.6	5.2	6.8		7.9	6.6	1.9		2.0	10.5	1.8		7.1	11.4	11.4	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.9	1.3	3.1		3.2	1.0	0.3		1.8	3.4	0.3		3.1	2.5	2.5	
HCM2KQueue:	2.5	6.4	9.9		11.1	7.7	2.1		3.8	13.9	2.1		10.2	13.9	13.9	
70th%Factor:	1.19	1.19	1.18		1.18	1.18	1.19		1.19	1.17	1.19		1.18	1.17	1.17	
HCM2k70thQ:	3.0	7.6	11.7		13.0	9.0	2.6		4.5	16.3	2.5		12.0	16.3	16.3	
85th%Factor:	1.58	1.54	1.52		1.51	1.53	1.58		1.56	1.49	1.58		1.51	1.49	1.49	
HCM2k85thQ:	4.0	9.9	15.1		16.7	11.7	3.4		5.9	20.7	3.3		15.5	20.7	20.7	
90th%Factor:	1.75	1.69	1.64		1.63	1.67	1.76		1.73	1.60	1.76		1.64	1.60	1.60	
HCM2k90thQ:	4.4	10.9	16.3		18.1	12.8	3.8		6.5	22.3	3.7		16.8	22.2	22.2	
95th%Factor:	2.02	1.92	1.85		1.82	1.89	2.03		1.99	1.78	2.03		1.84	1.78	1.78	
HCM2k95thQ:	5.1	12.4	18.3		20.2	14.5	4.4		7.5	24.8	4.2		18.8	24.7	24.7	
98th%Factor:	2.52	2.31	2.17		2.13	2.26	2.55		2.45	2.04	2.55		2.16	2.04	2.04	
HCM2k98thQ:	6.4	14.9	21.5		23.6	17.3	5.5		9.2	28.5	5.3		22.0	28.4	28.4	

Cumul No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec):	100	Critical Vol./Cap.(X):	1.088
Loss Time (sec):	12	Average Delay (sec/veh):	67.8
Optimal Cycle:	180	Level Of Service:	E

Street Name:	West Lane												Armstrong Road											
Approach:	North Bound				South Bound				East Bound				West Bound											
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected								
Rights:	Include					Include					Include					Include								
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0						
Y+R:	4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0						
Lanes:	1	0	2	0	1	1	0	2	0	1	1	0	2	0	1	1	0	2	0	1				
Volume Module:AM Peak Hour																								
Base Vol:	29	369	252			578	526	28			37	436	23			480	445	327						
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
Initial Bse:	29	369	252			578	526	28			37	436	23			480	445	327						
Added Vol:	0	85	0			0	35	0			0	0	0			0	0	0						
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0						
Initial Fut:	29	454	252			578	561	28			37	436	23			480	445	327						
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
PHF Adj:	0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92						
PHF Volume:	32	493	274			628	610	30			40	474	25			522	484	355						
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0						
Reduced Vol:	32	493	274			628	610	30			40	474	25			522	484	355						
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
FinalVolume:	32	493	274			628	610	30			40	474	25			522	484	355						
Saturation Flow Module:																								
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900						
Adjustment:	0.93	0.93	0.83			0.93	0.93	0.83			0.93	0.93	0.83			0.93	0.93	0.83						
Lanes:	1.00	2.00	1.00			1.00	2.00	1.00			1.00	2.00	1.00			1.00	2.00	1.00						
Final Sat.:	1769	3538	1583			1769	3538	1583			1769	3538	1583			1769	3538	1583						
Capacity Analysis Module:																								
Vol/Sat:	0.02	0.14	0.17			0.36	0.17	0.02			0.02	0.13	0.02			0.29	0.14	0.22						
Crit Moves:			****			****						****				****								
Green/Cycle:	0.05	0.16	0.16			0.33	0.44	0.44			0.04	0.12	0.12			0.27	0.36	0.36						
Volume/Cap:	0.39	0.88	1.09			1.09	0.39	0.04			0.63	1.09	0.13			1.09	0.38	0.63						
Delay/Veh:	49.5	55.6	124.1			97.2	19.1	16.0			65.6	113	39.4			103.3	24.1	28.8						
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
AdjDel/Veh:	49.5	55.6	124.1			97.2	19.1	16.0			65.6	113	39.4			103.3	24.1	28.8						
LOS by Move:	D	E	F			F	B	B			E	F	D			F	C	C						
HCM2k95thQ:	73	495	660			1211	263	21			116	618	38			1053	250	417						

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Lanes:	1	0	2	0	1		1	0	2	0	1		1	0	2	0	1		1	0	2	0	1	
Lane Group:	L		T		R		L		T		R		L		T		R		L		T		R	
#LnsInGrps:	1		2		1		1		2		1		1		2		1		1		2		1	
HCM Ops Adjusted Lane Utilization Module:																								
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:			8						8						8						8			
% Hev Veh:			2						2						2						2			
Grade:			0%						0%						0%						0%			
Parking/Hr:			No						No						No						No			
Bus Stp/Hr:			0						0						0						0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0						0						0						0			
ExclusiveRT:			Include						Include						Include						Include			
% RT Prtct:			0						0						0						0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx	xxxx				1	xxxx	xxxx				1	xxxx	xxxx				1	xxxx	xxxx			
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Hev Veh Adj:	0.98	0.98	0.98				0.98	0.98	0.98				0.98	0.98	0.98				0.98	0.98	0.98			
Grade Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Parking Adj:	xxxx	xxxx	1.00				xxxx	xxxx	1.00				xxxx	xxxx	1.00				xxxx	xxxx	1.00			
Bus Stp Adj:	xxxx	xxxx	1.00				xxxx	xxxx	1.00				xxxx	xxxx	1.00				xxxx	xxxx	1.00			
Area Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
RT Adj:	xxxx	xxxx	0.85				xxxx	xxxx	0.85				xxxx	xxxx	0.85				xxxx	xxxx	0.85			
LT Adj:	0.95	xxxx	xxxxx				0.95	xxxx	xxxxx				0.95	xxxx	xxxxx				0.95	xxxx	xxxxx			
PedBike Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
HCM Sat Adj:	0.93	0.98	0.83				0.93	0.98	0.83				0.93	0.98	0.83				0.93	0.98	0.83			
Usr Sat Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
MLF Sat Adj:	1.00	0.95	1.00				1.00	0.95	1.00				1.00	0.95	1.00				1.00	0.95	1.00			
Fnl Sat Adj:	0.93	0.93	0.83				0.93	0.93	0.83				0.93	0.93	0.83				0.93	0.93	0.83			
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.05	0.16	0.16	0.33	0.44	0.44	0.04	0.12	0.12	0.27	0.36	0.36
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.99	1.00	1.00	0.79	0.74	1.00	1.00	0.96	1.00	0.86	0.90
Q1:	0.8	7.0	7.6	17.5	4.8	0.4	1.1	6.9	0.6	14.5	4.5	7.4
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.6	3.9	7.4	12.6	0.6	0.0	1.2	7.0	0.1	11.1	0.6	1.6
HCM2KQueue:	1.4	10.8	15.0	30.0	5.4	0.4	2.3	13.9	0.7	25.6	5.1	9.0
70th%Factor:	1.20	1.18	1.17	1.15	1.19	1.20	1.19	1.17	1.20	1.15	1.19	1.18
HCM2k70thQ:	1.7	12.7	17.5	34.4	6.4	0.5	2.7	16.3	0.9	29.5	6.1	10.6
85th%Factor:	1.59	1.51	1.48	1.41	1.55	1.60	1.58	1.49	1.59	1.43	1.55	1.52
HCM2k85thQ:	2.3	16.4	22.2	42.3	8.4	0.6	3.6	20.7	1.2	36.6	8.0	13.6
90th%Factor:	1.77	1.63	1.59	1.49	1.71	1.79	1.76	1.60	1.79	1.51	1.71	1.66
HCM2k90thQ:	2.5	17.7	23.8	44.7	9.2	0.7	4.0	22.2	1.3	38.7	8.8	14.8
95th%Factor:	2.05	1.83	1.76	1.61	1.94	2.09	2.03	1.78	2.08	1.64	1.95	1.86
HCM2k95thQ:	2.9	19.8	26.4	48.4	10.5	0.8	4.7	24.7	1.5	42.1	10.0	16.7
98th%Factor:	2.60	2.13	2.02	1.80	2.36	2.67	2.54	2.04	2.64	1.84	2.37	2.20
HCM2k98thQ:	3.7	23.1	30.2	54.0	12.8	1.1	5.8	28.4	2.0	47.1	12.2	19.7

Cumul No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.421
Loss Time (sec): 9 Average Delay (sec/veh): 13.6
Optimal Cycle: 30 Level Of Service: B

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0	1	1	0
Volume Module:	AM Peak Hour											
Base Vol:	31	13	19	42	27	30	31	783	29	42	783	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	31	13	19	42	27	30	31	783	29	42	783	19
Added Vol:	0	0	55	0	0	0	0	31	0	22	13	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	31	13	74	42	27	30	31	814	29	64	796	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	34	14	80	46	29	33	34	885	32	70	865	21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	14	80	46	29	33	34	885	32	70	865	21
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	34	14	80	46	29	33	34	885	32	70	865	21
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	0.81	0.80	0.80	0.80	0.93	0.93	0.93	0.93	0.93	0.93
Lanes:	0.26	0.11	0.63	0.43	0.27	0.30	1.00	1.93	0.07	1.00	1.95	0.05
Final Sat.:	405	170	967	647	416	462	1769	3399	121	1769	3445	82
Capacity Analysis Module:												
Vol/Sat:	0.08	0.08	0.08	0.07	0.07	0.07	0.02	0.26	0.26	0.04	0.25	0.25
Crit Moves:		****						****		****		
Green/Cycle:	0.20	0.20	0.20	0.20	0.20	0.20	0.05	0.62	0.62	0.09	0.66	0.66
Volume/Cap:	0.42	0.42	0.42	0.36	0.36	0.36	0.38	0.42	0.42	0.42	0.38	0.38
Delay/Veh:	36.0	36.0	36.0	35.4	35.4	35.4	48.7	10.0	10.0	44.5	7.7	7.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.0	36.0	36.0	35.4	35.4	35.4	48.7	10.0	10.0	44.5	7.7	7.7
LOS by Move:	D	D	D	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	182	182	182	149	149	149	75	213	213	125	146	146

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	1	1 0	1	0	1	1 0
Lane Group:	LTR	LTR	LTR		LTR	LTR	LTR		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	2	2		1	2	2	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8			8				8				8			
% Hev Veh:		2			2				2				2			
Grade:		0%			0%				0%				0%			
Parking/Hr:		No			No				No				No			
Bus Stp/Hr:		0			0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0			0				0				0			
ExclusiveRT:		Include			Include				Include				Include			
% RT Prtct:		0			0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	5	5	5		5	5	5		1 xxxx	xxxx			1 xxxx	xxxx		
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	1.00	1.00	1.00		1.00	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	1.00	1.00	1.00		1.00	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	0.92	0.92	0.92		0.96	0.96	0.96		xxxx	1.00	1.00		xxxx	1.00	1.00	
LT Adj:	0.91	0.91	0.91		0.85	0.85	0.85		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.81	0.81	0.81		0.80	0.80	0.80		0.93	0.98	0.98		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	0.95		1.00	0.95	0.95	
Fnl Sat Adj:	0.81	0.81	0.81		0.80	0.80	0.80		0.93	0.93	0.93		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	100	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	18.77	18.77	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	19.77	19.77	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	19.77	19.77	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	1	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	1	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	34	46	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	0.26	0.42	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	0.42	0.26	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	0.94	1.27	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	108	128	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	3.00	3.56	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	1.33	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	3.00	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	5.22	3.91	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	0.74	0.74	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	5.25	6.39	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	14.52	13.38	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	0.02	1.24	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	0.58	0.74	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	1.56	1.59	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	1.00	1.20	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	0.13	0.14	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	0.91	0.85	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	0.91	0.85	xxxxxx	xxxxxx

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.20	0.20	0.20	0.20	0.20	0.20	0.05	0.62	0.62	0.09	0.66	0.66
ArrivalType:		4			4			4			4	
ProgFactor:	0.95	0.95	0.95	0.94	0.94	0.94	0.99	0.52	0.52	0.98	0.39	0.39
Q1:	3.0	3.0	3.0	2.4	2.4	2.4	0.9	3.6	3.6	1.8	2.3	2.3
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.7	0.7	0.7	0.5	0.5	0.5	0.6	0.7	0.7	0.7	0.6	0.6
HCM2KQueue:	3.7	3.7	3.7	3.0	3.0	3.0	1.5	4.3	4.3	2.5	2.9	2.9
70th%Factor:	1.19	1.19	1.19	1.19	1.19	1.19	1.20	1.19	1.19	1.19	1.19	1.19
HCM2k70thQ:	4.4	4.4	4.4	3.5	3.5	3.5	1.7	5.1	5.1	3.0	3.5	3.5
85th%Factor:	1.57	1.57	1.57	1.57	1.57	1.57	1.59	1.56	1.56	1.58	1.57	1.57
HCM2k85thQ:	5.7	5.7	5.7	4.7	4.7	4.7	2.3	6.7	6.7	3.9	4.6	4.6
90th%Factor:	1.73	1.73	1.73	1.74	1.74	1.74	1.77	1.72	1.72	1.75	1.75	1.75
HCM2k90thQ:	6.3	6.3	6.3	5.2	5.2	5.2	2.6	7.4	7.4	4.3	5.1	5.1
95th%Factor:	1.99	1.99	1.99	2.01	2.01	2.01	2.05	1.97	1.97	2.02	2.01	2.01
HCM2k95thQ:	7.3	7.3	7.3	6.0	6.0	6.0	3.0	8.5	8.5	5.0	5.8	5.8
98th%Factor:	2.45	2.45	2.45	2.50	2.50	2.50	2.59	2.42	2.42	2.53	2.50	2.50
HCM2k98thQ:	9.0	9.0	9.0	7.4	7.4	7.4	3.8	10.4	10.4	6.2	7.2	7.2

Cumul No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.935
Loss Time (sec): 12 Average Delay (sec/veh): 43.8
Optimal Cycle: 129 Level Of Service: D

Street Name:	West Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2 0 1	2	0	2 0 1	2	0	3 1 0	2	0	3 1 0
Volume Module: AM Peak Hour												
Base Vol:	477	355	62	120	780	390	411	1240	466	143	1236	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	477	355	62	120	780	390	411	1240	466	143	1236	53
Added Vol:	40	0	41	13	0	0	0	72	15	77	173	31
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	517	355	103	133	780	390	411	1312	481	220	1409	84
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	562	386	112	145	848	424	447	1426	523	239	1532	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	562	386	112	145	848	424	447	1426	523	239	1532	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	562	386	112	145	848	424	447	1426	523	239	1532	91
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.86	0.86	0.90	0.88	0.88
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.77	0.23
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	4880	1627	3432	6345	378
Capacity Analysis Module:												
Vol/Sat:	0.16	0.11	0.07	0.04	0.24	0.27	0.13	0.29	0.32	0.07	0.24	0.24
Crit Moves:	****					****			****	****		
Green/Cycle:	0.18	0.33	0.33	0.13	0.29	0.29	0.15	0.34	0.34	0.07	0.27	0.27
Volume/Cap:	0.93	0.33	0.21	0.33	0.84	0.93	0.89	0.85	0.93	0.93	0.89	0.89
Delay/Veh:	62.7	25.1	24.1	40.1	39.7	61.5	59.2	33.6	40.3	84.9	40.7	40.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	62.7	25.1	24.1	40.1	39.7	61.5	59.2	33.6	40.3	84.9	40.7	40.7
LOS by Move:	E	C	C	D	D	E	E	C	D	F	D	D
HCM2k95thQ:	480	195	104	116	662	736	464	738	902	234	637	637

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	3	1	0	2
Lane Group:	L	T	R		L	T	R		L	RT	RT		L	RT	RT	
#LnsInGrps:	2	2	1		2	2	1		2	4	4		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.96	0.96		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.94	0.94		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.86	0.86		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.18	0.33	0.33		0.13	0.29	0.29		0.15	0.34	0.34		0.07	0.27	0.27	
ArrivalType:	4				4				4				4			
ProgFactor:	0.99	0.87	0.86		0.96	0.97	0.99		0.99	0.96	0.98		1.00	0.98	0.98	
Q1:	7.9	3.7	1.9		1.8	11.3	11.3		6.2	12.9	15.1		3.4	11.6	11.6	
UpstreamVC:	0.02	0.02	0.02		0.00	0.00	0.00		0.00	0.00	0.00		0.11	0.11	0.11	
UpstreamAdj:	1.00	1.00	1.00		0.00	0.00	0.00		0.00	0.00	0.00		1.00	1.00	1.00	
EarlyArrAdj:	0.36	0.55	0.50		1.00	1.00	1.00		1.00	1.00	1.00		0.22	0.48	0.48	
Q2:	2.6	0.3	0.1		0.5	3.8	5.7		3.9	4.2	6.3		1.4	2.8	2.8	
HCM2KQueue:	10.5	3.9	2.0		2.3	15.1	17.0		10.1	17.0	21.5		4.8	14.4	14.4	
70th%Factor:	1.18	1.19	1.20		1.19	1.17	1.17		1.18	1.17	1.16		1.19	1.17	1.17	
HCM2k70thQ:	12.3	4.7	2.4		2.7	17.6	19.8		11.9	19.9	24.9		5.7	16.9	16.9	
85th%Factor:	1.51	1.56	1.58		1.58	1.48	1.47		1.51	1.47	1.45		1.56	1.49	1.49	
HCM2k85thQ:	15.8	6.2	3.2		3.6	22.3	25.0		15.3	25.0	31.0		7.4	21.4	21.4	
90th%Factor:	1.64	1.73	1.76		1.76	1.59	1.57		1.64	1.57	1.54		1.72	1.59	1.59	
HCM2k90thQ:	17.1	6.8	3.6		4.0	23.9	26.7		16.5	26.8	33.0		8.2	23.0	23.0	
95th%Factor:	1.84	1.98	2.04		2.03	1.76	1.73		1.84	1.73	1.68		1.96	1.77	1.77	
HCM2k95thQ:	19.2	7.8	4.2		4.6	26.5	29.4		18.6	29.5	36.1		9.4	25.5	25.5	
98th%Factor:	2.15	2.44	2.55		2.54	2.01	1.97		2.16	1.97	1.89		2.39	2.03	2.03	
HCM2k98thQ:	22.5	9.6	5.2		5.8	30.3	33.5		21.8	33.6	40.6		11.4	29.2	29.2	

Cumul No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.833
Loss Time (sec): 12 Average Delay (sec/veh): 39.7
Optimal Cycle: 85 Level Of Service: D

Street Name:	Ham Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0
Volume Module:AM Peak Hour												
Base Vol:	6	16	13	386	24	70	88	1267	5	27	1347	218
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	6	16	13	386	24	70	88	1267	5	27	1347	218
Added Vol:	179	93	176	11	40	0	0	76	82	97	102	33
Pass-By:	3	0	4	0	0	0	0	-6	6	5	-5	0
Initial Fut:	188	109	193	397	64	70	88	1337	93	129	1444	251
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	204	118	210	432	70	76	96	1453	101	140	1570	273
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	204	118	210	432	70	76	96	1453	101	140	1570	273
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	204	118	210	432	70	76	96	1453	101	140	1570	273
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.90	0.90	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	0.36	0.64	1.00	0.48	0.52	1.00	4.00	1.00	1.00	4.00	1.00
Final Sat.:	1769	608	1076	1769	820	897	1769	6778	1583	1769	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.12	0.20	0.20	0.24	0.08	0.08	0.05	0.21	0.06	0.08	0.23	0.17
Crit Moves:		****		****				****		****		
Green/Cycle:	0.30	0.23	0.23	0.29	0.22	0.22	0.07	0.26	0.26	0.10	0.29	0.29
Volume/Cap:	0.38	0.83	0.83	0.83	0.38	0.38	0.81	0.83	0.25	0.83	0.81	0.60
Delay/Veh:	27.8	50.4	50.4	44.1	33.6	33.6	78.7	38.7	29.8	72.7	35.8	33.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	27.8	50.4	50.4	44.1	33.6	33.6	78.7	38.7	29.8	72.7	35.8	33.1
LOS by Move:	C	D	D	D	C	C	E	D	C	E	D	C
HCM2k95thQ:	226	541	541	642	189	189	165	549	110	231	560	321

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	1	0	0	1	0		1	0	0	1	0		1	0	4	0	1		1	0	4	0	1	
Lane Group:	L		RT		RT		L		RT		RT		L		T		R		L		T		R	
#LnsInGrps:	1		1		1		1		1		1		1		4		1		1		4		1	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:			8						8						8						8			
% Hev Veh:			2						2						2						2			
Grade:			0%						0%						0%						0%			
Parking/Hr:			No						No						No						No			
Bus Stp/Hr:			0						0						0						0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0						0						0						0			
ExclusiveRT:			Include						Include						Include						Include			
% RT Prtct:			0						0						0						0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx		
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
Hev Veh Adj:	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98
Grade Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
Parking Adj:	xxxx	1.00		1.00		xxxx	1.00	1.00		xxxx		1.00	xxxx	xxxx		1.00		xxxx	xxxx	xxxx		1.00		1.00
Bus Stp Adj:	xxxx	1.00		1.00		xxxx	1.00	1.00		xxxx		1.00	xxxx	xxxx		1.00		xxxx	xxxx	xxxx		1.00		1.00
Area Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
RT Adj:	xxxx	0.90		0.90		xxxx	0.92	0.92		xxxx		0.92	xxxx	xxxx		0.85		xxxx	xxxx	xxxx		0.85		0.85
LT Adj:	0.95	xxxx		xxxxx		0.95	xxxx	xxxxx		0.95		xxxx	0.95	xxxx		xxxxx		0.95	xxxx	xxxxx		xxxxx		xxxxx
PedBike Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
HCM Sat Adj:	0.93	0.89		0.89		0.93	0.90	0.90		0.93		0.90	0.93	0.98		0.83		0.93	0.98	0.83		0.93		0.83
Usr Sat Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
MLF Sat Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	0.91		1.00		1.00	0.91	1.00		1.00		1.00
Fnl Sat Adj:	0.93	0.89		0.89		0.93	0.90	0.90		0.93		0.90	0.93	0.89		0.83		0.93	0.89	0.83		0.93		0.83
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.30	0.23	0.23	0.29	0.22	0.22	0.07	0.26	0.26	0.10	0.29	0.29
ArrivalType:		4			4			4			4	
ProgFactor:	0.89	0.98	0.98	0.97	0.93	0.93	1.00	0.97	0.91	0.99	0.96	0.93
Q1:	4.0	8.5	8.5	10.8	3.2	3.2	2.6	10.2	2.0	3.8	10.7	6.1
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.05	0.05	0.41	0.41	0.41
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.91	0.91	0.91
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.20	0.47	0.43	0.23	0.46	0.42
Q2:	0.6	3.5	3.5	3.7	0.6	0.6	0.7	2.0	0.1	0.9	1.7	0.6
HCM2KQueue:	4.6	12.0	12.0	14.5	3.8	3.8	3.3	12.2	2.2	4.7	12.4	6.7
70th%Factor:	1.19	1.17	1.17	1.17	1.19	1.19	1.19	1.17	1.19	1.19	1.17	1.18
HCM2k70thQ:	5.5	14.1	14.1	17.0	4.5	4.5	3.9	14.3	2.6	5.6	14.6	7.9
85th%Factor:	1.56	1.50	1.50	1.48	1.56	1.56	1.57	1.50	1.58	1.56	1.50	1.54
HCM2k85thQ:	7.2	18.0	18.0	21.6	6.0	6.0	5.2	18.2	3.4	7.3	18.6	10.3
90th%Factor:	1.72	1.62	1.62	1.59	1.73	1.73	1.74	1.62	1.76	1.72	1.61	1.69
HCM2k90thQ:	7.9	19.4	19.4	23.2	6.6	6.6	5.7	19.7	3.8	8.1	20.1	11.3
95th%Factor:	1.96	1.81	1.81	1.77	1.99	1.99	2.00	1.81	2.03	1.96	1.80	1.91
HCM2k95thQ:	9.0	21.6	21.6	25.7	7.6	7.6	6.6	22.0	4.4	9.2	22.4	12.8
98th%Factor:	2.40	2.10	2.10	2.03	2.45	2.45	2.48	2.09	2.55	2.40	2.08	2.30
HCM2k98thQ:	11.0	25.1	25.1	29.5	9.3	9.3	8.2	25.4	5.5	11.3	25.9	15.4

Cumul No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St J

Cycle (sec):	100	Critical Vol./Cap.(X):	0.411
Loss Time (sec):	12	Average Delay (sec/veh):	10.5
Optimal Cycle:	36	Level Of Service:	B

Street Name:	Leach Road/Street J						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	3 1	0	1 0	3 1	0
Volume Module:	AM Peak Hour											
Base Vol:	0	0	0	0	0	4	0	1333	0	0	1663	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	4	0	1333	0	0	1663	2
Added Vol:	131	0	116	0	0	0	0	219	44	39	101	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	131	0	116	0	0	4	0	1552	44	39	1764	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	142	0	126	0	0	4	0	1687	48	42	1917	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	142	0	126	0	0	4	0	1687	48	42	1917	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	142	0	126	0	0	4	0	1687	48	42	1917	2
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	1.00	1.00	0.83	1.00	0.89	0.89	0.93	0.89	0.89
Lanes:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	3.89	0.11	1.00	3.99	0.01
Final Sat.:	1769	1900	1583	1900	0	1583	1900	6564	186	1769	6770	8
Capacity Analysis Module:												
Vol/Sat:	0.08	0.00	0.08	0.00	0.00	0.00	0.00	0.26	0.26	0.02	0.28	0.28
Crit Moves:	****				****			****		****		
Green/Cycle:	0.20	0.00	0.20	0.00	0.00	0.00	0.00	0.63	0.63	0.06	0.68	0.68
Volume/Cap:	0.41	0.00	0.41	0.00	0.00	xxxx	0.00	0.41	0.41	0.41	0.41	0.41
Delay/Veh:	35.9	0.0	36.0	0.0	0.0	0.0	0.0	9.5	9.5	48.1	7.0	7.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.9	0.0	36.0	0.0	0.0	0.0	0.0	9.5	9.5	48.1	7.0	7.0
LOS by Move:	D	A	D	A	A	A	A	A	A	D	A	A
HCM2k95thQ:	196	0	177	0	0	6	0	179	179	90	140	140

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	1	0	1	1	0	0	1	0	1	0	3	1	0	
Lane Group:	L	T	R		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	4	4		1	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	xxxx	0.98		xxxx	xxxx	0.98		xxxx	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	1.00	1.00		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	1.00	0.83		1.00	1.00	0.83		1.00	0.98	0.98		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.91	0.91		1.00	0.91	0.91	
Fnl Sat Adj:	0.93	1.00	0.83		1.00	1.00	0.83		1.00	0.89	0.89		0.93	0.89	0.89	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	1.00		0.00	0.00	0.00		0.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.20	0.00	0.20		0.00	0.00	0.00		0.00	0.63	0.63		0.06	0.68	0.68	
ArrivalType:		4				4				4				4		
ProgFactor:	0.95	1.00	0.95		1.00	1.00	1.00		1.00	0.50	0.50		0.99	0.32	0.32	
Q1:	3.3	0.0	2.9		0.0	0.0	0.1		0.0	3.3	3.3		1.1	2.1	2.1	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.83	0.83		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.44	0.44		0.00	0.00	0.00	
EarlyArrAdj:	1.00	0.00	1.00		0.00	0.00	0.00		0.00	0.36	0.36		1.00	1.00	1.00	
Q2:	0.7	0.0	0.7		0.0	0.0	0.0		0.0	0.2	0.2		0.6	0.7	0.7	
HCM2KQueue:	4.0	0.0	3.6		0.0	0.0	0.1		0.0	3.6	3.6		1.8	2.8	2.8	
70th%Factor:	1.19	1.20	1.19		1.20	1.20	1.20		1.20	1.19	1.19		1.20	1.19	1.19	
HCM2k70thQ:	4.7	0.0	4.2		0.0	0.0	0.1		0.0	4.3	4.3		2.1	3.3	3.3	
85th%Factor:	1.56	1.60	1.57		1.60	1.60	1.60		1.60	1.57	1.57		1.58	1.57	1.57	
HCM2k85thQ:	6.2	0.0	5.6		0.0	0.0	0.2		0.0	5.6	5.6		2.8	4.4	4.4	
90th%Factor:	1.73	1.80	1.73		1.80	1.80	1.80		1.80	1.73	1.73		1.77	1.75	1.75	
HCM2k90thQ:	6.8	0.0	6.2		0.0	0.0	0.2		0.0	6.2	6.2		3.1	4.9	4.9	
95th%Factor:	1.98	2.10	1.99		2.10	2.10	2.10		2.10	1.99	1.99		2.04	2.01	2.01	
HCM2k95thQ:	7.8	0.0	7.1		0.0	0.0	0.3		0.0	7.1	7.1		3.6	5.6	5.6	
98th%Factor:	2.44	2.70	2.46		2.70	2.70	2.69		2.70	2.46	2.46		2.57	2.51	2.51	
HCM2k98thQ:	9.6	0.0	8.8		0.0	0.0	0.3		0.0	8.8	8.8		4.5	7.0	7.0	

Cumul No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Cycle (sec):	100	Critical Vol./Cap.(X):	0.621
Loss Time (sec):	12	Average Delay (sec/veh):	29.2
Optimal Cycle:	50	Level Of Service:	C

Street Name:	Micke Grove Road/Holman Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	1	0	2	0	1	2	0
Volume Module:AM Peak Hour												
Base Vol:	305	86	27	45	235	213	206	1120	338	71	1120	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	305	86	27	45	235	213	206	1120	338	71	1120	18
Added Vol:	18	0	0	0	0	23	57	240	38	0	99	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	323	86	27	45	235	236	263	1360	376	71	1219	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	351	93	29	49	255	257	286	1478	409	77	1325	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	351	93	29	49	255	257	286	1478	409	77	1325	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	351	93	29	49	255	257	286	1478	409	77	1325	20
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.89
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	3.94	0.06
Final Sat.:	3432	3538	1583	1769	3538	1583	3432	6778	1583	3432	6666	98
Capacity Analysis Module:												
Vol/Sat:	0.10	0.03	0.02	0.03	0.07	0.16	0.08	0.22	0.26	0.02	0.20	0.20
Crit Moves:	****					****	****				****	
Green/Cycle:	0.16	0.21	0.21	0.22	0.26	0.26	0.13	0.42	0.42	0.04	0.32	0.32
Volume/Cap:	0.62	0.13	0.09	0.13	0.28	0.62	0.62	0.52	0.62	0.62	0.62	0.62
Delay/Veh:	41.0	32.3	32.1	31.6	29.6	35.5	43.5	21.8	24.6	56.5	29.4	29.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.0	32.3	32.1	31.6	29.6	35.5	43.5	21.8	24.6	56.5	29.4	29.4
LOS by Move:	D	C	C	C	C	D	D	C	C	E	C	C
HCM2k95thQ:	290	60	36	59	154	353	255	382	428	64	403	403

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Lanes:	2	0	2	0	1	1	0	2	0	1	2	0	4	0	1	2
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	2	2	1		1	2	1		2	4	1		2	4	4	
HCM Ops Adjusted Lane Utilization Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		1.00	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.93	0.83		0.93	0.93	0.83		0.90	0.89	0.83		0.90	0.89	0.89	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.16	0.21	0.21	0.22	0.26	0.26	0.13	0.42	0.42	0.04	0.32	0.32
ArrivalType:		4			4			4			4	
ProgFactor:	0.97	0.92	0.92	0.92	0.91	0.94	0.98	0.84	0.86	1.00	0.92	0.92
Q1:	4.5	1.0	0.6	1.0	2.7	5.9	3.8	7.0	7.7	1.1	8.0	8.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.66	0.66
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.70	0.70
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.10	0.38	0.38
Q2:	1.5	0.1	0.1	0.1	0.4	1.5	1.5	1.1	1.5	0.2	0.6	0.6
HCM2KQueue:	6.0	1.2	0.7	1.1	3.1	7.4	5.2	8.1	9.2	1.2	8.6	8.6
70th%Factor:	1.19	1.20	1.20	1.20	1.19	1.18	1.19	1.18	1.18	1.20	1.18	1.18
HCM2k70thQ:	7.1	1.4	0.8	1.4	3.7	8.8	6.2	9.6	10.9	1.5	10.2	10.2
85th%Factor:	1.55	1.59	1.59	1.59	1.57	1.53	1.55	1.53	1.52	1.59	1.53	1.53
HCM2k85thQ:	9.3	1.9	1.1	1.8	4.8	11.4	8.1	12.4	14.0	2.0	13.1	13.1
90th%Factor:	1.70	1.78	1.79	1.78	1.74	1.68	1.71	1.67	1.65	1.78	1.66	1.66
HCM2k90thQ:	10.2	2.1	1.3	2.0	5.4	12.5	8.9	13.5	15.2	2.2	14.3	14.3
95th%Factor:	1.93	2.06	2.08	2.06	2.01	1.90	1.95	1.88	1.86	2.06	1.87	1.87
HCM2k95thQ:	11.6	2.4	1.5	2.4	6.2	14.1	10.2	15.3	17.1	2.5	16.1	16.1
98th%Factor:	2.33	2.61	2.65	2.62	2.49	2.26	2.37	2.24	2.19	2.61	2.22	2.22
HCM2k98thQ:	14.0	3.1	1.9	3.0	7.7	16.9	12.4	18.1	20.2	3.2	19.1	19.1

Cumul No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Eight Mile & SR 99 W Frontage

Cycle (sec):	100	Critical Vol./Cap.(X):	0.686
Loss Time (sec):	12	Average Delay (sec/veh):	25.0
Optimal Cycle:	57	Level Of Service:	C

Street Name:	SR 99 West Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1	0	1 0	0	1	0	3	0 1	2 0	2 1 0
Volume Module:AM Peak Hour												
Base Vol:	1	4	80	330	5	2	4	1173	1	130	1188	210
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	4	80	330	5	2	4	1173	1	130	1188	210
Added Vol:	0	0	0	0	0	0	0	240	0	0	99	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	4	80	330	5	2	4	1413	1	130	1287	210
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	1	4	87	359	5	2	4	1536	1	141	1399	228
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	4	87	359	5	2	4	1536	1	141	1399	228
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	4	87	359	5	2	4	1536	1	141	1399	228
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.84	0.84	0.93	0.94	0.94	0.93	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	0.05	0.95	1.00	0.71	0.29	1.00	3.00	1.00	2.00	2.58	0.42
Final Sat.:	1769	76	1520	1769	1273	509	1769	5083	1583	3432	4278	698
Capacity Analysis Module:												
Vol/Sat:	0.00	0.06	0.06	0.20	0.00	0.00	0.00	0.30	0.00	0.04	0.33	0.33
Crit Moves:		****		****				****		****		
Green/Cycle:	0.05	0.08	0.08	0.30	0.33	0.33	0.00	0.44	0.44	0.06	0.50	0.50
Volume/Cap:	0.01	0.69	0.69	0.69	0.01	0.01	0.66	0.69	0.00	0.69	0.66	0.66
Delay/Veh:	45.4	58.4	58.4	34.9	22.4	22.4	182.6	23.3	15.7	55.3	19.5	19.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.4	58.4	58.4	34.9	22.4	22.4	182.6	23.3	15.7	55.3	19.5	19.5
LOS by Move:	D	E	E	C	C	C	F	C	B	E	B	B
HCM2k95thQ:	2	203	203	472	7	7	9	540	1	118	507	507

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0	3	0	1	2
Lane Group:	L	RT			RT	L	RT		RT	L	T		R	L	RT	RT
#LnsInGrps:	1	1			1	1	1		1	1	3		1	2	3	3
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12			12	12	12		12	12	12		12	12	12	12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.86	0.86		xxxx	0.96	0.96		xxxx	xxxx	0.85		xxxx	0.98	0.98	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.84	0.84		0.93	0.94	0.94		0.93	0.98	0.83		0.93	0.96	0.96	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.84	0.84		0.93	0.94	0.94		0.93	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.05	0.08	0.08		0.30	0.33	0.33		0.00	0.44	0.44		0.06	0.50	0.50	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.99	0.99		0.94	0.84	0.84		1.00	0.86	0.74		0.99	0.80	0.80	
Q1:	0.0	2.4	2.4		8.3	0.1	0.1		0.1	10.8	0.0		2.0	9.9	9.9	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.52	0.52	0.52		0.35	0.35	0.35	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.84	0.84	0.84		0.95	0.95	0.95	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.03	0.55	0.50		0.18	0.66	0.66	
Q2:	0.0	1.7	1.7		2.0	0.0	0.0		0.0	1.2	0.0		0.4	1.2	1.2	
HCM2KQueue:	0.0	4.1	4.1		10.3	0.1	0.1		0.2	11.9	0.0		2.3	11.1	11.1	
70th%Factor:	1.20	1.19	1.19		1.18	1.20	1.20		1.20	1.17	1.20		1.19	1.18	1.18	
HCM2k70thQ:	0.0	4.9	4.9		12.1	0.2	0.2		0.2	14.0	0.0		2.8	13.1	13.1	
85th%Factor:	1.60	1.56	1.56		1.51	1.60	1.60		1.60	1.50	1.60		1.58	1.51	1.51	
HCM2k85thQ:	0.1	6.4	6.4		15.5	0.2	0.2		0.3	17.9	0.0		3.7	16.8	16.8	
90th%Factor:	1.80	1.73	1.73		1.64	1.80	1.80		1.80	1.62	1.80		1.76	1.63	1.63	
HCM2k90thQ:	0.1	7.1	7.1		16.8	0.2	0.2		0.3	19.4	0.0		4.1	18.1	18.1	
95th%Factor:	2.10	1.98	1.98		1.84	2.10	2.10		2.09	1.81	2.10		2.03	1.82	1.82	
HCM2k95thQ:	0.1	8.1	8.1		18.9	0.3	0.3		0.4	21.6	0.0		4.7	20.3	20.3	
98th%Factor:	2.70	2.43	2.43		2.15	2.69	2.69		2.69	2.10	2.70		2.54	2.12	2.12	
HCM2k98thQ:	0.1	10.0	10.0		22.1	0.4	0.4		0.5	25.1	0.0		5.9	23.6	23.6	

Cumul No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Eight Mile & SR 99 E Frontage

Cycle (sec):	100	Critical Vol./Cap.(X):	0.181
Loss Time (sec):	12	Average Delay (sec/veh):	5.1
Optimal Cycle:	27	Level Of Service:	A

Street Name:	SR 99 East Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	2 0	1	1 0	1 1	0
Volume Module:AM Peak Hour												
Base Vol:	5	1	3	8	2	5	5	450	5	8	450	3
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	1	3	8	2	5	5	450	5	8	450	3
Added Vol:	12	0	0	0	0	0	0	14	28	0	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	17	1	3	8	2	5	5	464	33	8	456	3
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	18	1	3	9	2	5	5	504	36	9	496	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	18	1	3	9	2	5	5	504	36	9	496	3
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	18	1	3	9	2	5	5	504	36	9	496	3
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.87	0.87	0.93	0.88	0.88	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	1.00	0.25	0.75	1.00	0.29	0.71	1.00	2.00	1.00	1.00	1.99	0.01
Final Sat.:	1769	413	1240	1769	475	1188	1769	3538	1583	1769	3511	23
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.02	0.00	0.14	0.14
Crit Moves:	****				****		****				****	
Green/Cycle:	0.06	0.03	0.03	0.05	0.03	0.03	0.02	0.77	0.77	0.03	0.78	0.78
Volume/Cap:	0.18	0.09	0.09	0.09	0.18	0.18	0.18	0.19	0.03	0.19	0.18	0.18
Delay/Veh:	45.7	48.1	48.1	45.4	49.8	49.8	51.4	3.1	2.7	49.5	2.8	2.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.7	48.1	48.1	45.4	49.8	49.8	51.4	3.1	2.7	49.5	2.8	2.8
LOS by Move:	D	D	D	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	36	11	11	17	22	22	9	11	1	24	12	12

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	0 1	0		1 0	0 1	0		1 0	2 0	1		1 0	1 1	0	
Lane Group:	L	RT	RT		L	RT	RT		L	T	R		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	2	1		1	2	2	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.89	0.89		xxxx	0.89	0.89		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.87	0.87		0.93	0.88	0.88		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	0.95	
Fnl Sat Adj:	0.93	0.87	0.87		0.93	0.88	0.88		0.93	0.93	0.83		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.06	0.03	0.03	0.05	0.03	0.03	0.02	0.77	0.77	0.03	0.78	0.78
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.99	0.99	0.98	0.99	0.99	1.00	0.00	0.00	0.99	0.00	0.00
Q1:	0.5	0.1	0.1	0.2	0.2	0.2	0.1	0.0	0.0	0.2	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.21	0.21	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.99	0.99	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.09	0.90	0.82	1.00	1.00	1.00
Q2:	0.2	0.1	0.1	0.1	0.2	0.2	0.0	0.2	0.0	0.2	0.2	0.2
HCM2KQueue:	0.7	0.2	0.2	0.3	0.4	0.4	0.2	0.2	0.0	0.5	0.2	0.2
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	0.8	0.3	0.3	0.4	0.5	0.5	0.2	0.2	0.0	0.5	0.3	0.3
85th%Factor:	1.59	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
HCM2k85thQ:	1.1	0.3	0.3	0.5	0.7	0.7	0.3	0.3	0.0	0.7	0.4	0.4
90th%Factor:	1.79	1.80	1.80	1.79	1.79	1.79	1.80	1.80	1.80	1.79	1.80	1.80
HCM2k90thQ:	1.2	0.4	0.4	0.6	0.7	0.7	0.3	0.4	0.0	0.8	0.4	0.4
95th%Factor:	2.08	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.10	2.09	2.09	2.09
HCM2k95thQ:	1.4	0.4	0.4	0.7	0.9	0.9	0.4	0.4	0.1	0.9	0.5	0.5
98th%Factor:	2.65	2.68	2.68	2.68	2.67	2.67	2.69	2.68	2.70	2.67	2.68	2.68
HCM2k98thQ:	1.8	0.6	0.6	0.9	1.1	1.1	0.5	0.5	0.1	1.2	0.6	0.6

Cumul No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 West & L.C.MarkTaylor/Marlette

Cycle (sec): 100 Critical Vol./Cap.(X): 0.556
Loss Time (sec): 12 Average Delay (sec/veh): 27.0
Optimal Cycle: 45 Level Of Service: C

Street Name:	West Lane						Lt.Col.Mark Taylor/Marlette Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3	1	0	2	0	3	1	0	1	0
Volume Module:AM Peak Hour												
Base Vol:	160	734	37	57	1237	105	126	110	137	72	106	28
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	160	734	37	57	1237	105	126	110	137	72	106	28
Added Vol:	0	28	45	16	68	5	3	26	0	115	66	43
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	160	762	82	73	1305	110	129	136	137	187	172	71
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	174	828	89	79	1418	120	140	148	149	203	187	77
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	174	828	89	79	1418	120	140	148	149	203	187	77
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	174	828	89	79	1418	120	140	148	149	203	187	77
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.88	0.88	0.90	0.88	0.88	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	2.00	3.61	0.39	2.00	3.69	0.31	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3432	6027	649	3432	6176	521	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.05	0.14	0.14	0.02	0.23	0.23	0.08	0.04	0.09	0.11	0.05	0.05
Crit Moves:	****				****				****	****		
Green/Cycle:	0.09	0.43	0.43	0.07	0.41	0.41	0.23	0.17	0.17	0.21	0.15	0.15
Volume/Cap:	0.56	0.32	0.32	0.32	0.56	0.56	0.35	0.25	0.56	0.56	0.35	0.32
Delay/Veh:	45.7	18.8	18.8	44.8	22.6	22.6	33.1	36.2	40.7	37.4	38.5	38.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.7	18.8	18.8	44.8	22.6	22.6	33.1	36.2	40.7	37.4	38.5	38.7
LOS by Move:	D	B	B	D	C	C	C	D	D	D	D	D
HCM2k95thQ:	173	203	203	60	393	393	178	107	236	290	145	117

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #16 West & L.C.MarkTaylor/Marlette

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 3	1	0	2	0 3	1	0	1	0 2	0	1	1	0 2	0	1
Lane Group:	L	RT		RT	L	RT		RT	L	T		R	L	T		R
#LnsInGrps:	2	4		4	2	4		4	1	2		1	1	2		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.99	0.99		xxxx	0.99	0.99		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.97	0.97		0.93	0.97	0.97		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	0.91		0.97	0.91	0.91		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.90	0.88	0.88		0.90	0.88	0.88		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #16 West & L.C.MarkTaylor/Marlette

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.09	0.43	0.43		0.07	0.41	0.41		0.23	0.17	0.17		0.21	0.15	0.15	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.79	0.79		0.98	0.85	0.85		0.93	0.95	0.97		0.95	0.96	0.96	
Q1:	2.3	3.6	3.6		1.1	7.6	7.6		3.0	1.8	3.7		4.8	2.4	1.8	
UpstreamVC:	0.00	0.00	0.00		0.02	0.02	0.02		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		1.00	1.00	1.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		0.21	0.62	0.62		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	1.1	0.5	0.5		0.1	0.8	0.8		0.5	0.3	1.2		1.2	0.5	0.5	
HCM2KQueue:	3.5	4.1	4.1		1.2	8.4	8.4		3.6	2.1	4.8		6.0	2.9	2.3	
70th%Factor:	1.19	1.19	1.19		1.20	1.18	1.18		1.19	1.19	1.19		1.19	1.19	1.19	
HCM2k70thQ:	4.1	4.9	4.9		1.4	9.9	9.9		4.3	2.5	5.7		7.1	3.4	2.8	
85th%Factor:	1.57	1.56	1.56		1.59	1.53	1.53		1.57	1.58	1.56		1.55	1.57	1.58	
HCM2k85thQ:	5.4	6.4	6.4		1.8	12.8	12.8		5.6	3.3	7.5		9.3	4.5	3.6	
90th%Factor:	1.74	1.73	1.73		1.78	1.66	1.66		1.73	1.76	1.71		1.70	1.75	1.76	
HCM2k90thQ:	6.0	7.1	7.1		2.1	13.9	13.9		6.2	3.7	8.3		10.2	5.0	4.0	
95th%Factor:	2.00	1.98	1.98		2.06	1.88	1.88		1.99	2.03	1.96		1.93	2.01	2.03	
HCM2k95thQ:	6.9	8.1	8.1		2.4	15.7	15.7		7.1	4.3	9.5		11.6	5.8	4.7	
98th%Factor:	2.47	2.43	2.43		2.61	2.23	2.23		2.46	2.55	2.39		2.33	2.50	2.54	
HCM2k98thQ:	8.5	10.0	10.0		3.0	18.6	18.6		8.8	5.3	11.5		14.0	7.2	5.8	

Cumul No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

Cycle (sec):	100	Critical Vol./Cap.(X):	0.929
Loss Time (sec):	12	Average Delay (sec/veh):	46.8
Optimal Cycle:	125	Level Of Service:	D

Street Name:	Holman Road						Lt. Col. Mark Taylor Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	1 0	1	1 0	0 1	0
Volume Module:AM Peak Hour												
Base Vol:	38	228	161	281	337	28	35	429	30	299	427	149
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	38	228	161	281	337	28	35	429	30	299	427	149
Added Vol:	10	2	0	13	3	9	21	158	24	0	62	8
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	48	230	161	294	340	37	56	587	54	299	489	157
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	52	250	175	320	370	40	61	638	59	325	532	171
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	52	250	175	320	370	40	61	638	59	325	532	171
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	52	250	175	320	370	40	61	638	59	325	532	171
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.98	0.83	0.93	0.94	0.94
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.00	1.00	1.00	0.76	0.24
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	1862	1583	1769	1359	436
Capacity Analysis Module:												
Vol/Sat:	0.03	0.05	0.11	0.18	0.07	0.03	0.03	0.34	0.04	0.18	0.39	0.39
Crit Moves:			****	****				****		****		
Green/Cycle:	0.09	0.12	0.12	0.19	0.22	0.22	0.05	0.37	0.37	0.20	0.52	0.52
Volume/Cap:	0.33	0.41	0.93	0.93	0.33	0.11	0.75	0.93	0.10	0.93	0.75	0.75
Delay/Veh:	43.8	41.3	89.3	70.5	32.7	31.1	79.1	49.4	20.8	70.0	22.3	22.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.8	41.3	89.3	70.5	32.7	31.1	79.1	49.4	20.8	70.0	22.3	22.3
LOS by Move:	D	D	F	E	C	C	E	D	C	E	C	C
HCM2k95thQ:	74	125	308	607	170	49	106	887	48	614	669	669

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	3 0	1	1	1 0	3 0	1	1	1 0	1 0	1	1	1 0	0 1	0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	3	1		1	3	1		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12				
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.96	0.96	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.94	0.94	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.98	0.83		0.93	0.94	0.94	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.09	0.12	0.12	0.19	0.22	0.22	0.05	0.37	0.37	0.20	0.52	0.52
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.97	1.00	0.99	0.93	0.91	1.00	0.97	0.82	0.99	0.81	0.81
Q1:	1.3	2.3	4.8	8.7	2.9	0.8	1.7	16.6	0.9	8.8	12.5	12.5
UpstreamVC:	0.44	0.44	0.44	0.00	0.00	0.00	0.06	0.06	0.06	0.00	0.00	0.00
UpstreamAdj:	0.90	0.90	0.90	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
EarlyArrAdj:	0.22	0.27	0.24	1.00	1.00	1.00	0.16	0.59	0.53	1.00	1.00	1.00
Q2:	0.1	0.2	1.6	5.0	0.5	0.1	0.4	4.4	0.1	5.0	2.8	2.8
HCM2KQueue:	1.4	2.5	6.4	13.6	3.4	0.9	2.1	21.0	0.9	13.8	15.2	15.2
70th%Factor:	1.20	1.19	1.19	1.17	1.19	1.20	1.19	1.16	1.20	1.17	1.17	1.17
HCM2k70thQ:	1.7	3.0	7.6	16.0	4.1	1.1	2.5	24.4	1.1	16.2	17.8	17.8
85th%Factor:	1.59	1.58	1.54	1.49	1.57	1.59	1.58	1.45	1.59	1.49	1.48	1.48
HCM2k85thQ:	2.3	3.9	9.9	20.3	5.3	1.5	3.3	30.5	1.5	20.6	22.5	22.5
90th%Factor:	1.77	1.75	1.69	1.60	1.74	1.78	1.76	1.54	1.78	1.60	1.59	1.59
HCM2k90thQ:	2.5	4.3	10.8	21.9	5.9	1.7	3.7	32.4	1.7	22.1	24.2	24.2
95th%Factor:	2.05	2.02	1.92	1.78	2.00	2.07	2.03	1.69	2.07	1.78	1.76	1.76
HCM2k95thQ:	2.9	5.0	12.3	24.3	6.8	1.9	4.2	35.5	1.9	24.6	26.8	26.8
98th%Factor:	2.60	2.53	2.31	2.05	2.47	2.63	2.55	1.90	2.63	2.05	2.01	2.01
HCM2k98thQ:	3.7	6.3	14.8	28.0	8.4	2.5	5.3	39.9	2.5	28.3	30.6	30.6

Cumul No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.718
Loss Time (sec):	12	Average Delay (sec/veh):	30.1
Optimal Cycle:	62	Level Of Service:	C

Street Name:	West Lane						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	4 0	1	2 0	4 0	1	2 0	2 0	1	2 0	2 0	1
Volume Module:	AM Peak Hour											
Base Vol:	294	874	131	84	1473	80	99	255	259	232	218	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	294	874	131	84	1473	80	99	255	259	232	218	37
Added Vol:	0	65	33	0	163	19	7	4	0	78	9	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	294	939	164	84	1636	99	106	259	259	310	227	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	320	1021	178	91	1778	108	115	282	282	337	247	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	320	1021	178	91	1778	108	115	282	282	337	247	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	320	1021	178	91	1778	108	115	282	282	337	247	40
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.93	0.83	0.90	0.93	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	3538	1583	3432	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.09	0.15	0.11	0.03	0.26	0.07	0.03	0.08	0.18	0.10	0.07	0.03
Crit Moves:	****				****				****	****		
Green/Cycle:	0.13	0.42	0.42	0.07	0.37	0.37	0.13	0.25	0.25	0.14	0.26	0.26
Volume/Cap:	0.72	0.36	0.27	0.36	0.72	0.19	0.27	0.32	0.72	0.72	0.27	0.10
Delay/Veh:	47.3	19.8	19.1	44.9	28.3	21.7	39.9	30.9	40.7	46.6	29.6	28.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.3	19.8	19.1	44.9	28.3	21.7	39.9	30.9	40.7	46.6	29.6	28.2
LOS by Move:	D	B	B	D	C	C	D	C	D	D	C	C
HCM2k95thQ:	305	236	147	90	583	98	92	177	422	316	149	45

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	2	0	1	2	0	2	0	1
Lane Group:	L	T		R	L	T		R	L	T		R	L	T		R
#LnsInGrps:	2	4		1	2	4		1	2	2		1	2	2		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.95	1.00		0.97	0.95	1.00	
Fnl Sat Adj:	0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.93	0.83		0.90	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.13	0.42	0.42		0.07	0.37	0.37		0.13	0.25	0.25		0.14	0.26	0.26	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.81	0.79		0.98	0.92	0.83		0.96	0.92	0.96		0.98	0.91	0.89	
Q1:	4.3	4.3	2.6		1.2	10.7	1.7		1.4	3.1	6.9		4.5	2.6	0.8	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	2.0	0.6	0.4		0.5	2.3	0.2		0.4	0.5	2.2		2.1	0.4	0.1	
HCM2KQueue:	6.4	4.8	2.9		1.8	13.0	1.9		1.8	3.6	9.1		6.6	3.0	0.9	
70th%Factor:	1.19	1.19	1.19		1.20	1.17	1.20		1.20	1.19	1.18		1.18	1.19	1.20	
HCM2k70thQ:	7.5	5.7	3.5		2.1	15.3	2.3		2.2	4.2	10.7		7.8	3.5	1.0	
85th%Factor:	1.54	1.56	1.57		1.58	1.49	1.58		1.58	1.57	1.52		1.54	1.57	1.59	
HCM2k85thQ:	9.8	7.5	4.6		2.8	19.5	3.0		2.8	5.6	13.8		10.2	4.7	1.4	
90th%Factor:	1.69	1.71	1.75		1.77	1.61	1.76		1.77	1.73	1.65		1.69	1.74	1.78	
HCM2k90thQ:	10.7	8.3	5.1		3.1	20.9	3.4		3.2	6.2	15.0		11.1	5.2	1.5	
95th%Factor:	1.92	1.96	2.01		2.04	1.79	2.04		2.04	1.99	1.86		1.92	2.01	2.07	
HCM2k95thQ:	12.2	9.5	5.9		3.6	23.3	3.9		3.7	7.1	16.9		12.6	6.0	1.8	
98th%Factor:	2.31	2.39	2.50		2.57	2.07	2.56		2.57	2.46	2.20		2.30	2.50	2.64	
HCM2k98thQ:	14.7	11.5	7.3		4.5	26.9	4.9		4.6	8.7	19.9		15.2	7.4	2.3	

Cumul No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.493
Loss Time (sec):	12	Average Delay (sec/veh):	32.9
Optimal Cycle:	40	Level Of Service:	C

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:	AM Peak Hour											
Base Vol:	118	405	80	185	687	117	137	465	100	161	472	93
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	118	405	80	185	687	117	137	465	100	161	472	93
Added Vol:	6	12	0	0	28	0	0	30	15	0	11	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	124	417	80	185	715	117	137	495	115	161	483	93
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	135	453	87	201	777	127	149	538	125	175	525	101
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	135	453	87	201	777	127	149	538	125	175	525	101
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	135	453	87	201	777	127	149	538	125	175	525	101
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.08	0.09	0.05	0.11	0.15	0.08	0.08	0.11	0.08	0.10	0.10	0.06
Crit Moves:	****				****			****		****		
Green/Cycle:	0.15	0.20	0.20	0.26	0.31	0.31	0.19	0.21	0.21	0.20	0.23	0.23
Volume/Cap:	0.49	0.44	0.27	0.44	0.49	0.26	0.45	0.49	0.37	0.49	0.45	0.28
Delay/Veh:	40.1	35.1	34.0	31.5	28.3	26.2	37.1	34.8	34.2	36.5	33.4	32.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.1	35.1	34.0	31.5	28.3	26.2	37.1	34.8	34.2	36.5	33.4	32.2
LOS by Move:	D	D	C	C	C	C	D	C	C	D	C	C
HCM2k95thQ:	180	203	103	228	303	125	212	266	167	219	228	116

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L - T - R				L - T - R				L - T - R				L - T - R			
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	3 0	1		1 0	3 0	1		1 0	3 0	1		1 0	3 0	1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	3	1		1	3	1		1	3	1		1	3	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12				
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.15	0.20	0.20	0.26	0.31	0.31	0.19	0.21	0.21	0.20	0.23	0.23
ArrivalType:		4			4			4			4	
ProgFactor:	0.97	0.95	0.93	0.92	0.90	0.88	0.95	0.95	0.94	0.95	0.94	0.92
Q1:	3.3	3.8	1.9	4.3	5.8	2.3	3.5	4.5	2.8	4.1	4.3	2.1
UpstreamVC:	0.36	0.36	0.36	0.33	0.33	0.33	0.00	0.00	0.00	0.35	0.35	0.35
UpstreamAdj:	0.94	0.94	0.94	0.95	0.95	0.95	0.00	0.00	0.00	0.94	0.94	0.94
EarlyArrAdj:	0.32	0.39	0.35	0.44	0.50	0.46	1.00	1.00	1.00	0.37	0.42	0.38
Q2:	0.3	0.3	0.1	0.3	0.5	0.2	0.8	0.9	0.6	0.4	0.3	0.1
HCM2KQueue:	3.6	4.1	2.0	4.6	6.3	2.5	4.3	5.5	3.3	4.5	4.6	2.3
70th%Factor:	1.19	1.19	1.20	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19
HCM2k70thQ:	4.3	4.9	2.4	5.5	7.5	3.0	5.1	6.5	4.0	5.3	5.5	2.7
85th%Factor:	1.57	1.56	1.58	1.56	1.54	1.58	1.56	1.55	1.57	1.56	1.56	1.58
HCM2k85thQ:	5.7	6.4	3.2	7.2	9.7	3.9	6.7	8.5	5.2	6.9	7.2	3.6
90th%Factor:	1.73	1.73	1.76	1.72	1.69	1.75	1.72	1.70	1.74	1.72	1.72	1.76
HCM2k90thQ:	6.3	7.1	3.6	8.0	10.7	4.3	7.4	9.4	5.8	7.7	8.0	4.0
95th%Factor:	1.99	1.98	2.04	1.96	1.92	2.02	1.97	1.94	2.00	1.97	1.96	2.03
HCM2k95thQ:	7.2	8.1	4.1	9.1	12.1	5.0	8.5	10.7	6.7	8.8	9.1	4.6
98th%Factor:	2.46	2.43	2.56	2.40	2.32	2.53	2.42	2.36	2.47	2.41	2.40	2.54
HCM2k98thQ:	8.9	10.0	5.2	11.1	14.6	6.3	10.4	12.9	8.3	10.7	11.1	5.8

Cumul No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 Morada Ln & SR99 W Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.408
Loss Time (sec):	12	Average Delay (sec/veh):	24.2
Optimal Cycle:	36	Level Of Service:	C

Street Name:	SR 99 West Frontage Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	2 0	0 1	0	1 0	2 1	0	1 0	2 0	1
Volume Module:	AM Peak Hour											
Base Vol:	3	27	45	415	34	11	16	479	2	90	517	272
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	27	45	415	34	11	16	479	2	90	517	272
Added Vol:	0	0	0	0	0	0	0	30	0	0	11	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	27	45	415	34	11	16	509	2	90	528	272
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	3	29	49	451	37	12	17	553	2	98	574	296
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	29	49	451	37	12	17	553	2	98	574	296
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	29	49	451	37	12	17	553	2	98	574	296
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.90	0.94	0.94	0.93	0.89	0.89	0.93	0.93	0.83
Lanes:	2.00	1.00	1.00	2.00	0.76	0.24	1.00	2.99	0.01	1.00	2.00	1.00
Final Sat.:	3432	1862	1583	3432	1355	438	1769	5058	20	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.02	0.03	0.13	0.03	0.03	0.01	0.11	0.11	0.06	0.16	0.19
Crit Moves:			****	****			****					****
Green/Cycle:	0.01	0.08	0.08	0.32	0.38	0.38	0.02	0.32	0.32	0.16	0.46	0.46
Volume/Cap:	0.07	0.21	0.41	0.41	0.07	0.07	0.41	0.34	0.34	0.34	0.35	0.41
Delay/Veh:	49.4	44.1	46.3	26.7	19.5	19.5	54.3	26.1	26.1	37.9	17.7	18.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.4	44.1	46.3	26.7	19.5	19.5	54.3	26.1	26.1	37.9	17.7	18.4
LOS by Move:	D	D	D	C	B	B	D	C	C	D	B	B
HCM2k95thQ:	6	52	98	251	40	40	28	200	200	125	223	229

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #22 Morada Ln & SR99 W Frontage Rd

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        2  0  1  0  1    2  0  0  1  0    1  0  2  1  0    1  0  2  0  1
Lane Group:    L    T     R     L   RT     RT    L   RT     RT    L    T     R
#LnsInGrps:     2    1     1     2    1     1     1    3     3     1    2     1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:          8                8                8                8
% Hev Veh:            2                2                2                2
Grade:               0%               0%               0%               0%
Parking/Hr:          No               No               No               No
Bus Stp/Hr:           0                0                0                0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:          0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:           0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Hev Veh Adj: 0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
Grade Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Parking Adj: xxxx xxxx  1.00  xxxx 1.00  1.00  xxxx 1.00  1.00  xxxx xxxx  1.00
Bus Stp Adj: xxxx xxxx  1.00  xxxx 1.00  1.00  xxxx 1.00  1.00  xxxx xxxx  1.00
Area Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
RT Adj:      xxxx xxxx  0.85  xxxx 0.96  0.96  xxxx 1.00  1.00  xxxx xxxx  0.85
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.93 0.98  0.83  0.93 0.94  0.94  0.93 0.98  0.98  0.93 0.98  0.83
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 0.97 1.00  1.00  0.97 1.00  1.00  1.00 0.91  0.91  1.00 0.95  1.00
Fnl Sat Adj: 0.90 0.98  0.83  0.90 0.94  0.94  0.93 0.89  0.89  0.93 0.93  0.83
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
```


Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #22 Morada Ln & SR99 W Frontage Rd

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Green/Cycle: 0.01 0.08  0.08  0.32 0.38  0.38  0.02 0.32  0.32  0.16 0.46  0.46
ArrivalType:         4                4                4                4
ProgFactor:  1.00 0.98  0.98  0.89 0.80  0.80  1.00 0.88  0.88  0.95 0.77  0.78
Q1:           0.0  0.7   1.3   4.5  0.7   0.7   0.5  3.8   3.8   2.3  4.2   4.3
UpstreamVC:  0.00 0.00  0.00  0.00 0.00  0.00  0.49 0.49  0.49  0.23 0.23  0.23
UpstreamAdj: 0.00 0.00  0.00  0.00 0.00  0.00  0.86 0.86  0.86  0.98 0.98  0.98
EarlyArrAdj: 1.00 1.00  1.00  1.00 1.00  1.00  0.10 0.46  0.46  0.34 0.66  0.60
Q2:           0.1  0.3   0.6   0.7  0.1   0.1   0.1  0.2   0.2   0.2  0.4   0.4
HCM2KQueue:   0.1  1.0   1.9   5.1  0.8   0.8   0.5  4.0   4.0   2.5  4.5   4.7
------------|---------------||---------------||---------------||---------------|
70th%Factor: 1.20 1.20  1.20  1.19 1.20  1.20  1.20 1.19  1.19  1.19 1.19  1.19
HCM2k70thQ:   0.1  1.2   2.3   6.1  0.9   0.9   0.6  4.8   4.8   3.0  5.4   5.5
------------|---------------||---------------||---------------||---------------|
85th%Factor: 1.60 1.59  1.58  1.55 1.59  1.59  1.59 1.56  1.56  1.58 1.56  1.56
HCM2k85thQ:   0.2  1.6   3.0   8.0  1.2   1.2   0.9  6.3   6.3   3.9  7.1   7.3
------------|---------------||---------------||---------------||---------------|
90th%Factor: 1.80 1.78  1.76  1.71 1.79  1.79  1.79 1.73  1.73  1.75 1.72  1.72
HCM2k90thQ:   0.2  1.8   3.4   8.8  1.4   1.4   1.0  7.0   7.0   4.3  7.8   8.0
------------|---------------||---------------||---------------||---------------|
95th%Factor: 2.10 2.07  2.04  1.95 2.08  2.08  2.08 1.98  1.98  2.02 1.97  1.96
HCM2k95thQ:   0.3  2.1   3.9  10.0  1.6   1.6   1.1  8.0   8.0   5.0  8.9   9.2
------------|---------------||---------------||---------------||---------------|
98th%Factor: 2.69 2.63  2.56  2.37 2.64  2.64  2.66 2.43  2.43  2.53 2.41  2.40
HCM2k98thQ:   0.3  2.6   4.9  12.2  2.0   2.0   1.4  9.8   9.8   6.3 10.9  11.2
```

Cumul No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 West Ln & West Ln Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.770
Loss Time (sec):	12	Average Delay (sec/veh):	24.4
Optimal Cycle:	71	Level Of Service:	C

Street Name:	West Lane						West Lane Frontage Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3	1 0	1 0	3	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:	AM Peak Hour											
Base Vol:	216	1133	53	17	1852	29	39	31	202	77	21	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	216	1133	53	17	1852	29	39	31	202	77	21	6
Added Vol:	0	98	0	0	242	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	216	1231	53	17	2094	29	39	31	202	77	21	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	235	1338	58	18	2276	32	42	34	220	84	23	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	235	1338	58	18	2276	32	42	34	220	84	23	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	235	1338	58	18	2276	32	42	34	220	84	23	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.89	0.89	0.93	0.85	0.85	0.93	0.95	0.95
Lanes:	1.00	3.83	0.17	1.00	3.95	0.05	1.00	0.13	0.87	1.00	0.78	0.22
Final Sat.:	1769	6459	278	1769	6672	92	1769	216	1404	1769	1400	400
Capacity Analysis Module:												
Vol/Sat:	0.13	0.21	0.21	0.01	0.34	0.34	0.02	0.16	0.16	0.05	0.02	0.02
Crit Moves:	****				****			****		****		
Green/Cycle:	0.17	0.59	0.59	0.03	0.44	0.44	0.16	0.20	0.20	0.06	0.11	0.11
Volume/Cap:	0.77	0.35	0.35	0.35	0.77	0.77	0.15	0.77	0.77	0.77	0.15	0.15
Delay/Veh:	50.8	10.9	10.9	51.7	24.8	24.8	36.6	48.2	48.2	74.1	40.9	40.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.8	10.9	10.9	51.7	24.8	24.8	36.6	48.2	48.2	74.1	40.9	40.9
LOS by Move:	D	B	B	D	C	C	D	D	D	E	D	D
HCM2k95thQ:	337	179	179	51	706	706	59	424	424	212	46	46

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	3	1 0		1 0	3	1 0		1 0	0	1 0		1 0	0	1 0	
Lane Group:	L	RT		RT	L	RT		RT	L	RT		RT	L	RT		RT
#LnsInGrps:	1	4		4	1	4		4	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.99	0.99		xxxx	1.00	1.00		xxxx	0.87	0.87		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.97	0.97		0.93	0.98	0.98		0.93	0.85	0.85		0.93	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	0.91		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.89		0.93	0.89	0.89		0.93	0.85	0.85		0.93	0.95	0.95	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.17	0.59	0.59	0.03	0.44	0.44	0.16	0.20	0.20	0.06	0.11	0.11
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.58	0.58	0.99	0.89	0.89	0.95	0.98	0.98	0.99	0.97	0.97
Q1:	6.1	3.2	3.2	0.5	13.2	13.2	1.0	6.5	6.5	2.3	0.7	0.7
UpstreamVC:	0.43	0.43	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.91	0.91	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.33	0.70	0.70	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	1.0	0.4	0.4	0.5	3.0	3.0	0.2	2.6	2.6	2.0	0.2	0.2
HCM2KQueue:	7.1	3.6	3.6	1.0	16.2	16.2	1.1	9.1	9.1	4.3	0.9	0.9
70th%Factor:	1.18	1.19	1.19	1.20	1.17	1.17	1.20	1.18	1.18	1.19	1.20	1.20
HCM2k70thQ:	8.4	4.3	4.3	1.2	18.9	18.9	1.4	10.7	10.7	5.1	1.1	1.1
85th%Factor:	1.54	1.57	1.57	1.59	1.47	1.47	1.59	1.52	1.52	1.56	1.59	1.59
HCM2k85thQ:	10.9	5.6	5.6	1.6	23.9	23.9	1.8	13.8	13.8	6.7	1.4	1.4
90th%Factor:	1.68	1.73	1.73	1.78	1.58	1.58	1.78	1.65	1.65	1.72	1.78	1.78
HCM2k90thQ:	11.9	6.2	6.2	1.8	25.6	25.6	2.0	15.1	15.1	7.4	1.6	1.6
95th%Factor:	1.90	1.99	1.99	2.07	1.74	1.74	2.06	1.86	1.86	1.97	2.07	2.07
HCM2k95thQ:	13.5	7.2	7.2	2.0	28.2	28.2	2.4	16.9	16.9	8.5	1.8	1.8
98th%Factor:	2.28	2.46	2.46	2.63	1.99	1.99	2.62	2.20	2.20	2.42	2.63	2.63
HCM2k98thQ:	16.2	8.9	8.9	2.6	32.2	32.2	3.0	20.0	20.0	10.4	2.4	2.4

Cumul No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 West Lane & Knickerbocker Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.733
Loss Time (sec):	12	Average Delay (sec/veh):	23.0
Optimal Cycle:	64	Level Of Service:	C

Street Name:	West Lane						Knickerbocker Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3	1 0	1 0	3	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:	AM Peak Hour											
Base Vol:	129	1250	35	85	2044	134	159	76	106	70	80	45
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	129	1250	35	85	2044	134	159	76	106	70	80	45
Added Vol:	0	98	0	0	242	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	129	1348	35	85	2286	134	159	76	106	70	80	45
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	140	1465	38	92	2485	146	173	83	115	76	87	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	140	1465	38	92	2485	146	173	83	115	76	87	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	140	1465	38	92	2485	146	173	83	115	76	87	49
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.88	0.88	0.93	0.89	0.89	0.93	0.93	0.93
Lanes:	1.00	3.90	0.10	1.00	3.78	0.22	1.00	0.42	0.58	1.00	0.64	0.36
Final Sat.:	1769	6580	171	1769	6351	372	1769	710	990	1769	1127	634
Capacity Analysis Module:												
Vol/Sat:	0.08	0.22	0.22	0.05	0.39	0.39	0.10	0.12	0.12	0.04	0.08	0.08
Crit Moves:	****				****		****				****	
Green/Cycle:	0.11	0.52	0.52	0.12	0.53	0.53	0.13	0.17	0.17	0.06	0.11	0.11
Volume/Cap:	0.73	0.43	0.43	0.43	0.73	0.73	0.73	0.67	0.67	0.67	0.73	0.73
Delay/Veh:	56.8	14.9	14.9	42.0	18.7	18.7	52.9	44.4	44.4	60.0	57.4	57.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.8	14.9	14.9	42.0	18.7	18.7	52.9	44.4	44.4	60.0	57.4	57.4
LOS by Move:	E	B	B	D	B	B	D	D	D	E	E	E
HCM2k95thQ:	207	261	261	123	589	589	320	323	323	178	275	275

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	3	1	0	1	0	3	1	0	1	0	0	1	0	1	0
Lane Group:	L	RT		RT	L	RT		RT	L	RT		RT	L	RT		RT
#LnsInGrps:	1	4		4	1	4		4	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx		xxxx	1	xxxx		xxxx	1	xxxx		xxxx	1	xxxx		xxxx
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Hev Veh Adj:	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98
Grade Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Parking Adj:	xxxx	1.00		1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	xxxx	1.00		1.00
Bus Stp Adj:	xxxx	1.00		1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	xxxx	1.00		1.00
Area Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
RT Adj:	xxxx	1.00		1.00	xxxx	0.99		0.99	xxxx	0.91		0.91	xxxx	0.95		0.95
LT Adj:	0.95	xxxx		xxxxx	0.95	xxxx		xxxxx	0.95	xxxx		xxxxx	0.95	xxxx		xxxxx
PedBike Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
HCM Sat Adj:	0.93	0.98		0.98	0.93	0.97		0.97	0.93	0.89		0.89	0.93	0.93		0.93
Usr Sat Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Sat Adj:	1.00	0.91		0.91	1.00	0.91		0.91	1.00	1.00		1.00	1.00	1.00		1.00
Fnl Sat Adj:	0.93	0.89		0.89	0.93	0.88		0.88	0.93	0.89		0.89	0.93	0.93		0.93
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.11	0.52		0.52	0.12	0.53		0.53	0.13	0.17		0.17	0.06	0.11		0.11
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.71		0.71	0.97	0.79		0.79	0.98	0.97		0.97	0.99	0.99		0.99
Q1:		3.7		5.0	2.3	12.1		12.1	4.5	5.0		5.0	2.0	3.6		3.6
UpstreamVC:	0.70	0.70		0.70	0.77	0.77		0.77	0.00	0.00		0.00	0.00	0.00		0.00
UpstreamAdj:	0.65	0.65		0.65	0.55	0.55		0.55	0.00	0.00		0.00	0.00	0.00		0.00
EarlyArrAdj:	0.18	0.47		0.47	0.16	0.40		0.40	1.00	1.00		1.00	1.00	1.00		1.00
Q2:		0.5		0.4	0.1	1.1		1.1	2.2	1.8		1.8	1.5	2.1		2.1
HCM2KQueue:		4.2		5.4	2.4	13.2		13.2	6.7	6.8		6.8	3.6	5.7		5.7
70th%Factor:	1.19	1.19		1.19	1.19	1.17		1.17	1.18	1.18		1.18	1.19	1.19		1.19
HCM2k70thQ:		5.0		6.4	2.9	15.4		15.4	7.9	8.0		8.0	4.3	6.7		6.7
85th%Factor:	1.56	1.55		1.55	1.58	1.49		1.49	1.54	1.54		1.54	1.57	1.55		1.55
HCM2k85thQ:		6.5		8.3	3.8	19.7		19.7	10.3	10.4		10.4	5.6	8.8		8.8
90th%Factor:	1.72	1.71		1.71	1.75	1.61		1.61	1.69	1.69		1.69	1.73	1.70		1.70
HCM2k90thQ:		7.2		9.1	4.3	21.2		21.2	11.3	11.4		11.4	6.2	9.7		9.7
95th%Factor:	1.98	1.95		1.95	2.02	1.79		1.79	1.91	1.91		1.91	1.99	1.94		1.94
HCM2k95thQ:		8.3		10.4	4.9	23.6		23.6	12.8	12.9		12.9	7.1	11.0		11.0
98th%Factor:	2.42	2.36		2.36	2.53	2.06		2.06	2.30	2.29		2.29	2.46	2.35		2.35
HCM2k98thQ:		10.1		12.7	6.1	27.2		27.2	15.4	15.5		15.5	8.8	13.3		13.3

Cumul No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.807
Loss Time (sec): 12 Average Delay (sec/veh): 34.6
Optimal Cycle: 79 Level Of Service: C

Street Name:	West Lane						Hammer Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	4	0	1	2	0	4	0	1
Volume Module:	AM Peak Hour											
Base Vol:	111	889	267	692	1380	121	152	789	91	535	813	378
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	111	889	267	692	1380	121	152	789	91	535	813	378
Added Vol:	0	98	0	0	242	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	111	987	267	692	1622	121	152	789	91	535	813	378
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	121	1073	290	752	1763	132	165	858	99	582	884	411
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	121	1073	290	752	1763	132	165	858	99	582	884	411
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	121	1073	290	752	1763	132	165	858	99	582	884	411
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.04	0.16	0.18	0.22	0.26	0.08	0.05	0.13	0.06	0.17	0.13	0.26
Crit Moves:			****	****			****					****
Green/Cycle:	0.06	0.23	0.23	0.27	0.44	0.44	0.06	0.16	0.16	0.22	0.32	0.32
Volume/Cap:	0.59	0.70	0.81	0.81	0.59	0.19	0.81	0.78	0.38	0.78	0.41	0.81
Delay/Veh:	50.4	36.9	49.2	39.2	21.6	17.3	67.0	43.6	38.3	41.9	26.6	40.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.4	36.9	49.2	39.2	21.6	17.3	67.0	43.6	38.3	41.9	26.6	40.3
LOS by Move:	D	D	D	D	C	B	E	D	D	D	C	D
HCM2k95thQ:	144	431	483	494	423	91	224	411	148	393	238	502

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	2	0	4	0	1		2	0	4	0	1		2	0	4	0	1		2	0	4	0	1	
Lane Group:	L		T		R		L		T		R		L		T		R		L		T		R	
#LnsInGrps:	2		4		1		2		4		1		2		4		1		2		4		1	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:	8						8						8						8					
% Hev Veh:	2						2						2						2					
Grade:	0%						0%						0%						0%					
Parking/Hr:	No						No						No						No					
Bus Stp/Hr:	0						0						0						0					
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:	0						0						0						0					
ExclusiveRT:	Include						Include						Include						Include					
% RT Prtct:	0						0						0						0					
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx		
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
Hev Veh Adj:	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98
Grade Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
Parking Adj:	xxxx	xxxx		1.00		xxxx	xxxx	1.00		xxxx		xxxx	xxxx	1.00		xxxx		xxxx	xxxx	1.00		xxxx		xxxx
Bus Stp Adj:	xxxx	xxxx		1.00		xxxx	xxxx	1.00		xxxx		xxxx	xxxx	1.00		xxxx		xxxx	xxxx	1.00		xxxx		xxxx
Area Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
RT Adj:	xxxx	xxxx		0.85		xxxx	xxxx	0.85		xxxx		xxxx	xxxx	0.85		xxxx		xxxx	xxxx	0.85		xxxx		xxxx
LT Adj:	0.95	xxxx		xxxxx		0.95	xxxx	xxxxx		0.95		xxxx	xxxxx			0.95		xxxx	xxxxx			0.95		xxxx
PedBike Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
HCM Sat Adj:	0.93	0.98		0.83		0.93	0.98	0.83		0.93		0.98	0.93	0.98		0.83		0.93	0.98	0.83		0.93		0.83
Usr Sat Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
MLF Sat Adj:	0.97	0.91		1.00		0.97	0.91	1.00		0.97		0.91	0.97	0.91		1.00		0.97	0.91	1.00		0.97		0.91
Fnl Sat Adj:	0.90	0.89		0.83		0.90	0.89	0.83		0.90		0.89	0.90	0.89		0.83		0.90	0.89	0.83		0.90		0.89
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.06	0.23	0.23	0.27	0.44	0.44	0.06	0.16	0.16	0.22	0.32	0.32
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.96	0.98	0.97	0.84	0.76	1.00	0.98	0.96	0.97	0.89	0.95
Q1:	1.7	7.2	7.4	9.7	8.5	1.7	2.3	6.2	2.3	7.6	4.7	10.0
UpstreamVC:	0.00	0.00	0.00	0.73	0.73	0.73	0.00	0.00	0.00	0.77	0.77	0.77
UpstreamAdj:	0.00	0.00	0.00	0.60	0.60	0.60	0.00	0.00	0.00	0.55	0.55	0.55
EarlyArrAdj:	1.00	1.00	1.00	0.29	0.39	0.36	1.00	1.00	1.00	0.23	0.30	0.27
Q2:	1.2	2.0	3.1	1.1	0.6	0.1	2.2	2.6	0.6	0.7	0.2	1.0
HCM2KQueue:	2.9	9.3	10.5	10.8	9.1	1.8	4.6	8.8	2.9	8.4	4.9	11.0
70th%Factor:	1.19	1.18	1.18	1.18	1.18	1.20	1.19	1.18	1.19	1.18	1.19	1.18
HCM2k70thQ:	3.4	10.9	12.4	12.7	10.7	2.1	5.4	10.4	3.5	9.9	5.8	12.9
85th%Factor:	1.57	1.52	1.51	1.51	1.52	1.58	1.56	1.52	1.57	1.53	1.56	1.51
HCM2k85thQ:	4.5	14.1	15.9	16.3	13.8	2.8	7.1	13.4	4.6	12.8	7.6	16.6
90th%Factor:	1.75	1.65	1.64	1.63	1.65	1.77	1.72	1.66	1.75	1.66	1.71	1.63
HCM2k90thQ:	5.0	15.3	17.2	17.6	15.0	3.2	7.8	14.6	5.1	13.9	8.3	18.0
95th%Factor:	2.01	1.86	1.83	1.83	1.86	2.04	1.97	1.87	2.01	1.88	1.96	1.83
HCM2k95thQ:	5.7	17.2	19.3	19.8	16.9	3.6	9.0	16.5	5.9	15.7	9.5	20.1
98th%Factor:	2.50	2.19	2.15	2.14	2.20	2.57	2.40	2.21	2.50	2.23	2.39	2.13
HCM2k98thQ:	7.2	20.3	22.6	23.1	20.0	4.6	11.0	19.4	7.4	18.6	11.6	23.4

Cumul No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.770
Loss Time (sec): 12 Average Delay (sec/veh): 33.8
Optimal Cycle: 71 Level Of Service: C

Street Name:	Hammer Lane						Holman Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	3 0	1	2 0	3 1	0	2 0	3 1	0
Volume Module:	AM Peak Hour											
Base Vol:	331	313	83	183	644	307	329	1511	308	184	1510	83
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	331	313	83	183	644	307	329	1511	308	184	1510	83
Added Vol:	0	17	0	0	43	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	331	330	83	183	687	307	329	1511	308	184	1510	83
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	360	359	90	199	747	334	358	1642	335	200	1641	90
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	360	359	90	199	747	334	358	1642	335	200	1641	90
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	360	359	90	199	747	334	358	1642	335	200	1641	90
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.87	0.87	0.90	0.89	0.83	0.90	0.87	0.87	0.90	0.88	0.88
Lanes:	2.00	2.40	0.60	2.00	3.00	1.00	2.00	3.32	0.68	2.00	3.79	0.21
Final Sat.:	3432	3940	991	3432	5083	1583	3432	5489	1119	3432	6373	350
Capacity Analysis Module:												
Vol/Sat:	0.10	0.09	0.09	0.06	0.15	0.21	0.10	0.30	0.30	0.06	0.26	0.26
Crit Moves:	****					****	****				****	
Green/Cycle:	0.14	0.25	0.25	0.16	0.27	0.27	0.14	0.39	0.39	0.08	0.33	0.33
Volume/Cap:	0.77	0.36	0.36	0.36	0.54	0.77	0.77	0.76	0.76	0.76	0.77	0.77
Delay/Veh:	49.3	31.1	31.1	37.9	31.3	41.6	49.4	27.6	27.6	57.5	31.5	31.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.3	31.1	31.1	37.9	31.3	41.6	49.4	27.6	27.6	57.5	31.5	31.5
LOS by Move:	D	C	C	D	C	D	D	C	C	E	C	C
HCM2k95thQ:	350	199	199	131	311	434	262	579	579	239	623	623

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	1	0	2	0 3	0	1	2	0 3	1	0	2	0 3	1	0
Lane Group:	L	RT		RT	L	T		R	L	RT		RT	L	RT		RT
#LnsInGrps:	2	3		3	2	3		1	2	4		4	2	4		4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.97	0.97		xxxx	xxxx	0.85		xxxx	0.98	0.98		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.95	0.95		0.93	0.98	0.83		0.93	0.96	0.96		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	0.91		0.97	0.91	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.87	0.87		0.90	0.89	0.83		0.90	0.87	0.87		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.14	0.25	0.25		0.16	0.27	0.27		0.14	0.39	0.39		0.08	0.33	0.33	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.92	0.92		0.96	0.93	0.96		0.99	0.91	0.91		0.99	0.94	0.94	
Q1:	4.9	3.5	3.5		2.4	6.0	8.2		4.9	11.9	11.9		2.8	11.1	11.1	
UpstreamVC:	0.00	0.00	0.00		0.49	0.49	0.49		0.78	0.78	0.78		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.86	0.86	0.86		0.54	0.54	0.54		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		0.30	0.42	0.38		0.17	0.32	0.32		1.00	1.00	1.00	
Q2:	2.5	0.6	0.6		0.2	0.5	1.2		0.5	1.0	1.0		2.1	2.9	2.9	
HCM2KQueue:	7.4	4.0	4.0		2.6	6.5	9.4		5.4	12.9	12.9		4.9	14.0	14.0	
70th%Factor:	1.18	1.19	1.19		1.19	1.19	1.18		1.19	1.17	1.17		1.19	1.17	1.17	
HCM2k70thQ:	8.7	4.8	4.8		3.1	7.7	11.0		6.4	15.1	15.1		5.8	16.4	16.4	
85th%Factor:	1.53	1.56	1.56		1.58	1.54	1.52		1.55	1.50	1.50		1.55	1.49	1.49	
HCM2k85thQ:	11.3	6.3	6.3		4.1	10.0	14.2		8.4	19.3	19.3		7.6	20.9	20.9	
90th%Factor:	1.68	1.73	1.73		1.75	1.69	1.65		1.71	1.61	1.61		1.71	1.60	1.60	
HCM2k90thQ:	12.4	7.0	7.0		4.6	10.9	15.4		9.2	20.8	20.8		8.4	22.4	22.4	
95th%Factor:	1.90	1.98	1.98		2.02	1.92	1.86		1.94	1.79	1.79		1.96	1.78	1.78	
HCM2k95thQ:	14.0	8.0	8.0		5.2	12.4	17.4		10.5	23.2	23.2		9.6	24.9	24.9	
98th%Factor:	2.27	2.43	2.43		2.52	2.31	2.19		2.36	2.07	2.07		2.39	2.04	2.04	
HCM2k98thQ:	16.7	9.8	9.8		6.5	15.0	20.5		12.7	26.8	26.8		11.7	28.6	28.6	

Cumul No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #46 Lt Col Mark Taylor St & Ham Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.367
Loss Time (sec):	12	Average Delay (sec/veh):	28.3
Optimal Cycle:	34	Level Of Service:	C

Street Name:	Ham Lane					Lt. Col. Mark Taylor Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0	1	1	0	1	0	1	1	0
Volume Module:AM Peak Hour												
Base Vol:	40	20	19	10	39	9	11	170	39	40	162	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	40	20	19	10	39	9	11	170	39	40	162	5
Added Vol:	5	78	0	143	191	61	25	60	13	0	23	58
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	45	98	19	153	230	70	36	230	52	40	185	63
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	49	107	21	166	250	76	39	250	57	43	201	68
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	49	107	21	166	250	76	39	250	57	43	201	68
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	49	107	21	166	250	76	39	250	57	43	201	68
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.96	0.96	0.93	0.95	0.95	0.93	0.90	0.90	0.93	0.90	0.90
Lanes:	1.00	0.84	0.16	1.00	0.77	0.23	1.00	1.63	0.37	1.00	1.49	0.51
Final Sat.:	1769	1522	295	1769	1378	419	1769	2805	634	1769	2539	865
Capacity Analysis Module:												
Vol/Sat:	0.03	0.07	0.07	0.09	0.18	0.18	0.02	0.09	0.09	0.02	0.08	0.08
Crit Moves:	****				****			****			****	
Green/Cycle:	0.08	0.24	0.24	0.33	0.49	0.49	0.07	0.24	0.24	0.07	0.24	0.24
Volume/Cap:	0.37	0.29	0.29	0.29	0.37	0.37	0.33	0.37	0.37	0.37	0.33	0.33
Delay/Veh:	45.7	31.1	31.1	25.3	15.9	15.9	46.0	31.7	31.7	46.5	31.4	31.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.7	31.1	31.1	25.3	15.9	15.9	46.0	31.7	31.7	46.5	31.4	31.4
LOS by Move:	D	C	C	C	B	B	D	C	C	D	C	C
HCM2k95thQ:	93	152	152	169	228	228	58	184	184	65	160	160

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #46 Lt Col Mark Taylor St & Ham Ln

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	1	0	0	1	0		1	0	0	1	0		1	0	1	1	0		1	0	1	1	0	
Lane Group:	L		RT		RT		L		RT		RT		L		RT		RT		L		RT		RT	
#LnsInGrps:	1		1		1		1		1		1		1		2		2		1		2		2	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:			8						8						8						8			
% Hev Veh:			2						2						2						2			
Grade:			0%						0%						0%						0%			
Parking/Hr:			No						No						No						No			
Bus Stp/Hr:			0						0						0						0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0						0						0						0			
ExclusiveRT:			Include						Include						Include						Include			
% RT Prtct:			0						0						0						0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1		xxxx		xxxx		1		xxxx		xxxx		1		xxxx		xxxx		1		xxxx		xxxx	
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Hev Veh Adj:	0.98		0.98		0.98		0.98		0.98		0.98		0.98		0.98		0.98		0.98		0.98		0.98	
Grade Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Parking Adj:	xxxx		1.00		1.00		xxxx		1.00		1.00		xxxx		1.00		1.00		xxxx		1.00		1.00	
Bus Stp Adj:	xxxx		1.00		1.00		xxxx		1.00		1.00		xxxx		1.00		1.00		xxxx		1.00		1.00	
Area Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
RT Adj:	xxxx		0.98		0.98		xxxx		0.97		0.97		xxxx		0.97		0.97		xxxx		0.96		0.96	
LT Adj:	0.95		xxxx		xxxxx		0.95		xxxx		xxxxx		0.95		xxxx		xxxxx		0.95		xxxx		xxxxx	
PedBike Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
HCM Sat Adj:	0.93		0.96		0.96		0.93		0.95		0.95		0.93		0.95		0.95		0.93		0.94		0.94	
Usr Sat Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
MLF Sat Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		0.95		0.95		1.00		0.95		0.95	
Fnl Sat Adj:	0.93		0.96		0.96		0.93		0.95		0.95		0.93		0.90		0.90		0.93		0.90		0.90	
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	

Cumul No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #46 Lt Col Mark Taylor St & Ham Ln

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.08	0.24	0.24	0.33	0.49	0.49	0.07	0.24	0.24	0.07	0.24	0.24
ArrivalType:	4			4			4			4		
ProgFactor:	0.98	0.92	0.92	0.87	0.73	0.73	0.98	0.92	0.92	0.98	0.92	0.92
Q1:	1.3	2.6	2.6	3.0	4.1	4.1	1.0	3.4	3.4	1.1	3.0	3.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.03	0.03	0.03	0.03
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.21	0.45	0.45	0.20	0.45	0.45
Q2:	0.6	0.4	0.4	0.4	0.6	0.6	0.1	0.3	0.3	0.1	0.2	0.2
HCM2KQueue:	1.8	3.0	3.0	3.4	4.6	4.6	1.1	3.7	3.7	1.3	3.2	3.2
70th%Factor:	1.20	1.19	1.19	1.19	1.19	1.19	1.20	1.19	1.19	1.20	1.19	1.19
HCM2k70thQ:	2.2	3.6	3.6	4.0	5.5	5.5	1.3	4.4	4.4	1.5	3.8	3.8
85th%Factor:	1.58	1.57	1.57	1.57	1.56	1.56	1.59	1.57	1.57	1.59	1.57	1.57
HCM2k85thQ:	2.9	4.8	4.8	5.3	7.2	7.2	1.8	5.8	5.8	2.0	5.0	5.0
90th%Factor:	1.77	1.74	1.74	1.74	1.72	1.72	1.78	1.73	1.73	1.78	1.74	1.74
HCM2k90thQ:	3.2	5.3	5.3	5.9	8.0	8.0	2.0	6.4	6.4	2.2	5.6	5.6
95th%Factor:	2.04	2.01	2.01	2.00	1.96	1.96	2.06	1.99	1.99	2.06	2.00	2.00
HCM2k95thQ:	3.7	6.1	6.1	6.8	9.1	9.1	2.3	7.4	7.4	2.6	6.4	6.4
98th%Factor:	2.57	2.49	2.49	2.47	2.40	2.40	2.62	2.45	2.45	2.61	2.48	2.48
HCM2k98thQ:	4.7	7.6	7.6	8.4	11.1	11.1	2.9	9.1	9.1	3.3	7.9	7.9

Cumul No Project AM Pk Hr

Future Queue Length Report (feet)

Node	Intersection	Northbound L	T	R	Southbound L	T	R	Eastbound L	T	R	Westbound L	T	R
#3	[HCM2k95thQ]:	225	398	234	698	393	253	214	464	107	204	642	642
#4	[HCM2k95thQ]:	396	259	287	364	478	200	123	492	214	521	413	413
#5	[HCM2k95thQ]:	128	309	459	505	362	109	188	619	106	470	617	617
#6	[HCM2k95thQ]:	73	495	660	1211	263	21	116	618	38	1053	250	417
#7	[HCM2k95thQ]:	182	182	182	149	149	149	75	213	213	125	146	146
#8	[HCM2k95thQ]:	480	195	104	116	662	736	464	738	902	234	637	637
#9	[HCM2k95thQ]:	226	541	541	642	189	189	165	549	110	231	560	321
#10	[HCM2k95thQ]:	196	0	177	0	0	6	0	179	179	90	140	140
#11	[HCM2k95thQ]:	290	60	36	59	154	353	255	382	428	64	403	403
#12	[HCM2k95thQ]:	2	203	203	472	7	7	9	540	1	118	507	507
#13	[HCM2k95thQ]:	36	11	11	17	22	22	9	11	1	24	12	12
#16	[HCM2k95thQ]:	173	203	203	60	393	393	178	107	236	290	145	117
#17	[HCM2k95thQ]:	74	125	308	607	170	49	106	887	48	614	669	669
#18	[HCM2k95thQ]:	305	236	147	90	583	98	92	177	422	316	149	45
#19	[HCM2k95thQ]:	180	203	103	228	303	125	212	266	167	219	228	116
#22	[HCM2k95thQ]:	6	52	98	251	40	40	28	200	200	125	223	229
#24	[HCM2k95thQ]:	337	179	179	51	706	706	59	424	424	212	46	46
#25	[HCM2k95thQ]:	207	261	261	123	589	589	320	323	323	178	275	275
#26	[HCM2k95thQ]:	144	431	483	494	423	91	224	411	148	393	238	502
#27	[HCM2k95thQ]:	350	199	199	131	311	434	262	579	579	239	623	623
#46	[HCM2k95thQ]:	93	152	152	169	228	228	58	184	184	65	160	160

Cumul No Project AM Pk Hr With Recommended Improvements

Scenario Report

Scenario:	Cumul No Proj AM
Command:	Cumul No Proj AM
Volume:	Cumul GP Alt AM
Geometry:	Cumul No Proj
Impact Fee:	Default Impact Fee
Trip Generation:	AM Pk Hr
Trip Distribution:	Cumul With Bridge AM
Paths:	Cumul No Proj
Routes:	Default Route
Configuration:	Default Configuration

Cumul No Project AM Pk Hr With Recommended Improvements

Trip Generation Report

Forecast for AM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	0.00	ElemSchStudent	0.25	0.20	0	0	0	0.0
1	Village West	0.00	Tra Vigne SFDU	0.18	0.53	0	0	0	0.0
1	Village West	1646.00	GP Alt SFDU	0.18	0.53	296	872	1168	58.4
1	Village West	130.68	GP Alt Com KSF	0.60	0.36	78	47	125	6.2
1	Village West	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
1	Village West	232.00	GP Alt MFDU	0.10	0.41	23	95	118	5.9
1	Village West	0.00	Tra V Internal	-6.00	-6.00	0	0	0	0.0
1	Village West	1.00	GP Alt Interna	-7.00	-7.00	-7	-7	-14	-0.7
1	Village West	1.00	GP Alt Pass-By	-11.00	-7.00	-11	-7	-18	-0.9
	Zone 1 Subtotal					379	1000	1379	68.9
2	Village East	0.00	Tra Vigne SFDU	0.18	0.53	0	0	0	0.0
2	Village East	774.00	GP Alt SFDU	0.18	0.53	139	410	549	27.4
2	Village East	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
	Zone 2 Subtotal					139	410	549	27.4
4	Industrial	406.94	Indust KSF	0.15	0.03	61	12	73	3.6
	Zone 4 Subtotal					61	12	73	3.6
TOTAL						579	1422	2001	100.0

Cumul No Project AM Pk Hr With Recommended Improvements

Trip Distribution Report

Percent Of Trips Cumul With Bridge AM

Zone	To Gates 1	2	3	4	5	6	7	8	9	10	11
1	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	1.0
2	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	1.0
4	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	1.0

Zone	To Gates 12	13	14	15	16	19	20	21	22	23	24
1	5.0	12.0	1.0	2.0	3.0	17.0	3.0	5.0	3.0	12.0	4.0
2	5.0	12.0	1.0	2.0	3.0	17.0	3.0	5.0	3.0	12.0	4.0
4	5.0	12.0	1.0	2.0	3.0	17.0	3.0	5.0	3.0	12.0	4.0

Zone	To Gates 25	26
1	2.0	2.0
2	2.0	2.0
4	2.0	2.0

Cumul No Project AM Pk Hr With Recommended Improvements

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	C	31.6	0.682	C	31.7	0.698	+ 0.132 D/V
# 5 Eight Mile & Lower Sacto Rd	C	33.2	0.771	C	34.2	0.815	+ 0.976 D/V
# 6 West Lane & Armstrong Road	C	31.8	0.730	C	32.0	0.730	+ 0.131 D/V
# 8 Eight Mile Rd & West Ln	D	36.0	0.825	D	38.6	0.873	+ 2.559 D/V
# 9 Eight Mile Road & Ham Lane	C	24.7	0.587	C	32.0	0.683	+ 7.230 D/V
# 17 Holman & Lt Col Mark Taylor	C	29.9	0.650	C	32.2	0.760	+ 2.332 D/V

Cumul No Project AM Pk Hr With Recommended Improvements

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]

Cumul No Project AM Pk Hr With Recommended Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

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Intersection #3 Eight Mile Rd & Thornton Rd

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Cycle (sec):	100	Critical Vol./Cap.(X):	0.698
Loss Time (sec):	12	Average Delay (sec/veh):	31.7
Optimal Cycle:	59	Level Of Service:	C

****

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	2 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	AM Peak Hour											
Base Vol:	123	347	111	444	595	208	242	1338	104	231	1392	227
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	123	347	111	444	595	208	242	1338	104	231	1392	227
Added Vol:	0	0	6	6	0	0	0	29	0	14	71	14
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	123	347	117	450	595	208	242	1367	104	245	1463	241
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	134	377	127	489	647	226	263	1486	113	266	1590	262
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	134	377	127	489	647	226	263	1486	113	266	1590	262
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	134	377	127	489	647	226	263	1486	113	266	1590	262
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	2.00	4.00	1.00	2.00	3.43	0.57
Final Sat.:	1769	3538	1583	3432	3538	1583	3432	6778	1583	3432	5697	938
Capacity Analysis Module:												
Vol/Sat:	0.08	0.11	0.08	0.14	0.18	0.14	0.08	0.22	0.07	0.08	0.28	0.28
Crit Moves:	****				****		****				****	
Green/Cycle:	0.11	0.16	0.16	0.21	0.26	0.26	0.11	0.38	0.38	0.13	0.40	0.40
Volume/Cap:	0.70	0.67	0.51	0.67	0.70	0.55	0.70	0.58	0.19	0.58	0.70	0.70
Delay/Veh:	53.8	42.9	40.2	38.7	35.7	33.3	48.6	25.2	21.1	42.6	25.8	25.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.8	42.9	40.2	38.7	35.7	33.3	48.6	25.2	21.1	42.6	25.8	25.8
LOS by Move:	D	D	D	D	D	C	D	C	C	D	C	C
HCM2k95thQ:	261	328	202	379	470	298	196	397	92	190	527	527

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Note: Queue reported is the distance per lane in feet.

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Cumul No Project AM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	2 0	1		2 0	2 0	1		2 0	4 0	1		2 0	3 1	0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	2	1		2	2	1		2	4	1		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.98	0.98	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.96	0.96	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project AM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.11	0.16	0.16		0.21	0.26	0.26		0.11	0.38	0.38		0.13	0.40	0.40	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.98	0.97		0.96	0.95	0.93		0.99	0.88	0.82		0.98	0.89	0.89	
Q1:	3.5	5.1	3.1		6.2	8.1	5.0		3.6	8.0	1.7		3.5	10.5	10.5	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.73	0.73	0.73		0.56	0.56	0.56	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.60	0.60	0.60		0.81	0.81	0.81	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.17	0.36	0.32		0.25	0.49	0.49	
Q2:	1.8	1.8	1.0		1.8	2.1	1.1		0.4	0.5	0.1		0.3	1.1	1.1	
HCM2KQueue:	5.4	6.9	4.1		8.0	10.2	6.2		3.9	8.5	1.8		3.8	11.6	11.6	
70th%Factor:	1.19	1.18	1.19		1.18	1.18	1.19		1.19	1.18	1.20		1.19	1.17	1.17	
HCM2k70thQ:	6.4	8.1	4.9		9.5	12.0	7.3		4.7	10.0	2.2		4.6	13.6	13.6	
85th%Factor:	1.55	1.54	1.56		1.53	1.51	1.54		1.56	1.53	1.58		1.56	1.50	1.50	
HCM2k85thQ:	8.3	10.6	6.4		12.3	15.5	9.6		6.2	12.9	2.9		6.0	17.5	17.5	
90th%Factor:	1.71	1.68	1.73		1.67	1.64	1.69		1.73	1.66	1.77		1.73	1.62	1.62	
HCM2k90thQ:	9.2	11.6	7.1		13.4	16.7	10.5		6.8	14.1	3.2		6.6	18.8	18.8	
95th%Factor:	1.95	1.91	1.98		1.88	1.84	1.93		1.98	1.87	2.04		1.98	1.81	1.81	
HCM2k95thQ:	10.5	13.1	8.1		15.2	18.8	11.9		7.8	15.9	3.7		7.6	21.1	21.1	
98th%Factor:	2.36	2.29	2.43		2.24	2.16	2.32		2.44	2.22	2.57		2.44	2.11	2.11	
HCM2k98thQ:	12.7	15.7	9.9		18.0	22.0	14.4		9.6	18.8	4.6		9.4	24.5	24.5	

Cumul No Project AM Pk Hr With Recommended Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.815
Loss Time (sec):	12	Average Delay (sec/veh):	34.2
Optimal Cycle:	81	Level Of Service:	C

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2 0 1	2	0	2 0 1	2	0	4 0 1	2	0	4 0 1
Volume Module:	AM Peak Hour											
Base Vol:	106	379	225	531	591	106	131	1347	87	441	1365	281
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	106	379	225	531	591	106	131	1347	87	441	1365	281
Added Vol:	0	0	17	12	0	0	0	58	0	43	142	28
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	106	379	242	543	591	106	131	1405	87	484	1507	309
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	115	412	263	590	642	115	142	1527	95	526	1638	336
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	115	412	263	590	642	115	142	1527	95	526	1638	336
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	115	412	263	590	642	115	142	1527	95	526	1638	336
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.12	0.17	0.17	0.18	0.07	0.04	0.23	0.06	0.15	0.24	0.21
Crit Moves:			****	****				****		****		
Green/Cycle:	0.06	0.20	0.20	0.21	0.35	0.35	0.07	0.28	0.28	0.19	0.40	0.40
Volume/Cap:	0.52	0.57	0.81	0.81	0.52	0.21	0.61	0.81	0.22	0.81	0.61	0.53
Delay/Veh:	47.4	37.0	52.6	44.7	26.2	22.9	49.9	36.6	28.1	46.8	24.4	24.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.4	37.0	52.6	44.7	26.2	22.9	49.9	36.6	28.1	46.8	24.4	24.0
LOS by Move:	D	D	D	D	C	C	D	D	C	D	C	C
HCM2k95thQ:	128	309	459	505	362	109	162	619	106	470	469	344

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2	0	2 0 1	2	0	2 0 1	2	0	4 0 1	2	0	4 0 1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	2	1	2	2	1	2	4	1	2	4	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Fnl Sat Adj:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul No Project AM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.06	0.20	0.20	0.21	0.35	0.35	0.07	0.28	0.28	0.19	0.40	0.40
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.96	0.98	0.98	0.89	0.84	0.99	0.97	0.89	0.98	0.87	0.86
Q1:	1.6	5.2	6.8	7.9	6.6	1.9	2.0	10.5	1.8	7.1	8.7	6.1
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.9	1.3	3.1	3.2	1.0	0.3	1.3	3.4	0.3	3.1	1.5	1.1
HCM2KQueue:	2.5	6.4	9.9	11.1	7.7	2.1	3.2	13.9	2.1	10.2	10.2	7.2
70th%Factor:	1.19	1.19	1.18	1.18	1.18	1.19	1.19	1.17	1.19	1.18	1.18	1.18
HCM2k70thQ:	3.0	7.6	11.7	13.0	9.0	2.6	3.9	16.3	2.5	12.0	12.0	8.6
85th%Factor:	1.58	1.54	1.52	1.51	1.53	1.58	1.57	1.49	1.58	1.51	1.51	1.54
HCM2k85thQ:	4.0	9.9	15.1	16.7	11.7	3.4	5.1	20.7	3.3	15.5	15.4	11.1
90th%Factor:	1.75	1.69	1.64	1.63	1.67	1.76	1.74	1.60	1.76	1.64	1.64	1.68
HCM2k90thQ:	4.4	10.9	16.3	18.1	12.8	3.8	5.6	22.3	3.7	16.8	16.7	12.2
95th%Factor:	2.02	1.92	1.85	1.82	1.89	2.03	2.00	1.78	2.03	1.84	1.84	1.90
HCM2k95thQ:	5.1	12.4	18.3	20.2	14.5	4.4	6.5	24.8	4.2	18.8	18.7	13.8
98th%Factor:	2.52	2.31	2.17	2.13	2.26	2.55	2.48	2.04	2.55	2.16	2.16	2.27
HCM2k98thQ:	6.4	14.9	21.5	23.6	17.3	5.5	8.0	28.5	5.3	22.0	22.0	16.5

Cumul No Project AM Pk Hr With Recommended Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.730
Loss Time (sec): 12 Average Delay (sec/veh): 32.0
Optimal Cycle: 64 Level Of Service: C

Street Name:	West Lane						Armstrong Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	2 0	2 0	1	1 0	2 0	1	2 0	2 0	1
Volume Module: AM Peak Hour												
Base Vol:	29	369	252	578	526	28	37	436	23	480	445	327
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	29	369	252	578	526	28	37	436	23	480	445	327
Added Vol:	0	85	0	0	35	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	29	454	252	578	561	28	37	436	23	480	445	327
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	32	493	274	628	610	30	40	474	25	522	484	355
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	32	493	274	628	610	30	40	474	25	522	484	355
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	32	493	274	628	610	30	40	474	25	522	484	355
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.90	0.93	0.83	0.93	0.93	0.83	0.90	0.93	0.83
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1769	3538	1583	3432	3538	1583	1769	3538	1583	3432	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.02	0.14	0.17	0.18	0.17	0.02	0.02	0.13	0.02	0.15	0.14	0.22
Crit Moves:			****	****				****		****		
Green/Cycle:	0.05	0.24	0.24	0.25	0.44	0.44	0.06	0.18	0.18	0.21	0.34	0.59
Volume/Cap:	0.39	0.59	0.73	0.73	0.39	0.04	0.41	0.73	0.09	0.73	0.41	0.38
Delay/Veh:	49.4	34.9	42.3	37.5	18.9	15.9	48.3	42.7	34.0	40.8	25.8	11.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.4	34.9	42.3	37.5	18.9	15.9	48.3	42.7	34.0	40.8	25.8	11.3
LOS by Move:	D	C	D	D	B	B	D	D	C	D	C	B
HCM2k95thQ:	73	351	422	472	262	21	87	404	33	421	265	183

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 2	0 1		2	0 2	0 1		1	0 2	0 1		2	0 2	0 1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	2	1		2	2	1		1	2	1		2	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		0.97	0.95	1.00		1.00	0.95	1.00		0.97	0.95	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.90	0.93	0.83		0.93	0.93	0.83		0.90	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project AM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.05	0.24	0.24		0.25	0.44	0.44		0.06	0.18	0.18		0.21	0.34	0.59	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.95	0.96		0.96	0.79	0.74		0.99	0.98	0.93		0.97	0.88	0.58	
Q1:	0.8	6.1	6.8		7.9	4.7	0.4		1.1	6.4	0.5		6.8	4.8	3.1	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.6	1.3	2.3		2.3	0.6	0.0		0.6	2.3	0.1		2.3	0.7	0.6	
HCM2KQueue:	1.4	7.4	9.1		10.3	5.4	0.4		1.7	8.6	0.6		9.0	5.4	3.7	
70th%Factor:	1.20	1.18	1.18		1.18	1.19	1.20		1.20	1.18	1.20		1.18	1.19	1.19	
HCM2k70thQ:	1.7	8.8	10.7		12.1	6.4	0.5		2.0	10.2	0.8		10.7	6.5	4.4	
85th%Factor:	1.59	1.53	1.52		1.51	1.55	1.60		1.58	1.53	1.59		1.52	1.55	1.57	
HCM2k85thQ:	2.3	11.4	13.8		15.5	8.3	0.6		2.7	13.2	1.0		13.8	8.4	5.8	
90th%Factor:	1.77	1.68	1.65		1.64	1.71	1.79		1.77	1.66	1.79		1.65	1.70	1.73	
HCM2k90thQ:	2.5	12.4	15.0		16.8	9.2	0.7		3.0	14.3	1.1		15.0	9.3	6.4	
95th%Factor:	2.05	1.90	1.86		1.84	1.94	2.09		2.05	1.87	2.08		1.86	1.94	1.99	
HCM2k95thQ:	2.9	14.1	16.9		18.9	10.5	0.8		3.5	16.1	1.3		16.9	10.6	7.3	
98th%Factor:	2.60	2.27	2.20		2.15	2.36	2.67		2.58	2.21	2.65		2.20	2.36	2.45	
HCM2k98thQ:	3.7	16.8	19.9		22.1	12.7	1.1		4.4	19.1	1.7		19.9	12.8	9.0	

Cumul No Project AM Pk Hr With Recommended Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.873
Loss Time (sec):	12	Average Delay (sec/veh):	38.6
Optimal Cycle:	98	Level Of Service:	D

Street Name:	West Lane								Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	3	0 2	0 1		2	0 2	0 1		2	0 3	1 0		2	0 3	1 0	
Volume Module:	AM Peak Hour															
Base Vol:	477	355	62		120	780	390		411	1240	466		143	1236	53	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	477	355	62		120	780	390		411	1240	466		143	1236	53	
Added Vol:	40	0	41		13	0	0		0	72	15		77	173	31	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	517	355	103		133	780	390		411	1312	481		220	1409	84	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	562	386	112		145	848	424		447	1426	523		239	1532	91	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	562	386	112		145	848	424		447	1426	523		239	1532	91	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	562	386	112		145	848	424		447	1426	523		239	1532	91	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.86	0.86		0.90	0.88	0.88	
Lanes:	3.00	2.00	1.00		2.00	2.00	1.00		2.00	3.00	1.00		2.00	3.77	0.23	
Final Sat.:	5147	3538	1583		3432	3538	1583		3432	4880	1627		3432	6345	378	
Capacity Analysis Module:																
Vol/Sat:	0.11	0.11	0.07		0.04	0.24	0.27		0.13	0.29	0.32		0.07	0.24	0.24	
Crit Moves:	****						****				****		****			
Green/Cycle:	0.13	0.31	0.31		0.12	0.31	0.31		0.16	0.37	0.37		0.08	0.29	0.29	
Volume/Cap:	0.87	0.35	0.23		0.35	0.78	0.87		0.83	0.79	0.87		0.87	0.83	0.83	
Delay/Veh:	55.5	26.8	25.7		40.9	35.3	48.7		51.2	30.1	33.5		70.5	36.2	36.2	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	55.5	26.8	25.7		40.9	35.3	48.7		51.2	30.1	33.5		70.5	36.2	36.2	
LOS by Move:	E	C	C		D	D	D		D	C	C		E	D	D	
HCM2k95thQ:	320	205	109		120	612	668		431	673	810		218	592	592	

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	3	0 2	0 1		2	0 2	0 1		2	0 3	1 0		2	0 3	1 0	
Lane Group:	L	T	R		L	T	R		L	RT	RT		L	RT	RT	
#LnsInGrps:	3	2	1		2	2	1		2	4	4		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.96	0.96		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.94	0.94		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.86	0.86		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project AM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.13	0.31	0.31	0.12	0.31	0.31	0.16	0.37	0.37	0.08	0.29	0.29
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.89	0.87	0.97	0.95	0.97	0.99	0.93	0.96	1.00	0.97	0.97
Q1:	5.2	3.9	2.0	1.8	10.8	10.8	6.1	12.1	14.2	3.4	11.2	11.2
UpstreamVC:	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.11	0.11
UpstreamAdj:	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00
EarlyArrAdj:	0.30	0.53	0.48	1.00	1.00	1.00	1.00	1.00	1.00	0.23	0.51	0.51
Q2:	1.4	0.3	0.1	0.5	3.0	4.4	3.2	3.2	4.7	1.1	2.1	2.1
HCM2KQueue:	6.7	4.1	2.1	2.4	13.8	15.2	9.3	15.3	18.9	4.4	13.3	13.3
70th%Factor:	1.18	1.19	1.19	1.19	1.17	1.17	1.18	1.17	1.16	1.19	1.17	1.17
HCM2k70thQ:	7.9	4.9	2.6	2.8	16.1	17.8	11.0	17.9	22.0	5.3	15.5	15.5
85th%Factor:	1.54	1.56	1.58	1.58	1.49	1.48	1.52	1.48	1.46	1.56	1.49	1.49
HCM2k85thQ:	10.3	6.5	3.4	3.7	20.5	22.5	14.1	22.7	27.7	6.9	19.8	19.8
90th%Factor:	1.69	1.73	1.76	1.76	1.60	1.59	1.65	1.59	1.56	1.72	1.61	1.61
HCM2k90thQ:	11.3	7.1	3.8	4.1	22.0	24.1	15.3	24.3	29.5	7.6	21.3	21.3
95th%Factor:	1.91	1.98	2.03	2.03	1.78	1.76	1.86	1.76	1.71	1.97	1.79	1.79
HCM2k95thQ:	12.8	8.2	4.4	4.8	24.5	26.7	17.3	26.9	32.4	8.7	23.7	23.7
98th%Factor:	2.30	2.43	2.55	2.53	2.05	2.01	2.19	2.01	1.93	2.41	2.06	2.06
HCM2k98thQ:	15.3	10.1	5.5	6.0	28.2	30.6	20.3	30.8	36.6	10.7	27.3	27.3

Cumul No Project AM Pk Hr With Recommended Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.683
Loss Time (sec): 12 Average Delay (sec/veh): 32.0
Optimal Cycle: 57 Level Of Service: C

Street Name:	Ham Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	4 0	1	1 0	4 0	1
Volume Module:AM Peak Hour												
Base Vol:	6	16	13	386	24	70	88	1267	5	27	1347	218
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	6	16	13	386	24	70	88	1267	5	27	1347	218
Added Vol:	179	93	176	11	40	0	0	76	82	97	102	33
Pass-By:	3	0	4	0	0	0	0	-6	6	5	-5	0
Initial Fut:	188	109	193	397	64	70	88	1337	93	129	1444	251
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	204	118	210	432	70	76	96	1453	101	140	1570	273
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	204	118	210	432	70	76	96	1453	101	140	1570	273
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	204	118	210	432	70	76	96	1453	101	140	1570	273
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.90	0.90	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	1.00	1.00	1.00	0.48	0.52	1.00	4.00	1.00	1.00	4.00	1.00
Final Sat.:	1769	1862	1583	1769	820	897	1769	6778	1583	1769	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.12	0.06	0.13	0.24	0.08	0.08	0.05	0.21	0.06	0.08	0.23	0.17
Crit Moves:		****		****				****		****		
Green/Cycle:	0.26	0.09	0.21	0.36	0.19	0.19	0.08	0.31	0.31	0.12	0.35	0.35
Volume/Cap:	0.45	0.68	0.63	0.68	0.45	0.45	0.66	0.68	0.20	0.68	0.66	0.49
Delay/Veh:	31.7	54.6	40.0	30.4	36.8	36.8	55.8	30.9	25.4	51.6	28.3	26.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.7	54.6	40.0	30.4	36.8	36.8	55.8	30.9	25.4	51.6	28.3	26.3
LOS by Move:	C	D	D	C	D	D	E	C	C	D	C	C
HCM2k95thQ:	252	239	319	514	206	206	150	466	97	208	472	277

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	1	0	1	0	0	1	0	1	0	4	0	1	0	4
Lane Group:	L	T	R		L	RT	RT		L	T	R		L	T	R	
#LnsInGrps:	1	1	1		1	1	1		1	4	1		1	4	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.92	0.92		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.90	0.90		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.91	1.00		1.00	0.91	1.00	
Fnl Sat Adj:	0.93	0.98	0.83		0.93	0.90	0.90		0.93	0.89	0.83		0.93	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project AM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.26	0.09	0.21		0.36	0.19	0.19		0.08	0.31	0.31		0.12	0.35	0.35	
ArrivalType:	4				4				4				4			
ProgFactor:	0.92	0.99	0.96		0.91	0.95	0.95		0.99	0.93	0.87		0.98	0.91	0.88	
Q1:	4.4	3.1	5.1		9.3	3.4	3.4		2.6	9.0	1.8		3.7	9.3	5.3	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.05	0.05	0.05		0.41	0.41	0.41	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		1.00	1.00	1.00		0.91	0.91	0.91	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.23	0.53	0.48		0.26	0.52	0.47	
Q2:	0.8	1.7	1.6		2.0	0.8	0.8		0.4	1.1	0.1		0.5	1.0	0.5	
HCM2KQueue:	5.2	4.9	6.7		11.3	4.2	4.2		3.0	10.1	1.9		4.2	10.3	5.7	
70th%Factor:	1.19	1.19	1.18		1.18	1.19	1.19		1.19	1.18	1.20		1.19	1.18	1.19	
HCM2k70thQ:	6.1	5.8	7.9		13.3	5.0	5.0		3.6	11.9	2.3		5.0	12.1	6.8	
85th%Factor:	1.55	1.56	1.54		1.51	1.56	1.56		1.57	1.51	1.58		1.56	1.51	1.55	
HCM2k85thQ:	8.0	7.6	10.3		17.0	6.5	6.5		4.7	15.3	3.0		6.6	15.5	8.9	
90th%Factor:	1.71	1.71	1.69		1.63	1.72	1.72		1.74	1.64	1.76		1.72	1.64	1.70	
HCM2k90thQ:	8.8	8.4	11.3		18.4	7.2	7.2		5.2	16.6	3.4		7.3	16.8	9.7	
95th%Factor:	1.95	1.96	1.91		1.82	1.98	1.98		2.01	1.84	2.04		1.97	1.84	1.94	
HCM2k95thQ:	10.1	9.5	12.8		20.6	8.3	8.3		6.0	18.7	3.9		8.3	18.9	11.1	
98th%Factor:	2.37	2.39	2.30		2.12	2.43	2.43		2.50	2.16	2.56		2.42	2.15	2.34	
HCM2k98thQ:	12.3	11.6	15.3		24.0	10.1	10.1		7.4	21.9	4.9		10.2	22.1	13.4	

Cumul No Project AM Pk Hr With Recommended Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

Cycle (sec):	100	Critical Vol./Cap.(X):	0.760
Loss Time (sec):	12	Average Delay (sec/veh):	32.2
Optimal Cycle:	69	Level Of Service:	C

Street Name:	Holman Road						Lt. Col. Mark Taylor Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	2 0	3 0	1	1 0	1 0	1	1 0	1 0	1
Volume Module:	AM Peak Hour											
Base Vol:	38	228	161	281	337	28	35	429	30	299	427	149
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	38	228	161	281	337	28	35	429	30	299	427	149
Added Vol:	10	2	0	13	3	9	21	158	24	0	62	8
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	48	230	161	294	340	37	56	587	54	299	489	157
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	52	250	175	320	370	40	61	638	59	325	532	171
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	52	250	175	320	370	40	61	638	59	325	532	171
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	52	250	175	320	370	40	61	638	59	325	532	171
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.90	0.89	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1769	5083	1583	3432	5083	1583	1769	1862	1583	1769	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.05	0.11	0.09	0.07	0.03	0.03	0.34	0.04	0.18	0.29	0.11
Crit Moves:		****		****				****		****		
Green/Cycle:	0.05	0.06	0.31	0.12	0.13	0.13	0.07	0.45	0.45	0.24	0.62	0.62
Volume/Cap:	0.55	0.76	0.36	0.76	0.55	0.19	0.46	0.76	0.08	0.76	0.46	0.17
Delay/Veh:	52.5	55.9	27.5	50.3	41.4	39.0	46.9	27.0	15.7	43.0	10.5	8.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.5	55.9	27.5	50.3	41.4	39.0	46.9	27.0	15.7	43.0	10.5	8.3
LOS by Move:	D	E	C	D	D	D	D	C	B	D	B	A
HCM2k95thQ:	81	151	180	321	223	61	91	659	38	491	246	61

Note: Queue reported is the distance per lane in feet.

Cumul No Project AM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	3 0	1		2 0	3 0	1		1 0	1 0	1		1 0	1 0	1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	3	1		2	3	1		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		0.97	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.90	0.89	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project AM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.05	0.06	0.31	0.12	0.13	0.13	0.07	0.45	0.45	0.24	0.62	0.62
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.99	0.89	0.99	0.97	0.96	0.98	0.88	0.74	0.97	0.53	0.48
Q1:	1.4	2.5	3.4	4.4	3.4	1.0	1.6	13.0	0.7	8.1	4.2	1.0
UpstreamVC:	0.44	0.44	0.44	0.00	0.00	0.00	0.06	0.06	0.06	0.00	0.00	0.00
UpstreamAdj:	0.90	0.90	0.90	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
EarlyArrAdj:	0.16	0.19	0.43	1.00	1.00	1.00	0.22	0.66	0.60	1.00	1.00	1.00
Q2:	0.2	0.5	0.2	2.3	1.1	0.2	0.2	1.9	0.1	2.6	0.8	0.2
HCM2KQueue:	1.6	3.0	3.6	6.7	4.5	1.2	1.8	15.0	0.7	10.7	5.0	1.2
70th%Factor:	1.20	1.19	1.19	1.18	1.19	1.20	1.20	1.17	1.20	1.18	1.19	1.20
HCM2k70thQ:	1.9	3.6	4.3	7.9	5.4	1.4	2.1	17.5	0.9	12.6	6.0	1.4
85th%Factor:	1.58	1.57	1.57	1.54	1.56	1.59	1.58	1.48	1.59	1.51	1.55	1.59
HCM2k85thQ:	2.5	4.7	5.7	10.3	7.1	1.9	2.8	22.2	1.2	16.2	7.8	1.9
90th%Factor:	1.77	1.74	1.73	1.69	1.72	1.78	1.77	1.59	1.79	1.63	1.71	1.78
HCM2k90thQ:	2.8	5.2	6.3	11.3	7.8	2.1	3.1	23.8	1.3	17.5	8.6	2.1
95th%Factor:	2.05	2.01	1.99	1.91	1.97	2.06	2.04	1.76	2.08	1.83	1.95	2.06
HCM2k95thQ:	3.3	6.0	7.2	12.8	8.9	2.4	3.6	26.3	1.5	19.6	9.8	2.4
98th%Factor:	2.59	2.49	2.46	2.30	2.41	2.61	2.57	2.02	2.64	2.14	2.38	2.61
HCM2k98thQ:	4.1	7.5	8.9	15.4	10.9	3.1	4.6	30.2	2.0	22.9	12.0	3.1

Cumul No Project AM Pk Hr With Recommended Improvements

Future Queue Length Report (feet)

Node	Intersection	Northbound L	T	R	Southbound L	T	R	Eastbound L	T	R	Westbound L	T	R
#3	[HCM2k95thQ]:	261	328	202	379	470	298	196	397	92	190	527	527
#5	[HCM2k95thQ]:	128	309	459	505	362	109	162	619	106	470	469	344
#6	[HCM2k95thQ]:	73	351	422	472	262	21	87	404	33	421	265	183
#8	[HCM2k95thQ]:	320	205	109	120	612	668	431	673	810	218	592	592
#9	[HCM2k95thQ]:	252	239	319	514	206	206	150	466	97	208	472	277
#17	[HCM2k95thQ]:	81	151	180	321	223	61	91	659	38	491	246	61

Cumul No Project PM Pk Hr

Scenario Report

Scenario:	Cumul No Proj PM
Command:	Cumul No Proj PM
Volume:	Cumul GP Alt PM
Geometry:	Cumul No Proj
Impact Fee:	Default Impact Fee
Trip Generation:	PM Pk Hr
Trip Distribution:	Cumul With Bridge PM
Paths:	Cumul No Proj
Routes:	Default Route
Configuration:	Default Configuration

Cumul No Project PM Pk Hr

Trip Generation Report

Forecast for PM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	0.00	ElemSchStudent	0.07	0.08	0	0	0	0.0
1	Village West	0.00	Tra Vigne SFDU	0.51	0.30	0	0	0	0.0
1	Village West	1646.00	GP Alt SFDU	0.48	0.28	790	461	1251	51.7
1	Village West	130.68	GP Alt Com KSF	2.63	2.85	344	372	716	29.6
1	Village West	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
1	Village West	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
1	Village West	232.00	GP Alt MFDU	0.41	0.22	95	51	146	6.0
1	Village West	0.00	Tra V Internal	-64.00	-64.00	0	0	0	0.0
1	Village West	1.00	GP Alt Interna	-76.00	-76.00	-76	-76	-152	-6.3
1	Village West	1.00	GP Alt Pass-By	-106.00	-111.00	-106	-111	-217	-9
	Zone 1 Subtotal					1047	697	1744	72.0
2	Village East	0.00	Tra Vigne SFDU	0.51	0.30	0	0	0	0.0
2	Village East	774.00	GP Alt SFDU	0.48	0.28	372	217	589	24.3
2	Village East	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
2	Village East	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
	Zone 2 Subtotal					372	217	589	24.3
4	Industrial	406.94	Indust KSF	0.05	0.17	20	69	89	3.7
	Zone 4 Subtotal					20	69	89	3.7
TOTAL						1439	983	2422	100.0

Cumul No Project PM Pk Hr

Trip Distribution Report

Percent Of Trips Cumul With Bridge PM

Zone	To Gates 1	2	3	4	5	6	7	8	9	10	11
1	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	2.0
2	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	2.0
4	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	2.0

Zone	To Gates 12	13	14	15	16	17	19	20	21	22	23
1	5.0	13.0	1.0	2.0	3.0	1.0	20.0	3.0	5.0	3.0	14.0
2	5.0	13.0	1.0	2.0	3.0	1.0	20.0	3.0	5.0	3.0	14.0
4	5.0	13.0	1.0	2.0	3.0	1.0	20.0	3.0	5.0	3.0	14.0

Cumul No Project PM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	F	88.3	1.184	F	93.7	1.205	+ 5.436 D/V
# 4 Eight Mile Rd & Davis Rd	D	43.9	0.918	D	48.5	0.956	+ 4.630 D/V
# 5 Eight Mile & Lower Sacto Rd	E	63.4	1.034	F	82.4	1.112	+18.953 D/V
# 6 West Lane & Armstrong Road	F	142.5	1.385	F	144.6	1.385	+ 2.083 D/V
# 7 West Lane & Ham Lane	B	12.3	0.496	B	15.6	0.561	+ 3.280 D/V
# 8 Eight Mile Rd & West Ln	E	77.8	1.149	F	94.6	1.185	+16.836 D/V
# 9 Eight Mile Road & Ham Lane	C	28.3	0.773	E	71.1	1.108	+42.755 D/V
# 10 Eight Mile & Leach Rd/St J	A	1.1	0.405	A	7.9	0.508	+ 6.812 D/V
# 11 Eight Mile & MickeGrove/Holman	C	31.3	0.746	C	35.0	0.865	+ 3.680 D/V
# 12 Eight Mile & SR 99 W Frontage	C	30.3	0.864	C	32.6	0.925	+ 2.243 D/V
# 13 Eight Mile & SR 99 E Frontage	A	4.0	0.229	A	3.9	0.239	-0.091 D/V
# 16 West & L.C.MarkTaylor/Marlette	C	24.3	0.513	C	27.8	0.594	+ 3.421 D/V
# 17 Holman & Lt Col Mark Taylor	E	75.2	1.050	F	103.5	1.194	+28.293 D/V
# 18 Morada Lane & West Lane	C	30.9	0.731	C	31.8	0.778	+ 0.970 D/V
# 19 Morada Lane & Holman Road	D	35.6	0.654	D	35.9	0.670	+ 0.245 D/V
# 22 Morada Ln & SR99 W Frontage Rd	C	24.4	0.647	C	24.3	0.647	-0.134 D/V
# 24 West Ln & West Ln Frontage Rd	C	28.0	0.824	C	28.6	0.860	+ 0.553 D/V
# 25 West Lane & Knickerbocker Dr	C	31.1	0.832	C	32.4	0.868	+ 1.278 D/V
# 26 West Lane & Hammer Lane	F	81.0	1.237	F	94.6	1.256	+13.601 D/V
# 27 Hammer Lane & Holman Road	D	52.0	1.031	D	51.9	1.031	-0.054 D/V
# 46 Lt Col Mark Taylor St & Ham Ln	C	23.1	0.198	C	30.2	0.488	+ 7.045 D/V

Cumul No Project PM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]

Cumul No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.205
Loss Time (sec):	12	Average Delay (sec/veh):	93.7
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	PM Peak Hour											
Base Vol:	198	735	196	512	537	219	395	1817	110	267	1880	404
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	198	735	196	512	537	219	395	1817	110	267	1880	404
Added Vol:	0	0	14	14	0	0	0	72	0	10	49	10
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	198	735	210	526	537	219	395	1889	110	277	1929	414
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	215	799	228	572	584	238	429	2053	120	301	2097	450
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	215	799	228	572	584	238	429	2053	120	301	2097	450
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	215	799	228	572	584	238	429	2053	120	301	2097	450
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	3.29	0.71
Final Sat.:	1769	3538	1583	1769	3538	1583	3432	6778	1583	3432	5429	1165
Capacity Analysis Module:												
Vol/Sat:	0.12	0.23	0.14	0.32	0.16	0.15	0.13	0.30	0.08	0.09	0.39	0.39
Crit Moves:		****		****			****				****	
Green/Cycle:	0.19	0.19	0.19	0.27	0.26	0.26	0.10	0.33	0.33	0.10	0.32	0.32
Volume/Cap:	0.63	1.20	0.77	1.20	0.63	0.57	1.20	0.92	0.23	0.92	1.20	1.20
Delay/Veh:	40.8	147	50.2	147.4	34.0	34.0	160.7	39.2	24.6	75.1	131	131.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.8	147	50.2	147.4	34.0	34.0	160.7	39.2	24.6	75.1	131	131.0
LOS by Move:	D	F	D	F	C	C	F	D	C	E	F	F
HCM2k95thQ:	327	1019	396	1294	407	318	502	673	106	259	1421	1421

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 2	0 1		1	0 2	0 1		2	0 4	0 1		2	0 3	1 0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	2	1		1	2	1		2	4	1		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.90	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.19	0.19	0.19		0.27	0.26	0.26		0.10	0.33	0.33		0.10	0.32	0.32	
ArrivalType:		4				4				4				4		
ProgFactor:	0.96	1.00	0.98		1.00	0.94	0.94		1.00	0.98	0.86		1.00	1.00	1.00	
Q1:	5.3	11.7	5.9		15.9	7.1	5.4		6.1	14.8	2.1		4.3	19.4	19.4	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		1.00	1.00	1.00		0.75	0.75	0.75	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.10	0.10	0.10		0.58	0.58	0.58	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.03	0.06	0.05		0.15	0.31	0.31	
Q2:	1.5	13.0	2.6		16.5	1.6	1.3		4.9	0.6	0.0		1.1	16.5	16.5	
HCM2KQueue:	6.8	24.7	8.5		32.4	8.7	6.7		11.0	15.3	2.1		5.3	35.9	35.9	
70th%Factor:	1.18	1.15	1.18		1.14	1.18	1.18		1.18	1.17	1.19		1.19	1.14	1.14	
HCM2k70thQ:	8.1	28.5	10.0		37.0	10.3	7.9		12.9	17.9	2.5		6.3	41.0	41.0	
85th%Factor:	1.54	1.43	1.53		1.40	1.52	1.54		1.51	1.48	1.58		1.55	1.39	1.39	
HCM2k85thQ:	10.5	35.3	12.9		45.4	13.3	10.2		16.6	22.7	3.3		8.2	50.0	50.0	
90th%Factor:	1.68	1.52	1.66		1.48	1.66	1.69		1.63	1.59	1.76		1.71	1.47	1.47	
HCM2k90thQ:	11.5	37.4	14.1		47.9	14.4	11.2		17.9	24.3	3.7		9.1	52.7	52.7	
95th%Factor:	1.91	1.65	1.88		1.60	1.87	1.91		1.83	1.76	2.03		1.95	1.58	1.58	
HCM2k95thQ:	13.1	40.8	15.9		51.8	16.3	12.7		20.1	26.9	4.2		10.3	56.9	56.9	
98th%Factor:	2.29	1.85	2.22		1.78	2.21	2.30		2.13	2.01	2.55		2.36	1.76	1.76	
HCM2k98thQ:	15.7	45.6	18.8		57.7	19.2	15.3		23.4	30.8	5.3		12.6	63.4	63.4	

Cumul No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.956
Loss Time (sec):	12	Average Delay (sec/veh):	48.5
Optimal Cycle:	144	Level Of Service:	D

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	1 0	3 1	0
Volume Module:	PM Peak Hour											
Base Vol:	323	606	245	243	458	136	241	1683	183	324	1658	180
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	323	606	245	243	458	136	241	1683	183	324	1658	180
Added Vol:	0	0	29	14	0	0	0	101	0	20	69	10
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	323	606	274	257	458	136	241	1784	183	344	1727	190
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	351	659	298	279	498	148	262	1939	199	374	1877	207
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	351	659	298	279	498	148	262	1939	199	374	1877	207
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	351	659	298	279	498	148	262	1939	199	374	1877	207
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.93	0.88	0.88
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	1.00	3.60	0.40
Final Sat.:	1769	3538	1583	1769	3538	1583	3432	6778	1583	1769	6014	662
Capacity Analysis Module:												
Vol/Sat:	0.20	0.19	0.19	0.16	0.14	0.09	0.08	0.29	0.13	0.21	0.31	0.31
Crit Moves:		****		****				****		****		
Green/Cycle:	0.21	0.19	0.19	0.17	0.15	0.15	0.10	0.30	0.30	0.22	0.42	0.42
Volume/Cap:	0.94	0.96	0.97	0.96	0.94	0.63	0.75	0.96	0.42	0.96	0.75	0.75
Delay/Veh:	71.0	63.8	82.0	82.2	67.7	45.1	52.2	45.8	28.7	72.7	25.8	25.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	71.0	63.8	82.0	82.2	67.7	45.1	52.2	45.8	28.7	72.7	25.8	25.8
LOS by Move:	E	E	F	F	E	D	D	D	C	E	C	C
HCM2k95thQ:	659	666	609	576	542	255	189	709	202	701	649	649

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L - T - R				L - T - R				L - T - R				L - T - R			
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	2 0	1		1 0	2 0	1		2 0	4 0	1		1 0	3 1	0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	2	1		1	2	1		2	4	1		1	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12				
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		0.97	0.91	1.00		1.00	0.91	0.91	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.90	0.89	0.83		0.93	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.21	0.19	0.19	0.17	0.15	0.15	0.10	0.30	0.30	0.22	0.42	0.42
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	1.00	1.00	1.00	1.00	0.98	0.99	0.99	0.90	0.99	0.90	0.90
Q1:	9.5	9.5	8.2	7.7	7.2	3.8	3.6	14.4	4.0	10.2	12.1	12.1
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.92	0.92	0.92	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.27	0.27	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.07	0.14	0.13	1.00	1.00	1.00
Q2:	5.4	5.7	5.5	5.2	4.8	1.5	0.2	1.9	0.1	5.9	2.7	2.7
HCM2KQueue:	15.0	15.2	13.7	12.8	12.0	5.2	3.8	16.3	4.1	16.1	14.7	14.7
70th%Factor:	1.17	1.17	1.17	1.17	1.17	1.19	1.19	1.17	1.19	1.17	1.17	1.17
HCM2k70thQ:	17.5	17.7	16.0	15.0	14.1	6.2	4.5	19.0	4.9	18.7	17.2	17.2
85th%Factor:	1.48	1.48	1.49	1.50	1.50	1.55	1.56	1.47	1.56	1.48	1.48	1.48
HCM2k85thQ:	22.2	22.4	20.4	19.2	18.0	8.1	6.0	24.0	6.4	23.7	21.8	21.8
90th%Factor:	1.59	1.59	1.60	1.61	1.62	1.71	1.73	1.58	1.73	1.58	1.59	1.59
HCM2k90thQ:	23.8	24.1	21.9	20.7	19.4	8.9	6.6	25.7	7.0	25.4	23.4	23.4
95th%Factor:	1.76	1.76	1.78	1.79	1.81	1.95	1.99	1.74	1.98	1.75	1.76	1.76
HCM2k95thQ:	26.4	26.6	24.3	23.0	21.7	10.2	7.6	28.4	8.1	28.0	26.0	26.0
98th%Factor:	2.02	2.01	2.05	2.07	2.10	2.37	2.45	1.99	2.43	1.99	2.02	2.02
HCM2k98thQ:	30.2	30.5	28.0	26.6	25.1	12.4	9.3	32.3	9.9	32.0	29.8	29.8

Cumul No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec): 100 Critical Vol./Cap.(X): 1.112
Loss Time (sec): 12 Average Delay (sec/veh): 82.4
Optimal Cycle: 180 Level Of Service: F

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	PM Peak Hour											
Base Vol:	169	787	393	599	513	109	210	1811	90	498	1825	491
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	169	787	393	599	513	109	210	1811	90	498	1825	491
Added Vol:	0	0	43	29	0	0	0	144	0	29	98	20
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	169	787	436	628	513	109	210	1955	90	527	1923	511
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	184	855	474	683	558	118	228	2125	98	573	2090	555
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	184	855	474	683	558	118	228	2125	98	573	2090	555
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	184	855	474	683	558	118	228	2125	98	573	2090	555
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.86	0.86
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	4.00	1.00	2.00	3.16	0.84
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	6778	1583	3432	5189	1379
Capacity Analysis Module:												
Vol/Sat:	0.05	0.24	0.30	0.20	0.16	0.07	0.07	0.31	0.06	0.17	0.40	0.40
Crit Moves:			****	****				****		****		
Green/Cycle:	0.11	0.27	0.27	0.18	0.33	0.33	0.06	0.28	0.28	0.15	0.37	0.37
Volume/Cap:	0.47	0.90	1.11	1.11	0.47	0.22	1.09	1.11	0.22	1.11	1.09	1.09
Delay/Veh:	42.4	46.4	114.3	112.2	26.6	24.2	134.0	94.5	27.7	116.6	78.2	78.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.4	46.4	114.3	112.2	26.6	24.2	134.0	94.5	27.7	116.6	78.2	78.2
LOS by Move:	D	D	F	F	C	C	F	F	C	F	E	E
HCM2k95thQ:	162	729	1010	811	316	117	366	1182	108	715	1352	1352

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0 1	2	0	2	0 1	2	0	4	0 1	2	0	3	1 0
Lane Group:	L		T	R	L		T	R	L		T	R	L		RT	RT
#LnsInGrps:	2		2	1	2		2	1	2		4	1	2		4	4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.86	0.86	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.11	0.27	0.27		0.18	0.33	0.33		0.06	0.28	0.28		0.15	0.37	0.37	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.98	1.00		1.00	0.89	0.86		1.00	1.00	0.89		1.00	1.00	1.00	
Q1:		2.4	11.8	13.2	9.8	5.7	2.0		3.3	16.2	1.8		8.2	20.2	20.2	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:		0.8	5.0	11.2	9.2	0.9	0.3		4.5	13.0	0.3		8.2	13.8	13.8	
HCM2KQueue:		3.2	16.8	24.4	19.0	6.6	2.3		7.7	29.2	2.1		16.4	34.0	34.0	
70th%Factor:	1.19	1.17	1.15		1.16	1.18	1.19		1.18	1.15	1.19		1.17	1.14	1.14	
HCM2k70thQ:		3.9	19.6	28.2	22.1	7.8	2.8		9.1	33.5	2.5		19.2	38.9	38.9	
85th%Factor:	1.57	1.47	1.43		1.46	1.54	1.58		1.53	1.41	1.58		1.47	1.40	1.40	
HCM2k85thQ:		5.1	24.7	35.0	27.7	10.2	3.6		11.8	41.3	3.4		24.2	47.5	47.5	
90th%Factor:	1.74	1.57	1.52		1.55	1.69	1.76		1.67	1.49	1.76		1.58	1.47	1.47	
HCM2k90thQ:		5.6	26.4	37.1	29.5	11.1	4.1		12.9	43.6	3.7		25.9	50.1	50.1	
95th%Factor:	2.00	1.74	1.65		1.71	1.92	2.03		1.89	1.62	2.03		1.74	1.59	1.59	
HCM2k95thQ:		6.5	29.2	40.4	32.4	12.6	4.7		14.6	47.3	4.3		28.6	54.1	54.1	
98th%Factor:	2.48	1.97	1.85		1.93	2.30	2.54		2.25	1.81	2.55		1.98	1.77	1.77	
HCM2k98thQ:		8.0	33.2	45.2	36.7	15.2	5.9		17.4	52.7	5.4		32.6	60.3	60.3	

Cumul No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec):	100	Critical Vol./Cap.(X):	1.385
Loss Time (sec):	12	Average Delay (sec/veh):	144.6
Optimal Cycle:	180	Level Of Service:	F

Street Name:	West Lane						Armstrong Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:PM Peak Hour												
Base Vol:	46	755	443	654	450	29	58	592	24	539	595	564
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	46	755	443	654	450	29	58	592	24	539	595	564
Added Vol:	0	59	0	0	86	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	46	814	443	654	536	29	58	592	24	539	595	564
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	50	885	482	711	583	32	63	643	26	586	647	613
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	885	482	711	583	32	63	643	26	586	647	613
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	885	482	711	583	32	63	643	26	586	647	613
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.25	0.30	0.40	0.16	0.02	0.04	0.18	0.02	0.33	0.18	0.39
Crit Moves:			****	****				****		****		
Green/Cycle:	0.07	0.22	0.22	0.29	0.43	0.43	0.03	0.13	0.13	0.24	0.34	0.34
Volume/Cap:	0.38	1.14	1.39	1.39	0.38	0.05	1.14	1.39	0.13	1.39	0.54	1.14
Delay/Veh:	45.9	117	229.4	220.8	19.3	16.3	213.8	230	38.6	225.6	27.2	117.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.9	117	229.4	220.8	19.3	16.3	213.8	230	38.6	225.6	27.2	117.4
LOS by Move:	D	F	F	F	B	B	F	F	D	F	C	F
HCM2k95thQ:	96	1027	1322	1838	253	22	248	998	39	1557	376	1273

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L - T - R						L - T - R						L - T - R						L - T - R					
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1
HCM Ops Adjusted Lane Utilization Module:																								
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12												
CrsswalkWid:	8			8			8			8														
% Hev Veh:	2			2			2			2														
Grade:	0%			0%			0%			0%														
Parking/Hr:	No			No			No			No														
Bus Stp/Hr:	0			0			0			0														
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:	0			0			0			0														
ExclusiveRT:	Include			Include			Include			Include														
% RT Prtct:	0			0			0			0														
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx												
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98												
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00												
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00												
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85												
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx												
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83												
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
MLF Sat Adj:	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00												
Fnl Sat Adj:	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83												
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.07	0.22	0.22	0.29	0.43	0.43	0.03	0.13	0.13	0.24	0.34	0.34
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	1.00	1.00	1.00	0.80	0.75	1.00	1.00	0.96	1.00	0.90	1.00
Q1:	1.3	12.9	13.4	19.7	4.6	0.4	1.8	9.4	0.6	16.3	6.9	17.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.6	12.0	19.8	27.9	0.6	0.0	3.3	14.7	0.1	23.5	1.1	14.7
HCM2KQueue:	1.9	24.9	33.2	47.7	5.2	0.4	5.1	24.1	0.8	39.8	8.0	31.8
70th%Factor:	1.20	1.15	1.14	1.13	1.19	1.20	1.19	1.15	1.20	1.14	1.18	1.15
HCM2k70thQ:	2.2	28.7	37.9	53.9	6.2	0.5	6.0	27.8	0.9	45.2	9.4	36.4
85th%Factor:	1.58	1.43	1.40	1.36	1.55	1.60	1.55	1.43	1.59	1.38	1.53	1.40
HCM2k85thQ:	3.0	35.6	46.4	64.9	8.1	0.7	7.9	34.5	1.2	54.9	12.2	44.6
90th%Factor:	1.76	1.52	1.48	1.44	1.71	1.79	1.71	1.52	1.79	1.45	1.67	1.48
HCM2k90thQ:	3.3	37.7	49.0	68.5	8.9	0.8	8.7	36.6	1.3	57.9	13.3	47.1
95th%Factor:	2.04	1.65	1.60	1.54	1.95	2.09	1.95	1.66	2.08	1.57	1.89	1.60
HCM2k95thQ:	3.8	41.1	52.9	73.5	10.1	0.9	9.9	39.9	1.6	62.3	15.1	50.9
98th%Factor:	2.57	1.85	1.78	1.73	2.37	2.67	2.38	1.86	2.64	1.75	2.24	1.79
HCM2k98thQ:	4.8	46.0	59.0	82.2	12.3	1.1	12.1	44.7	2.0	69.5	17.9	56.8

Cumul No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.561
Loss Time (sec): 9 Average Delay (sec/veh): 15.6
Optimal Cycle: 38 Level Of Service: B

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0 1	1 0	1	0 1 1 0
Volume Module:	PM Peak Hour											
Base Vol:	52	31	35	46	22	29	53	1044	29	46	1044	35
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	52	31	35	46	22	29	53	1044	29	46	1044	35
Added Vol:	0	0	38	0	0	0	0	21	0	56	31	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	52	31	73	46	22	29	53	1065	29	102	1075	35
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	57	34	79	50	24	32	58	1158	32	111	1168	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	57	34	79	50	24	32	58	1158	32	111	1168	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	57	34	79	50	24	32	58	1158	32	111	1168	38
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	0.81	0.74	0.74	0.74	0.93	0.93	0.93	0.93	0.93	0.93
Lanes:	0.33	0.20	0.47	0.47	0.23	0.30	1.00	1.95	0.05	1.00	1.94	0.06
Final Sat.:	513	306	720	665	318	420	1769	3430	93	1769	3409	111
Capacity Analysis Module:												
Vol/Sat:	0.11	0.11	0.11	0.08	0.08	0.08	0.03	0.34	0.34	0.06	0.34	0.34
Crit Moves:		****						****		****		
Green/Cycle:	0.20	0.20	0.20	0.20	0.20	0.20	0.06	0.60	0.60	0.11	0.65	0.65
Volume/Cap:	0.56	0.56	0.56	0.38	0.38	0.38	0.53	0.56	0.56	0.56	0.53	0.53
Delay/Veh:	38.7	38.7	38.7	35.8	35.8	35.8	50.2	12.3	12.3	45.7	9.5	9.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.7	38.7	38.7	35.8	35.8	35.8	50.2	12.3	12.3	45.7	9.5	9.5
LOS by Move:	D	D	D	D	D	D	D	B	B	D	A	A
HCM2k95thQ:	256	256	256	151	151	151	126	356	356	199	261	261

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        0  0  1! 0  0    0  0  1! 0  0    1  0  1  1  0    1  0  1  1  0
Lane Group:   LTR  LTR   LTR   LTR  LTR   LTR    L   RT     RT    L   RT     RT
#LnsInGrps:     1    1     1     1    1     1     1    2     2     1    2     2
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:          8                8                8                8
% Hev Veh:            2                2                2                2
Grade:               0%               0%               0%               0%
Parking/Hr:          No               No               No               No
Bus Stp/Hr:           0                0                0                0
Area Type:    < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:          0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:           0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     5    5     5     5    5     5     1 xxxx  xxxx     1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Hev Veh Adj: 0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
Grade Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Parking Adj: 1.00 1.00  1.00  1.00 1.00  1.00  xxxx 1.00  1.00  xxxx 1.00  1.00
Bus Stp Adj: 1.00 1.00  1.00  1.00 1.00  1.00  xxxx 1.00  1.00  xxxx 1.00  1.00
Area Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
RT Adj:      0.94 0.94  0.94  0.96 0.96  0.96  xxxx 1.00  1.00  xxxx 1.00  1.00
LT Adj:      0.88 0.88  0.88  0.79 0.79  0.79  0.95 xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.81 0.81  0.81  0.74 0.74  0.74  0.93 0.98  0.98  0.93 0.98  0.98
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 0.95  0.95  1.00 0.95  0.95
Fnl Sat Adj: 0.81 0.81  0.81  0.74 0.74  0.74  0.93 0.93  0.93  0.93 0.93  0.93
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
```


Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	100	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	18.64	18.64	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	19.64	19.64	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	19.64	19.64	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	1	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	1	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	57	50	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	0.33	0.47	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	0.47	0.33	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	1.57	1.39	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	105	170	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	2.92	4.72	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	1.33	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	3.00	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	2.95	3.48	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	0.74	0.74	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	5.10	8.69	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	14.54	10.95	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	1.07	2.60	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	0.53	0.67	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	1.56	1.65	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	1.05	1.96	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	0.14	0.15	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	0.88	0.79	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	0.88	0.79	xxxxxx	xxxxxx

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.20	0.20	0.20	0.20	0.20	0.20	0.06	0.60	0.60	0.11	0.65	0.65
ArrivalType:		4			4			4			4	
ProgFactor:	0.96	0.96	0.96	0.94	0.94	0.94	0.99	0.60	0.60	0.98	0.46	0.46
Q1:	4.1	4.1	4.1	2.4	2.4	2.4	1.5	6.3	6.3	2.9	4.3	4.3
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	1.2	1.2	1.2	0.6	0.6	0.6	1.0	1.3	1.3	1.2	1.1	1.1
HCM2KQueue:	5.3	5.3	5.3	3.0	3.0	3.0	2.5	7.5	7.5	4.0	5.4	5.4
70th%Factor:	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.18	1.18	1.19	1.19	1.19
HCM2k70thQ:	6.3	6.3	6.3	3.6	3.6	3.6	3.0	8.9	8.9	4.8	6.4	6.4
85th%Factor:	1.55	1.55	1.55	1.57	1.57	1.57	1.58	1.53	1.53	1.56	1.55	1.55
HCM2k85thQ:	8.2	8.2	8.2	4.7	4.7	4.7	3.9	11.5	11.5	6.3	8.3	8.3
90th%Factor:	1.71	1.71	1.71	1.74	1.74	1.74	1.75	1.67	1.67	1.73	1.71	1.71
HCM2k90thQ:	9.0	9.0	9.0	5.2	5.2	5.2	4.4	12.6	12.6	6.9	9.1	9.1
95th%Factor:	1.95	1.95	1.95	2.01	2.01	2.01	2.02	1.90	1.90	1.98	1.95	1.95
HCM2k95thQ:	10.3	10.3	10.3	6.0	6.0	6.0	5.1	14.2	14.2	7.9	10.4	10.4
98th%Factor:	2.37	2.37	2.37	2.49	2.49	2.49	2.53	2.26	2.26	2.43	2.36	2.36
HCM2k98thQ:	12.5	12.5	12.5	7.5	7.5	7.5	6.3	17.0	17.0	9.8	12.7	12.7

Cumul No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 1.185
Loss Time (sec): 12 Average Delay (sec/veh): 94.6
Optimal Cycle: 180 Level Of Service: F

Street Name:	West Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 2	0 1	2	0 2	0 1	2	0 3	1 0	2	0 3	1 0
Volume Module:	PM Peak Hour											
Base Vol:	770	782	112	140	713	405	663	1645	487	166	1629	96
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	770	782	112	140	713	405	663	1645	487	166	1629	96
Added Vol:	28	0	87	31	0	0	0	174	42	68	120	21
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	798	782	199	171	713	405	663	1819	529	234	1749	117
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	867	850	216	186	775	440	721	1977	575	254	1901	127
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	867	850	216	186	775	440	721	1977	575	254	1901	127
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	867	850	216	186	775	440	721	1977	575	254	1901	127
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.86	0.86	0.90	0.88	0.88
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.10	0.90	2.00	3.75	0.25
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	5072	1475	3432	6296	421
Capacity Analysis Module:												
Vol/Sat:	0.25	0.24	0.14	0.05	0.22	0.28	0.21	0.39	0.39	0.07	0.30	0.30
Crit Moves:	****					****	****				****	
Green/Cycle:	0.21	0.37	0.37	0.08	0.23	0.23	0.18	0.36	0.36	0.07	0.25	0.25
Volume/Cap:	1.19	0.66	0.37	0.66	0.93	1.19	1.19	1.07	1.07	1.07	1.19	1.19
Delay/Veh:	136.2	27.7	23.7	50.1	54.7	145.6	140.3	73.8	73.8	126.0	127	126.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	136.2	27.7	23.7	50.1	54.7	145.6	140.3	73.8	73.8	126.0	127	126.8
LOS by Move:	F	C	C	D	D	F	F	E	E	F	F	F
HCM2k95thQ:	968	480	202	202	719	1035	910	1293	1293	296	1167	1167

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	0 1		2	0 2	0 1		2	0 3	1 0		2	0 3	1 0	
Lane Group:	L	T	R		L	T	R		L	RT	RT		L	RT	RT	
#LnsInGrps:	2	2	1		2	2	1		2	4	4		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.97	0.97		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.95	0.95		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.86	0.86		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.21	0.37	0.37		0.08	0.23	0.23		0.18	0.36	0.36		0.07	0.25	0.25	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.90	0.85		0.99	0.99	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q1:	12.4	9.4	3.8		2.6	11.0	12.2		10.3	19.5	19.5		3.6	15.5	15.5	
UpstreamVC:	0.03	0.03	0.03		0.00	0.00	0.00		0.00	0.00	0.00		0.07	0.07	0.07	
UpstreamAdj:	1.00	1.00	1.00		0.00	0.00	0.00		0.00	0.00	0.00		1.00	1.00	1.00	
EarlyArrAdj:	0.41	0.58	0.53		1.00	1.00	1.00		1.00	1.00	1.00		0.21	0.47	0.47	
Q2:	10.8	1.1	0.3		1.5	5.5	12.9		11.3	12.8	12.8		2.5	13.3	13.3	
HCM2KQueue:	23.3	10.5	4.1		4.1	16.5	25.1		21.7	32.3	32.3		6.1	28.8	28.8	
70th%Factor:	1.16	1.18	1.19		1.19	1.17	1.15		1.16	1.14	1.14		1.19	1.15	1.15	
HCM2k70thQ:	26.9	12.3	4.9		4.9	19.3	28.9		25.1	37.0	37.0		7.3	33.1	33.1	
85th%Factor:	1.44	1.51	1.56		1.56	1.47	1.43		1.45	1.40	1.40		1.54	1.41	1.41	
HCM2k85thQ:	33.5	15.8	6.4		6.4	24.4	35.9		31.3	45.3	45.3		9.5	40.7	40.7	
90th%Factor:	1.53	1.64	1.73		1.73	1.57	1.51		1.54	1.48	1.48		1.69	1.49	1.49	
HCM2k90thQ:	35.5	17.1	7.0		7.1	26.1	38.0		33.3	47.8	47.8		10.4	43.0	43.0	
95th%Factor:	1.66	1.84	1.98		1.98	1.74	1.65		1.68	1.60	1.60		1.93	1.62	1.62	
HCM2k95thQ:	38.7	19.2	8.1		8.1	28.8	41.4		36.4	51.7	51.7		11.8	46.7	46.7	
98th%Factor:	1.87	2.15	2.43		2.43	1.98	1.85		1.89	1.78	1.78		2.32	1.81	1.81	
HCM2k98thQ:	43.4	22.4	9.9		9.9	32.8	46.3		40.9	57.6	57.6		14.3	52.1	52.1	

Cumul No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	1.108
Loss Time (sec):	12	Average Delay (sec/veh):	71.1
Optimal Cycle:	180	Level Of Service:	E

Street Name:	Ham Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	4 0	1	1 0	4 0	1
Volume Module:	PM Peak Hour											
Base Vol:	9	35	24	419	19	67	153	1779	5	31	1822	416
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	35	24	419	19	67	153	1779	5	31	1822	416
Added Vol:	142	70	145	30	98	0	0	123	192	223	67	17
Pass-By:	56	0	55	0	0	0	0	-53	53	53	-53	0
Initial Fut:	207	105	224	449	117	67	153	1849	250	307	1836	433
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	225	114	243	488	127	73	166	2010	272	334	1996	471
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	225	114	243	488	127	73	166	2010	272	334	1996	471
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	225	114	243	488	127	73	166	2010	272	334	1996	471
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.88	0.88	0.93	0.93	0.93	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	0.32	0.68	1.00	0.64	0.36	1.00	4.00	1.00	1.00	4.00	1.00
Final Sat.:	1769	534	1138	1769	1119	641	1769	6778	1583	1769	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.13	0.21	0.21	0.28	0.11	0.11	0.09	0.30	0.17	0.19	0.29	0.30
Crit Moves:		****		****				****		****		
Green/Cycle:	0.23	0.19	0.19	0.25	0.21	0.21	0.11	0.27	0.27	0.17	0.33	0.33
Volume/Cap:	0.54	1.11	1.11	1.11	0.54	0.54	0.89	1.11	0.64	1.11	0.88	0.89
Delay/Veh:	35.2	123	122.7	113.1	37.0	37.0	81.9	93.8	35.7	125.5	36.2	49.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.2	123	122.7	113.1	37.0	37.0	81.9	93.8	35.7	125.5	36.2	49.2
LOS by Move:	D	F	F	F	D	D	F	F	D	F	D	D
HCM2k95thQ:	304	817	817	1027	283	283	288	1045	336	676	726	648

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	0 1	0	1 0	1 0	0 1	0	1 0	1 0	4 0	1	1 0	1 0	4 0	1	1 0
Lane Group:	L	RT	RT		L	RT	RT		L	T	R		L	T	R	
#LnsInGrps:	1	1	1		1	1	1		1	4	1		1	4	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.90	0.90		xxxx	0.95	0.95		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.88	0.88		0.93	0.93	0.93		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.91	1.00		1.00	0.91	1.00	
Fnl Sat Adj:	0.93	0.88	0.88		0.93	0.93	0.93		0.93	0.89	0.83		0.93	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.23	0.19	0.19	0.25	0.21	0.21	0.11	0.27	0.27	0.17	0.33	0.33
ArrivalType:		4			4			4			4	
ProgFactor:	0.94	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.94	1.00	0.97	0.97
Q1:	5.2	9.9	9.9	13.6	4.7	4.7	4.5	15.3	6.3	9.3	13.9	12.1
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.10	0.50	0.50	0.50
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.86	0.86	0.86
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.27	0.48	0.44	0.31	0.47	0.43
Q2:	1.1	9.2	9.2	11.3	1.1	1.1	1.4	10.0	0.8	6.2	2.8	2.6
HCM2KQueue:	6.3	19.1	19.1	24.9	5.9	5.9	6.0	25.4	7.1	15.4	16.7	14.7
70th%Factor:	1.19	1.16	1.16	1.15	1.19	1.19	1.19	1.15	1.18	1.17	1.17	1.17
HCM2k70thQ:	7.5	22.2	22.2	28.7	7.0	7.0	7.1	29.3	8.3	18.0	19.5	17.2
85th%Factor:	1.54	1.46	1.46	1.43	1.55	1.55	1.55	1.43	1.54	1.48	1.47	1.48
HCM2k85thQ:	9.8	27.9	27.9	35.6	9.1	9.1	9.2	36.3	10.8	22.8	24.6	21.8
90th%Factor:	1.69	1.55	1.55	1.52	1.70	1.70	1.70	1.51	1.68	1.59	1.57	1.59
HCM2k90thQ:	10.7	29.7	29.7	37.7	10.0	10.0	10.1	38.4	11.9	24.4	26.3	23.4
95th%Factor:	1.92	1.71	1.71	1.65	1.93	1.93	1.93	1.65	1.91	1.75	1.74	1.77
HCM2k95thQ:	12.2	32.7	32.7	41.1	11.3	11.3	11.5	41.8	13.4	27.1	29.1	25.9
98th%Factor:	2.31	1.93	1.93	1.85	2.34	2.34	2.33	1.84	2.28	2.01	1.98	2.02
HCM2k98thQ:	14.6	36.9	36.9	46.0	13.7	13.7	13.9	46.7	16.1	30.9	33.1	29.7

Cumul No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St J

Cycle (sec): 100 Critical Vol./Cap.(X): 0.508
Loss Time (sec): 12 Average Delay (sec/veh): 7.9
Optimal Cycle: 41 Level Of Service: A

Street Name:	Leach Road/Street J						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	0 1	1	0 0	1 0	1	0 3	1 0	1	0 3	1 0
Volume Module: PM Peak Hour												
Base Vol:	0	0	0	0	0	4	0	1777	0	0	2218	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	4	0	1777	0	0	2218	4
Added Vol:	71	0	64	0	0	0	0	176	121	110	237	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	71	0	64	0	0	4	0	1953	121	110	2455	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	77	0	70	0	0	4	0	2123	132	120	2668	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	77	0	70	0	0	4	0	2123	132	120	2668	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	77	0	70	0	0	4	0	2123	132	120	2668	4
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	1.00	1.00	0.83	1.00	0.88	0.88	0.93	0.89	0.89
Lanes:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	3.77	0.23	1.00	3.99	0.01
Final Sat.:	1769	1900	1583	1900	0	1583	1900	6325	392	1769	6767	11
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.04	0.00	0.00	0.00	0.00	0.34	0.34	0.07	0.39	0.39
Crit Moves:	****				****			****		****		
Green/Cycle:	0.09	0.00	0.09	0.00	0.00	0.00	0.00	0.66	0.66	0.13	0.79	0.79
Volume/Cap:	0.51	0.00	0.51	0.00	0.00	xxxx	0.00	0.51	0.51	0.51	0.50	0.50
Delay/Veh:	46.5	0.0	47.0	0.0	0.0	0.0	0.0	8.7	8.7	42.1	3.6	3.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.5	0.0	47.0	0.0	0.0	0.0	0.0	8.7	8.7	42.1	3.6	3.6
LOS by Move:	D	A	D	A	A	A	A	A	A	D	A	A
HCM2k95thQ:	148	0	139	0	0	6	0	188	188	197	50	50

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	1	0	1	0	0	1	0	1	0	3	1	0	1	0
Lane Group:	L	T	R		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	4	4		1	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx			1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00	1.00	1.00		1.00			
Hev Veh Adj:	0.98	xxxx	0.98	xxxx	xxxx	0.98	xxxx	0.98	0.98	0.98	0.98		0.98			
Grade Adj:	1.00	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00	1.00	1.00		1.00			
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00		1.00			
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00		1.00			
Area Adj:	1.00	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00	1.00	1.00		1.00			
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	0.99	0.99	xxxx	1.00		1.00			
LT Adj:	0.95	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.95	xxxx		xxxxx			
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00			
HCM Sat Adj:	0.93	1.00	0.83	1.00	1.00	0.83	1.00	0.97	0.97	0.93	0.98		0.98			
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00			
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91		0.91			
Fnl Sat Adj:	0.93	1.00	0.83	1.00	1.00	0.83	1.00	0.88	0.88	0.93	0.89		0.89			
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00		1.00			

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.09	0.00	0.09		0.00	0.00	0.00		0.00	0.66	0.66		0.13	0.79	0.79	
ArrivalType:	4				4				4				4			
ProgFactor:	0.98	1.00	0.98		1.00	1.00	1.00		0.42	0.42			0.97	0.00	0.00	
Q1:	2.0	0.0	1.8		0.0	0.0	0.1		0.0	3.7	3.7		3.0	0.0	0.0	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	1.11	1.11		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.09	0.09		0.00	0.00	0.00	
EarlyArrAdj:	1.00	0.00	1.00		0.00	0.00	0.00		0.00	0.07	0.07		1.00	1.00	1.00	
Q2:	0.9	0.0	0.9		0.0	0.0	0.0		0.0	0.1	0.1		1.0	1.0	1.0	
HCM2KQueue:	3.0	0.0	2.8		0.0	0.0	0.1		0.0	3.8	3.8		4.0	1.0	1.0	
70th%Factor:	1.19	1.20	1.19		1.20	1.20	1.20		1.20	1.19	1.19		1.19	1.20	1.20	
HCM2k70thQ:	3.5	0.0	3.3		0.0	0.0	0.1		0.0	4.5	4.5		4.7	1.2	1.2	
85th%Factor:	1.57	1.60	1.57		1.60	1.60	1.60		1.60	1.56	1.56		1.56	1.59	1.59	
HCM2k85thQ:	4.6	0.0	4.3		0.0	0.0	0.2		0.0	5.9	5.9		6.2	1.6	1.6	
90th%Factor:	1.75	1.80	1.75		1.80	1.80	1.80		1.80	1.73	1.73		1.73	1.78	1.78	
HCM2k90thQ:	5.2	0.0	4.8		0.0	0.0	0.2		0.0	6.5	6.5		6.9	1.7	1.7	
95th%Factor:	2.01	2.10	2.01		2.10	2.10	2.10		2.10	1.99	1.99		1.98	2.07	2.07	
HCM2k95thQ:	5.9	0.0	5.6		0.0	0.0	0.3		0.0	7.5	7.5		7.9	2.0	2.0	
98th%Factor:	2.50	2.70	2.51		2.70	2.70	2.69		2.70	2.45	2.45		2.44	2.63	2.63	
HCM2k98thQ:	7.4	0.0	6.9		0.0	0.0	0.3		0.0	9.3	9.3		9.7	2.6	2.6	

Cumul No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Cycle (sec):	100	Critical Vol./Cap.(X):	0.865
Loss Time (sec):	12	Average Delay (sec/veh):	35.0
Optimal Cycle:	96	Level Of Service:	C

Street Name:	Micke Grove Road/Holman Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	1	0	2	0	1	2	0
Volume Module:	PM Peak Hour											
Base Vol:	509	208	52	52	208	214	341	1485	344	82	1461	35
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	509	208	52	52	208	214	341	1485	344	82	1461	35
Added Vol:	38	0	0	0	0	58	39	172	28	0	251	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	547	208	52	52	208	272	380	1657	372	82	1712	35
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	595	226	57	57	226	296	413	1801	404	89	1861	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	595	226	57	57	226	296	413	1801	404	89	1861	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	595	226	57	57	226	296	413	1801	404	89	1861	38
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.89
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	3.92	0.08
Final Sat.:	3432	3538	1583	1769	3538	1583	3432	6778	1583	3432	6622	135
Capacity Analysis Module:												
Vol/Sat:	0.17	0.06	0.04	0.03	0.06	0.19	0.12	0.27	0.26	0.03	0.28	0.28
Crit Moves:	****					****	****				****	
Green/Cycle:	0.20	0.28	0.28	0.14	0.22	0.22	0.14	0.42	0.42	0.04	0.32	0.32
Volume/Cap:	0.87	0.23	0.13	0.23	0.30	0.87	0.87	0.63	0.60	0.63	0.87	0.87
Delay/Veh:	49.8	28.0	27.2	38.8	33.1	57.8	57.3	23.2	24.0	55.9	35.6	35.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.8	28.0	27.2	38.8	33.1	57.8	57.3	23.2	24.0	55.9	35.6	35.6
LOS by Move:	D	C	C	D	C	E	E	C	C	E	D	D
HCM2k95thQ:	543	130	61	84	150	528	429	499	415	68	621	621

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0 1	1	0	2	0 1	2	0	4	0 1	2	0	3	1 0
Lane Group:	L		T	R	L		T	R	L		T	R	L		RT	RT
#LnsInGrps:	2		2	1	1		2	1	2		4	1	2		4	4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		1.00	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.93	0.83		0.93	0.93	0.83		0.90	0.89	0.83		0.90	0.89	0.89	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.20	0.28	0.28	0.14	0.22	0.22	0.14	0.42	0.42	0.04	0.32	0.32
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.89	0.88	0.96	0.93	0.98	0.99	0.86	0.85	0.99	0.97	0.97
Q1:	8.1	2.3	1.0	1.3	2.6	7.8	5.7	9.3	7.4	1.2	13.1	13.1
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.92	0.92	0.92
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.26	0.26
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.04	0.14	0.14
Q2:	3.9	0.3	0.1	0.3	0.4	3.8	3.5	1.6	1.5	0.1	0.8	0.8
HCM2KQueue:	12.0	2.6	1.2	1.6	3.0	11.6	9.2	10.9	8.9	1.3	14.0	14.0
70th%Factor:	1.17	1.19	1.20	1.20	1.19	1.17	1.18	1.18	1.18	1.20	1.17	1.17
HCM2k70thQ:	14.1	3.1	1.4	2.0	3.6	13.7	10.9	12.8	10.5	1.6	16.4	16.4
85th%Factor:	1.50	1.58	1.59	1.58	1.57	1.50	1.52	1.51	1.52	1.59	1.49	1.49
HCM2k85thQ:	18.0	4.1	1.9	2.6	4.7	17.5	14.0	16.5	13.6	2.1	20.8	20.8
90th%Factor:	1.62	1.75	1.78	1.77	1.74	1.62	1.65	1.63	1.66	1.77	1.60	1.60
HCM2k90thQ:	19.4	4.5	2.1	2.9	5.2	18.9	15.2	17.8	14.7	2.3	22.4	22.4
95th%Factor:	1.81	2.02	2.06	2.05	2.01	1.81	1.86	1.83	1.87	2.06	1.78	1.78
HCM2k95thQ:	21.7	5.2	2.4	3.3	6.0	21.1	17.2	19.9	16.6	2.7	24.8	24.8
98th%Factor:	2.10	2.52	2.61	2.58	2.49	2.11	2.19	2.13	2.20	2.60	2.04	2.04
HCM2k98thQ:	25.2	6.5	3.1	4.2	7.5	24.5	20.2	23.3	19.6	3.4	28.5	28.5

Cumul No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Eight Mile & SR 99 W Frontage

Cycle (sec):	100	Critical Vol./Cap.(X):	0.925
Loss Time (sec):	12	Average Delay (sec/veh):	32.6
Optimal Cycle:	122	Level Of Service:	C

Street Name:	SR 99 West Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0
Volume Module:PM Peak Hour												
Base Vol:	2	10	155	338	3	2	6	1618	1	130	1585	395
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	10	155	338	3	2	6	1618	1	130	1585	395
Added Vol:	0	0	0	0	0	0	0	172	0	0	251	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	2	10	155	338	3	2	6	1790	1	130	1836	395
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	2	11	168	367	3	2	7	1946	1	141	1996	429
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	11	168	367	3	2	7	1946	1	141	1996	429
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	2	11	168	367	3	2	7	1946	1	141	1996	429
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.84	0.84	0.93	0.92	0.92	0.93	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	0.06	0.94	1.00	0.60	0.40	1.00	3.00	1.00	2.00	2.47	0.53
Final Sat.:	1769	97	1503	1769	1050	700	1769	5083	1583	3432	4070	876
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.11	0.21	0.00	0.00	0.00	0.38	0.00	0.04	0.49	0.49
Crit Moves:		****		****			****				****	
Green/Cycle:	0.10	0.12	0.12	0.22	0.25	0.25	0.00	0.48	0.48	0.05	0.53	0.53
Volume/Cap:	0.01	0.92	0.92	0.92	0.01	0.01	0.92	0.79	0.00	0.79	0.92	0.92
Delay/Veh:	40.8	87.3	87.3	65.1	28.4	28.4	339.0	23.6	13.4	68.1	27.9	27.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.8	87.3	87.3	65.1	28.4	28.4	339.0	23.6	13.4	68.1	27.9	27.9
LOS by Move:	D	F	F	E	C	C	F	C	B	E	C	C
HCM2k95thQ:	3	412	412	662	6	6	16	708	1	125	1059	1059

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 0	1	0	1	0 0	1	0	1	0 3	0	1	2	0 2	1	0
Lane Group:	L	RT		RT	L	RT		RT	L	T		R	L	RT		RT
#LnsInGrps:	1	1		1	1	1		1	1	3		1	2	3		3
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.86	0.86		xxxx	0.94	0.94		xxxx	xxxx	0.85		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.84	0.84		0.93	0.92	0.92		0.93	0.98	0.83		0.93	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.84	0.84		0.93	0.92	0.92		0.93	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.10	0.12	0.12		0.22	0.25	0.25		0.00	0.48	0.48		0.05	0.53	0.53	
ArrivalType:		4				4				4				4		
ProgFactor:	0.96	1.00	1.00		0.99	0.89	0.89		1.00	0.87	0.69		1.00	0.92	0.92	
Q1:	0.1	4.9	4.9		9.9	0.1	0.1		0.2	14.4	0.0		2.0	20.9	20.9	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.63	0.63	0.63		0.51	0.51	0.51	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.74	0.74	0.74		0.85	0.85	0.85	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.03	0.51	0.46		0.15	0.61	0.61	
Q2:	0.0	3.9	3.9		5.2	0.0	0.0		0.1	1.8	0.0		0.5	4.9	4.9	
HCM2KQueue:	0.1	8.8	8.8		15.0	0.1	0.1		0.3	16.2	0.0		2.5	25.8	25.8	
70th%Factor:	1.20	1.18	1.18		1.17	1.20	1.20		1.20	1.17	1.20		1.19	1.15	1.15	
HCM2k70thQ:	0.1	10.4	10.4		17.6	0.1	0.1		0.4	19.0	0.0		3.0	29.7	29.7	
85th%Factor:	1.60	1.52	1.52		1.48	1.60	1.60		1.60	1.47	1.60		1.58	1.43	1.43	
HCM2k85thQ:	0.1	13.4	13.4		22.3	0.2	0.2		0.5	24.0	0.0		3.9	36.8	36.8	
90th%Factor:	1.80	1.66	1.66		1.59	1.80	1.80		1.79	1.58	1.80		1.75	1.51	1.51	
HCM2k90thQ:	0.1	14.6	14.6		23.9	0.2	0.2		0.5	25.6	0.0		4.3	38.9	38.9	
95th%Factor:	2.10	1.87	1.87		1.76	2.10	2.10		2.09	1.74	2.10		2.02	1.64	1.64	
HCM2k95thQ:	0.1	16.5	16.5		26.5	0.2	0.2		0.6	28.3	0.0		5.0	42.4	42.4	
98th%Factor:	2.69	2.21	2.21		2.01	2.69	2.69		2.68	1.99	2.70		2.53	1.84	1.84	
HCM2k98thQ:	0.2	19.5	19.5		30.3	0.3	0.3		0.8	32.3	0.0		6.2	47.4	47.4	

Cumul No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Eight Mile & SR 99 E Frontage

Cycle (sec):	100	Critical Vol./Cap.(X):	0.239
Loss Time (sec):	12	Average Delay (sec/veh):	3.9
Optimal Cycle:	29	Level Of Service:	A

Street Name:	SR 99 East Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0
	2	0	1	1	0	1	0	1	1	0		
Volume Module:	PM Peak Hour											
Base Vol:	9	2	6	8	1	5	9	601	5	8	600	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	2	6	8	1	5	9	601	5	8	600	6
Added Vol:	0	0	0	0	0	0	0	20	0	0	29	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	2	6	8	1	5	9	621	5	8	629	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	10	2	7	9	1	5	10	675	5	9	684	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	2	7	9	1	5	10	675	5	9	684	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	10	2	7	9	1	5	10	675	5	9	684	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.87	0.87	0.93	0.86	0.86	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	1.00	0.25	0.75	1.00	0.17	0.83	1.00	2.00	1.00	1.00	1.98	0.02
Final Sat.:	1769	413	1240	1769	272	1358	1769	3538	1583	1769	3501	33
Capacity Analysis Module:												
Vol/Sat:	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.19	0.00	0.00	0.20	0.20
Crit Moves:	****				****		****				****	
Green/Cycle:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.82	0.82	0.02	0.82	0.82
Volume/Cap:	0.24	0.26	0.26	0.26	0.24	0.24	0.24	0.23	0.00	0.23	0.24	0.24
Delay/Veh:	51.0	52.1	52.1	52.3	53.0	53.0	51.0	2.1	1.6	51.3	2.1	2.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.0	52.1	52.1	52.3	53.0	53.0	51.0	2.1	1.6	51.3	2.1	2.1
LOS by Move:	D	D	D	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	29	29	29	29	24	24	16	15	0	27	16	16

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	1 0	1	0	0	1 0	1	0	2	0 1	1	0	1	1 0
Lane Group:	L		RT	RT	L		RT	RT	L		T	R	L		RT	RT
#LnsInGrps:	1		1	1	1		1	1	1		2	1	1		2	2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.89	0.89		xxxx	0.88	0.88		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.87	0.87		0.93	0.86	0.86		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	0.95	
Fnl Sat Adj:	0.93	0.87	0.87		0.93	0.86	0.86		0.93	0.93	0.83		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.82	0.82	0.02	0.82	0.82
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.00	0.00	0.99	0.00	0.00
Q1:	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.0	0.0	0.2	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.27	0.27	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.97	0.97	0.97	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.11	0.92	0.84	1.00	1.00	1.00
Q2:	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.3	0.0	0.3	0.3	0.3
HCM2KQueue:	0.6	0.5	0.5	0.5	0.5	0.5	0.3	0.3	0.0	0.5	0.3	0.3
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	0.7	0.7	0.7	0.7	0.6	0.6	0.4	0.3	0.0	0.6	0.4	0.4
85th%Factor:	1.59	1.59	1.59	1.59	1.60	1.60	1.60	1.60	1.60	1.59	1.60	1.60
HCM2k85thQ:	0.9	0.9	0.9	0.9	0.7	0.7	0.5	0.4	0.0	0.8	0.5	0.5
90th%Factor:	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.80	1.79	1.79	1.79
HCM2k90thQ:	1.0	1.0	1.0	1.0	0.8	0.8	0.5	0.5	0.0	0.9	0.6	0.6
95th%Factor:	2.08	2.08	2.08	2.08	2.08	2.08	2.09	2.09	2.10	2.08	2.09	2.09
HCM2k95thQ:	1.2	1.1	1.1	1.1	1.0	1.0	0.6	0.6	0.0	1.1	0.7	0.7
98th%Factor:	2.66	2.66	2.66	2.66	2.67	2.67	2.68	2.68	2.70	2.66	2.68	2.68
HCM2k98thQ:	1.5	1.5	1.5	1.5	1.2	1.2	0.8	0.7	0.0	1.4	0.8	0.8

Cumul No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 West & L.C.MarkTaylor/Marlette

Cycle (sec): 100 Critical Vol./Cap.(X): 0.594
Loss Time (sec): 12 Average Delay (sec/veh): 27.8
Optimal Cycle: 48 Level Of Service: C

Street Name:	West Lane						Lt.Col.Mark Taylor/Marlette Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 1	0	2 0	3 1	0	1 0	2 0	1	1 0	2 0	1
Volume Module:	PM Peak Hour											
Base Vol:	245	1427	61	66	1185	111	196	146	152	86	139	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	245	1427	61	66	1185	111	196	146	152	86	139	47
Added Vol:	0	73	130	47	50	4	5	67	0	88	45	31
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	245	1500	191	113	1235	115	201	213	152	174	184	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	266	1630	208	123	1342	125	218	232	165	189	200	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	266	1630	208	123	1342	125	218	232	165	189	200	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	266	1630	208	123	1342	125	218	232	165	189	200	85
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.88	0.88	0.90	0.88	0.88	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	2.00	3.55	0.45	2.00	3.66	0.34	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3432	5910	753	3432	6120	570	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.08	0.28	0.28	0.04	0.22	0.22	0.12	0.07	0.10	0.11	0.06	0.05
Crit Moves:		****		****					****	****		
Green/Cycle:	0.14	0.46	0.46	0.06	0.39	0.39	0.24	0.18	0.18	0.18	0.11	0.11
Volume/Cap:	0.57	0.59	0.59	0.59	0.57	0.57	0.51	0.37	0.59	0.59	0.51	0.48
Delay/Veh:	42.0	20.1	20.1	50.4	24.3	24.3	33.6	36.7	41.4	40.7	42.9	43.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.0	20.1	20.1	50.4	24.3	24.3	33.6	36.7	41.4	40.7	42.9	43.7
LOS by Move:	D	C	C	D	C	C	C	D	D	D	D	D
HCM2k95thQ:	229	456	456	100	395	395	285	171	263	290	181	151

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #16 West & L.C.MarkTaylor/Marlette

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 3	1	0	2	0 3	1	0	1	0 2	0	1	1	0 2	0	1
Lane Group:	L	RT		RT	L	RT		RT	L	T		R	L	T		R
#LnsInGrps:	2	4		4	2	4		4	1	2		1	1	2		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.98	0.98		xxxx	0.99	0.99		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.96	0.96		0.93	0.97	0.97		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	0.91		0.97	0.91	0.91		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.90	0.88	0.88		0.90	0.88	0.88		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #16 West & L.C.MarkTaylor/Marlette

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.14	0.46	0.46		0.06	0.39	0.39		0.24	0.18	0.18		0.18	0.11	0.11	
ArrivalType:		4				4				4				4		
ProgFactor:	0.97	0.81	0.81		0.99	0.87	0.87		0.94	0.95	0.97		0.97	0.98	0.98	
Q1:	3.5	8.5	8.5		1.7	7.7	7.7		4.9	2.8	4.1		4.7	2.7	2.2	
UpstreamVC:	0.00	0.00	0.00		0.03	0.03	0.03		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		1.00	1.00	1.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		0.19	0.60	0.60		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	1.2	1.4	1.4		0.3	0.8	0.8		1.0	0.6	1.3		1.4	1.0	0.9	
HCM2KQueue:	4.7	9.9	9.9		2.0	8.4	8.4		5.9	3.4	5.4		6.0	3.6	3.0	
70th%Factor:	1.19	1.18	1.18		1.20	1.18	1.18		1.19	1.19	1.19		1.19	1.19	1.19	
HCM2k70thQ:	5.6	11.6	11.6		2.3	9.9	9.9		7.0	4.1	6.4		7.1	4.3	3.6	
85th%Factor:	1.56	1.52	1.52		1.58	1.53	1.53		1.55	1.57	1.55		1.55	1.57	1.57	
HCM2k85thQ:	7.3	15.0	15.0		3.1	12.9	12.9		9.1	5.4	8.4		9.3	5.7	4.7	
90th%Factor:	1.72	1.64	1.64		1.76	1.66	1.66		1.70	1.74	1.71		1.70	1.73	1.74	
HCM2k90thQ:	8.0	16.2	16.2		3.5	14.0	14.0		10.0	5.9	9.2		10.2	6.3	5.3	
95th%Factor:	1.96	1.85	1.85		2.04	1.88	1.88		1.93	2.00	1.94		1.93	1.99	2.01	
HCM2k95thQ:	9.2	18.2	18.2		4.0	15.8	15.8		11.4	6.8	10.5		11.6	7.3	6.1	
98th%Factor:	2.40	2.17	2.17		2.56	2.22	2.22		2.34	2.47	2.36		2.33	2.46	2.49	
HCM2k98thQ:	11.2	21.4	21.4		5.0	18.7	18.7		13.8	8.4	12.8		14.0	9.0	7.5	

Cumul No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

Cycle (sec):	100	Critical Vol./Cap.(X):	1.194
Loss Time (sec):	12	Average Delay (sec/veh):	103.5
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Holman Road											Lt. Col. Mark Taylor Street											
Approach:	North Bound				South Bound				East Bound				West Bound										
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected							
Rights:	Include					Include					Include					Include							
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0				
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0				
Lanes:	1	0	3	0	1	1	0	3	0	1	1	0	1	0	1	1	0	0	1	0				
Volume Module:	PM Peak Hour																						
Base Vol:	59		463		278	315		290		28	55		571		30	335		569		257				
Growth Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00				
Initial Bse:	59		463		278	315		290		28	55		571		30	335		569		257				
Added Vol:	25		3		0	12		2		22	15		116		17	0		174		13				
PasserByVol:	0		0		0	0		0		0	0		0		0	0		0		0				
Initial Fut:	84		466		278	327		292		50	70		687		47	335		743		270				
User Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00				
PHF Adj:	0.92		0.92		0.92	0.92		0.92		0.92	0.92		0.92		0.92	0.92		0.92		0.92				
PHF Volume:	91		507		302	355		317		54	76		747		51	364		808		293				
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0				
Reduced Vol:	91		507		302	355		317		54	76		747		51	364		808		293				
PCE Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00				
MLF Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00				
FinalVolume:	91		507		302	355		317		54	76		747		51	364		808		293				
Saturation Flow Module:																							
Sat/Lane:	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900		1900		1900				
Adjustment:	0.93		0.89		0.83	0.93		0.89		0.83	0.93		0.98		0.83	0.93		0.94		0.94				
Lanes:	1.00		3.00		1.00	1.00		3.00		1.00	1.00		1.00		1.00	1.00		0.73		0.27				
Final Sat.:	1769		5083		1583	1769		5083		1583	1769		1862		1583	1769		1311		476				
Capacity Analysis Module:																							
Vol/Sat:	0.05		0.10		0.19	0.20		0.06		0.03	0.04		0.40		0.03	0.21		0.62		0.62				
Crit Moves:					****	****					****							****					
Green/Cycle:	0.15		0.16		0.16	0.17		0.18		0.18	0.04		0.36		0.36	0.19		0.52		0.52				
Volume/Cap:	0.35		0.62		1.19	1.19		0.35		0.19	1.19		1.10		0.09	1.10		1.19		1.19				
Delay/Veh:	39.0		40.7		161.4	157.1		36.1		35.2	222.6		96.8		20.9	119.6		122		122.3				
User DelAdj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00				
AdjDel/Veh:	39.0		40.7		161.4	157.1		36.1		35.2	222.6		96.8		20.9	119.6		122		122.3				
LOS by Move:	D		D		F	F		D		D	F		F		C	F		F		F				
HCM2k95thQ:	117		248		687	888		160		74	211		1334		42	820		2209		2209				

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																									
Lanes:	1	0	3	0	1	1	0	3	0	1	1	0	1	0	1	1	0	0	1	0					
Lane Group:	L		T		R	L		T		R	L		T		R	L		RT		RT					
#LnsInGrps:	1		3		1	1		3		1	1		1		1	1		1		1					
HCM Ops Input Saturation Adj Module:																									
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12					
CrsswalkWid:			8					8					8					8							
% Hev Veh:			2					2					2					2							
Grade:			0%					0%					0%					0%							
Parking/Hr:			No					No					No					No							
Bus Stp/Hr:			0					0					0					0							
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																								
Cnft Ped/Hr:			0					0					0					0							
ExclusiveRT:			Include					Include					Include					Include							
% RT Prtct:			0					0					0					0							
HCM Ops f(lt) Adj Case Module:																									
f(lt) Case:	1		xxxx		xxxx	1		xxxx		xxxx	1		xxxx		xxxx	1		xxxx		xxxx					
HCM Ops Saturation Adj Module:																									
Ln Wid Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00					
Hev Veh Adj:	0.98		0.98		0.98	0.98		0.98		0.98	0.98		0.98		0.98	0.98		0.98		0.98					
Grade Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00					
Parking Adj:	xxxx		xxxx		1.00	xxxx		xxxx		1.00	xxxx		xxxx		1.00	xxxx		1.00		1.00					
Bus Stp Adj:	xxxx		xxxx		1.00	xxxx		xxxx		1.00	xxxx		xxxx		1.00	xxxx		1.00		1.00					
Area Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00					
RT Adj:	xxxx		xxxx		0.85	xxxx		xxxx		0.85	xxxx		xxxx		0.85	xxxx		0.96		0.96					
LT Adj:	0.95		xxxx		xxxxx	0.95		xxxx		xxxxx	0.95		xxxx		xxxxx	0.95		xxxx		xxxxx					
PedBike Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00					
HCM Sat Adj:	0.93		0.98		0.83	0.93		0.98		0.83	0.93		0.98		0.83	0.93		0.94		0.94					
Usr Sat Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00					
MLF Sat Adj:	1.00		0.91		1.00	1.00		0.91		1.00	1.00		1.00		1.00	1.00		1.00		1.00					
Fnl Sat Adj:	0.93		0.89		0.83	0.93		0.89		0.83	0.93		0.98		0.83	0.93		0.94		0.94					
Delay Adjustment Factor Module:																									
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																								
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																								
DelAdjFctr:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00					

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.15	0.16	0.16	0.17	0.18	0.18	0.04	0.36	0.36	0.19	0.52	0.52
ArrivalType:		4			4			4			4	
ProgFactor:	0.96	0.97	1.00	1.00	0.95	0.94	1.00	1.00	0.82	1.00	1.00	1.00
Q1:	2.2	4.7	8.4	9.9	2.7	1.2	2.1	20.7	0.8	10.1	30.6	30.6
UpstreamVC:	0.67	0.67	0.67	0.00	0.00	0.00	0.05	0.05	0.05	0.00	0.00	0.00
UpstreamAdj:	0.69	0.69	0.69	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
EarlyArrAdj:	0.23	0.24	0.22	1.00	1.00	1.00	0.14	0.58	0.53	1.00	1.00	1.00
Q2:	0.1	0.4	7.3	11.2	0.5	0.2	2.2	12.7	0.1	9.1	27.4	27.4
HCM2KQueue:	2.3	5.1	15.7	21.1	3.2	1.4	4.3	33.5	0.8	19.2	58.0	58.0
70th%Factor:	1.19	1.19	1.17	1.16	1.19	1.20	1.19	1.14	1.20	1.16	1.12	1.12
HCM2k70thQ:	2.8	6.0	18.3	24.4	3.8	1.7	5.1	38.3	1.0	22.3	65.1	65.1
85th%Factor:	1.58	1.55	1.48	1.45	1.57	1.59	1.56	1.40	1.59	1.46	1.34	1.34
HCM2k85thQ:	3.6	7.9	23.2	30.5	5.0	2.3	6.7	46.8	1.3	28.0	77.9	77.9
90th%Factor:	1.76	1.71	1.58	1.54	1.74	1.77	1.72	1.48	1.78	1.55	1.42	1.42
HCM2k90thQ:	4.0	8.7	24.8	32.4	5.6	2.5	7.4	49.4	1.5	29.9	82.5	82.5
95th%Factor:	2.03	1.95	1.75	1.69	2.00	2.05	1.97	1.59	2.07	1.71	1.52	1.52
HCM2k95thQ:	4.7	9.9	27.5	35.5	6.4	3.0	8.4	53.3	1.7	32.8	88.4	88.4
98th%Factor:	2.54	2.38	2.00	1.90	2.48	2.60	2.42	1.78	2.64	1.93	1.71	1.71
HCM2k98thQ:	5.8	12.1	31.4	40.0	7.9	3.7	10.4	59.5	2.1	37.1	99.2	99.2

Cumul No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.778
Loss Time (sec): 12 Average Delay (sec/veh): 31.8
Optimal Cycle: 72 Level Of Service: C

Street Name:	West Lane						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	2	0	1	2	0	2	0	1
Volume Module:	PM Peak Hour											
Base Vol:	433	1683	208	89	1362	79	155	330	291	278	277	62
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	433	1683	208	89	1362	79	155	330	291	278	277	62
Added Vol:	0	196	92	0	133	5	7	7	0	63	5	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	433	1879	300	89	1495	84	162	337	291	341	282	62
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	471	2042	326	97	1625	91	176	366	316	371	307	67
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	471	2042	326	97	1625	91	176	366	316	371	307	67
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	471	2042	326	97	1625	91	176	366	316	371	307	67
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.93	0.83	0.90	0.93	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	3538	1583	3432	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.14	0.30	0.21	0.03	0.24	0.06	0.05	0.10	0.20	0.11	0.09	0.04
Crit Moves:	****				****				****	****		
Green/Cycle:	0.18	0.44	0.44	0.04	0.31	0.31	0.15	0.26	0.26	0.14	0.25	0.25
Volume/Cap:	0.78	0.68	0.47	0.68	0.78	0.19	0.35	0.40	0.78	0.78	0.35	0.17
Delay/Veh:	45.7	22.9	20.0	59.9	33.4	25.6	38.8	31.1	43.7	49.5	31.2	29.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.7	22.9	20.0	59.9	33.4	25.6	38.8	31.1	43.7	49.5	31.2	29.7
LOS by Move:	D	C	C	E	C	C	D	C	D	D	C	C
HCM2k95thQ:	419	569	288	140	610	94	136	233	489	360	194	79

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	2	0	1	2	0	2	0	1
Lane Group:	L	T		R	L	T		R	L	T		R	L	T		R
#LnsInGrps:	2	4		1	2	4		1	2	2		1	2	2		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.95	1.00		0.97	0.95	1.00	
Fnl Sat Adj:	0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.93	0.83		0.90	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.18	0.44	0.44		0.04	0.31	0.31		0.15	0.26	0.26		0.14	0.25	0.25	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.86	0.80		1.00	0.95	0.87		0.96	0.92	0.97		0.99	0.92	0.90	
Q1:	6.3	10.7	5.1		1.4	10.7	1.6		2.2	4.1	7.9		5.1	3.4	1.3	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	2.7	2.0	0.9		1.4	3.0	0.2		0.5	0.7	2.8		2.6	0.5	0.2	
HCM2KQueue:	9.0	12.7	6.0		2.8	13.7	1.8		2.7	4.7	10.7		7.6	3.9	1.5	
70th%Factor:	1.18	1.17	1.19		1.19	1.17	1.20		1.19	1.19	1.18		1.18	1.19	1.20	
HCM2k70thQ:	10.6	14.9	7.1		3.3	16.0	2.2		3.2	5.6	12.6		9.0	4.7	1.8	
85th%Factor:	1.52	1.50	1.55		1.57	1.49	1.58		1.57	1.56	1.51		1.53	1.56	1.59	
HCM2k85thQ:	13.7	19.0	9.2		4.4	20.4	2.9		4.2	7.4	16.1		11.7	6.1	2.4	
90th%Factor:	1.66	1.61	1.70		1.75	1.60	1.76		1.75	1.72	1.63		1.67	1.73	1.77	
HCM2k90thQ:	14.9	20.4	10.1		4.9	21.9	3.3		4.7	8.1	17.5		12.7	6.8	2.7	
95th%Factor:	1.86	1.80	1.93		2.01	1.78	2.04		2.02	1.96	1.83		1.89	1.98	2.05	
HCM2k95thQ:	16.8	22.8	11.5		5.6	24.4	3.8		5.4	9.3	19.6		14.4	7.8	3.1	
98th%Factor:	2.20	2.08	2.33		2.51	2.05	2.57		2.51	2.39	2.14		2.26	2.44	2.59	
HCM2k98thQ:	19.8	26.3	13.9		7.0	28.1	4.7		6.8	11.4	22.9		17.2	9.6	4.0	

Cumul No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.670
Loss Time (sec):	12	Average Delay (sec/veh):	35.9
Optimal Cycle:	56	Level Of Service:	D

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:	PM Peak Hour											
Base Vol:	187	820	136	216	640	125	216	621	107	187	630	160
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	187	820	136	216	640	125	216	621	107	187	630	160
Added Vol:	16	27	0	0	19	0	0	24	10	0	37	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	203	847	136	216	659	125	216	645	117	187	667	160
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	221	921	148	235	716	136	235	701	127	203	725	174
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	221	921	148	235	716	136	235	701	127	203	725	174
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	221	921	148	235	716	136	235	701	127	203	725	174
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.12	0.18	0.09	0.13	0.14	0.09	0.13	0.14	0.08	0.11	0.14	0.11
Crit Moves:		****		****			****				****	
Green/Cycle:	0.22	0.27	0.27	0.20	0.25	0.25	0.20	0.22	0.22	0.19	0.21	0.21
Volume/Cap:	0.57	0.67	0.35	0.67	0.57	0.35	0.67	0.61	0.36	0.61	0.67	0.52
Delay/Veh:	36.7	33.8	29.8	42.0	33.5	31.4	42.0	35.9	33.3	40.8	37.8	36.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.7	33.8	29.8	42.0	33.5	31.4	42.0	35.9	33.3	40.8	37.8	36.2
LOS by Move:	D	C	C	D	C	C	D	D	C	D	D	D
HCM2k95thQ:	269	400	158	314	314	153	361	360	166	269	345	217

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	1	3	1	1	3	1	1	3	1	1	3	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Fnl Sat Adj:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.22	0.27	0.27	0.20	0.25	0.25	0.20	0.22	0.22	0.19	0.21	0.21
ArrivalType:		4			4			4			4	
ProgFactor:	0.95	0.95	0.91	0.97	0.94	0.92	0.97	0.95	0.93	0.97	0.96	0.95
Q1:	5.2	7.9	3.0	5.8	6.0	2.8	5.8	6.1	2.8	5.0	6.5	4.1
UpstreamVC:	0.68	0.68	0.68	0.35	0.35	0.35	0.00	0.00	0.00	0.42	0.42	0.42
UpstreamAdj:	0.67	0.67	0.67	0.95	0.95	0.95	0.00	0.00	0.00	0.91	0.91	0.91
EarlyArrAdj:	0.28	0.33	0.30	0.37	0.44	0.40	1.00	1.00	1.00	0.34	0.38	0.35
Q2:	0.4	0.6	0.2	0.7	0.6	0.2	1.8	1.5	0.5	0.5	0.7	0.4
HCM2KQueue:	5.6	8.5	3.2	6.5	6.6	3.1	7.6	7.6	3.3	5.5	7.3	4.4
70th%Factor:	1.19	1.18	1.19	1.18	1.18	1.19	1.18	1.18	1.19	1.19	1.18	1.19
HCM2k70thQ:	6.6	10.1	3.8	7.8	7.8	3.6	9.0	9.0	4.0	6.6	8.6	5.3
85th%Factor:	1.55	1.53	1.57	1.54	1.54	1.57	1.53	1.53	1.57	1.55	1.54	1.56
HCM2k85thQ:	8.6	13.0	5.0	10.1	10.1	4.8	11.7	11.7	5.2	8.6	11.2	6.9
90th%Factor:	1.70	1.66	1.74	1.69	1.69	1.74	1.67	1.67	1.74	1.70	1.68	1.72
HCM2k90thQ:	9.5	14.2	5.5	11.1	11.1	5.3	12.8	12.7	5.8	9.4	12.2	7.6
95th%Factor:	1.94	1.87	2.00	1.92	1.92	2.01	1.89	1.89	2.00	1.94	1.90	1.97
HCM2k95thQ:	10.8	16.0	6.3	12.5	12.6	6.1	14.4	14.4	6.6	10.7	13.8	8.7
98th%Factor:	2.35	2.22	2.48	2.30	2.30	2.49	2.26	2.26	2.47	2.35	2.27	2.41
HCM2k98thQ:	13.1	18.9	7.8	15.1	15.1	7.6	17.2	17.2	8.2	13.0	16.5	10.7

Cumul No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 Morada Ln & SR99 W Frontage Rd

Cycle (sec): 100 Critical Vol./Cap.(X): 0.647
Loss Time (sec): 12 Average Delay (sec/veh): 24.3
Optimal Cycle: 53 Level Of Service: C

Street Name:	SR 99 West Frontage Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 1	0 1	2	0 0	1 0	1	0 2	1 0	1	0 2	0 1
Volume Module:	PM Peak Hour											
Base Vol:	5	62	89	463	26	11	28	700	2	96	693	502
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	62	89	463	26	11	28	700	2	96	693	502
Added Vol:	0	0	0	0	0	0	0	24	0	0	37	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	62	89	463	26	11	28	724	2	96	730	502
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	5	67	97	503	28	12	30	787	2	104	793	546
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	67	97	503	28	12	30	787	2	104	793	546
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	5	67	97	503	28	12	30	787	2	104	793	546
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.90	0.94	0.94	0.93	0.89	0.89	0.93	0.93	0.83
Lanes:	2.00	1.00	1.00	2.00	0.70	0.30	1.00	2.99	0.01	1.00	2.00	1.00
Final Sat.:	3432	1862	1583	3432	1250	529	1769	5069	14	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.04	0.06	0.15	0.02	0.02	0.02	0.16	0.16	0.06	0.22	0.34
Crit Moves:			****	****			****					****
Green/Cycle:	0.02	0.09	0.09	0.23	0.30	0.30	0.03	0.41	0.41	0.15	0.53	0.53
Volume/Cap:	0.08	0.38	0.65	0.65	0.08	0.08	0.65	0.38	0.38	0.38	0.42	0.65
Delay/Veh:	48.4	43.9	53.2	37.0	25.1	25.1	75.6	21.1	21.1	38.9	14.2	18.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.4	43.9	53.2	37.0	25.1	25.1	75.6	21.1	21.1	38.9	14.2	18.4
LOS by Move:	D	D	D	D	C	C	E	C	C	D	B	B
HCM2k95thQ:	8	117	201	374	40	40	51	242	242	136	258	431

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #22 Morada Ln & SR99 W Frontage Rd

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        2  0  1  0  1    2  0  0  1  0    1  0  2  1  0    1  0  2  0  1
Lane Group:    L    T     R     L   RT     RT    L   RT     RT    L    T     R
#LnsInGrps:     2    1     1     2    1     1     1    3     3     1    2     1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:          8                8                8                8
% Hev Veh:            2                2                2                2
Grade:               0%               0%               0%               0%
Parking/Hr:          No               No               No               No
Bus Stp/Hr:           0                0                0                0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:          0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:           0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Hev Veh Adj: 0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
Grade Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Parking Adj: xxxx xxxx  1.00  xxxx 1.00  1.00  xxxx 1.00  1.00  xxxx xxxx  1.00
Bus Stp Adj: xxxx xxxx  1.00  xxxx 1.00  1.00  xxxx 1.00  1.00  xxxx xxxx  1.00
Area Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
RT Adj:      xxxx xxxx  0.85  xxxx 0.96  0.96  xxxx 1.00  1.00  xxxx xxxx  0.85
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.93 0.98  0.83  0.93 0.94  0.94  0.93 0.98  0.98  0.93 0.98  0.83
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 0.97 1.00  1.00  0.97 1.00  1.00  1.00 0.91  0.91  1.00 0.95  1.00
Fnl Sat Adj: 0.90 0.98  0.83  0.90 0.94  0.94  0.93 0.89  0.89  0.93 0.93  0.83
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
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Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #22 Morada Ln & SR99 W Frontage Rd

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Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Green/Cycle: 0.02 0.09  0.09  0.23 0.30  0.30  0.03 0.41  0.41  0.15 0.53  0.53
ArrivalType:         4                4                4                4
ProgFactor:  0.99 0.98  0.99  0.96 0.86  0.86  1.00 0.82  0.82  0.96 0.69  0.75
Q1:           0.1  1.7   2.6   6.3  0.7   0.7   0.8  4.7   4.7   2.5  4.8   8.1
UpstreamVC:  0.00 0.00  0.00  0.00 0.00  0.00  0.61 0.61  0.61  0.31 0.31  0.31
UpstreamAdj: 0.00 0.00  0.00  0.00 0.00  0.00  0.75 0.75  0.75  0.96 0.96  0.96
EarlyArrAdj: 1.00 1.00  1.00  1.00 1.00  1.00  0.09 0.47  0.47  0.32 0.70  0.64
Q2:           0.1  0.6   1.5   1.7  0.1   0.1   0.2  0.3   0.3   0.2  0.5   1.1
HCM2KQueue:   0.2  2.3   4.1   7.9  0.8   0.8   1.0  4.9   4.9   2.7  5.3   9.3
------------|---------------||---------------||---------------||---------------|
70th%Factor: 1.20 1.19  1.19  1.18 1.20  1.20  1.20 1.19  1.19  1.19 1.19  1.18
HCM2k70thQ:   0.2  2.8   4.8   9.4  0.9   0.9   1.2  5.9   5.9   3.2  6.3  10.9
------------|---------------||---------------||---------------||---------------|
85th%Factor: 1.60 1.58  1.56  1.53 1.59  1.59  1.59 1.55  1.55  1.57 1.55  1.52
HCM2k85thQ:   0.2  3.7   6.3  12.1  1.2   1.2   1.6  7.7   7.7   4.2  8.2  14.1
------------|---------------||---------------||---------------||---------------|
90th%Factor: 1.80 1.76  1.73  1.67 1.78  1.78  1.78 1.71  1.71  1.75 1.71  1.65
HCM2k90thQ:   0.3  4.1   7.0  13.2  1.4   1.4   1.8  8.5   8.5   4.7  9.1  15.3
------------|---------------||---------------||---------------||---------------|
95th%Factor: 2.09 2.03  1.98  1.89 2.07  2.07  2.07 1.96  1.96  2.02 1.95  1.86
HCM2k95thQ:   0.3  4.7   8.0  15.0  1.6   1.6   2.0  9.7   9.7   5.4 10.3  17.2
------------|---------------||---------------||---------------||---------------|
98th%Factor: 2.69 2.54  2.43  2.24 2.64  2.64  2.63 2.38  2.38  2.51 2.36  2.19
HCM2k98thQ:   0.4  5.9   9.9  17.8  2.0   2.0   2.6 11.8  11.8   6.8 12.6  20.3
```

Cumul No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 West Ln & West Ln Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.860
Loss Time (sec):	12	Average Delay (sec/veh):	28.6
Optimal Cycle:	94	Level Of Service:	C

Street Name:	West Lane						West Lane Frontage Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3	1 0	1 0	3	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:	PM Peak Hour											
Base Vol:	303	2146	80	16	1749	25	60	39	249	98	25	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	303	2146	80	16	1749	25	60	39	249	98	25	10
Added Vol:	0	288	0	0	197	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	303	2434	80	16	1946	25	60	39	249	98	25	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	329	2646	87	17	2115	27	65	42	271	107	27	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	329	2646	87	17	2115	27	65	42	271	107	27	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	329	2646	87	17	2115	27	65	42	271	107	27	11
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.89	0.89	0.93	0.85	0.85	0.93	0.94	0.94
Lanes:	1.00	3.87	0.13	1.00	3.95	0.05	1.00	0.14	0.86	1.00	0.71	0.29
Final Sat.:	1769	6529	215	1769	6678	86	1769	219	1401	1769	1273	509
Capacity Analysis Module:												
Vol/Sat:	0.19	0.41	0.41	0.01	0.32	0.32	0.04	0.19	0.19	0.06	0.02	0.02
Crit Moves:	****				****			****		****		
Green/Cycle:	0.22	0.57	0.57	0.01	0.37	0.37	0.19	0.22	0.22	0.07	0.11	0.11
Volume/Cap:	0.86	0.71	0.71	0.71	0.86	0.86	0.20	0.86	0.86	0.86	0.20	0.20
Delay/Veh:	55.2	16.1	16.1	115.0	32.4	32.4	34.6	55.4	55.4	87.6	41.1	41.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	55.2	16.1	16.1	115.0	32.4	32.4	34.6	55.4	55.4	87.6	41.1	41.1
LOS by Move:	E	B	B	F	C	C	C	E	E	F	D	D
HCM2k95thQ:	439	521	521	81	806	806	86	544	544	273	61	61

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0	3	1 0	1 0	3	1 0	1 0	0	1 0	1 0	0	1 0
Lane Group:	L	RT	RT	L	RT	RT	L	RT	RT	L	RT	RT
#LnsInGrps:	1	4	4	1	4	4	1	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:		8			8			8			8	
% Hev Veh:		2			2			2			2	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:		Include			Include			Include			Include	
% RT Prtct:		0			0			0			0	
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	0.87	0.87	xxxx	0.96	0.96
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.98	0.93	0.98	0.98	0.93	0.85	0.85	0.93	0.94	0.94
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.93	0.89	0.89	0.93	0.89	0.89	0.93	0.85	0.85	0.93	0.94	0.94
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.22	0.57	0.57	0.01	0.37	0.37	0.19	0.22	0.22	0.07	0.11	0.11
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.72	0.72	1.00	0.95	0.95	0.94	0.98	0.98	1.00	0.97	0.97
Q1:	8.7	10.8	10.8	0.5	14.4	14.4	1.4	8.2	8.2	2.9	0.9	0.9
UpstreamVC:	0.88	0.88	0.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.36	0.36	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.15	0.28	0.28	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.8	0.7	0.7	1.1	4.5	4.5	0.2	3.8	3.8	2.7	0.2	0.2
HCM2KQueue:	9.5	11.5	11.5	1.6	18.9	18.9	1.7	12.0	12.0	5.6	1.2	1.2
70th%Factor:	1.18	1.18	1.18	1.20	1.16	1.16	1.20	1.17	1.17	1.19	1.20	1.20
HCM2k70thQ:	11.2	13.5	13.5	1.9	21.9	21.9	2.0	14.1	14.1	6.7	1.4	1.4
85th%Factor:	1.52	1.50	1.50	1.58	1.46	1.46	1.58	1.50	1.50	1.55	1.59	1.59
HCM2k85thQ:	14.4	17.3	17.3	2.5	27.5	27.5	2.7	18.1	18.1	8.7	1.9	1.9
90th%Factor:	1.65	1.63	1.63	1.77	1.56	1.56	1.77	1.62	1.62	1.70	1.78	1.78
HCM2k90thQ:	15.6	18.7	18.7	2.8	29.3	29.3	3.0	19.5	19.5	9.6	2.1	2.1
95th%Factor:	1.85	1.82	1.82	2.05	1.71	1.71	2.05	1.81	1.81	1.94	2.06	2.06
HCM2k95thQ:	17.6	20.9	20.9	3.2	32.3	32.3	3.4	21.7	21.7	10.9	2.4	2.4
98th%Factor:	2.18	2.11	2.11	2.59	1.93	1.93	2.58	2.10	2.10	2.35	2.61	2.61
HCM2k98thQ:	20.7	24.3	24.3	4.1	36.5	36.5	4.3	25.2	25.2	13.2	3.1	3.1

Cumul No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 West Lane & Knickerbocker Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.868
Loss Time (sec):	12	Average Delay (sec/veh):	32.4
Optimal Cycle:	97	Level Of Service:	C

Street Name:	West Lane						Knickerbocker Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	1	0	1	0	3	1	0	1	0
Volume Module:	PM Peak Hour											
Base Vol:	202	2416	58	102	1989	150	243	101	114	82	106	74
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	202	2416	58	102	1989	150	243	101	114	82	106	74
Added Vol:	0	288	0	0	197	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	202	2704	58	102	2186	150	243	101	114	82	106	74
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	220	2939	63	111	2376	163	264	110	124	89	115	80
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	220	2939	63	111	2376	163	264	110	124	89	115	80
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	220	2939	63	111	2376	163	264	110	124	89	115	80
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.88	0.88	0.93	0.90	0.90	0.93	0.92	0.92
Lanes:	1.00	3.92	0.08	1.00	3.74	0.26	1.00	0.47	0.53	1.00	0.59	0.41
Final Sat.:	1769	6615	142	1769	6279	431	1769	806	909	1769	1029	718
Capacity Analysis Module:												
Vol/Sat:	0.12	0.44	0.44	0.06	0.38	0.38	0.15	0.14	0.14	0.05	0.11	0.11
Crit Moves:	****				****		****				****	
Green/Cycle:	0.14	0.51	0.51	0.07	0.44	0.44	0.17	0.22	0.22	0.08	0.13	0.13
Volume/Cap:	0.87	0.88	0.88	0.88	0.87	0.87	0.87	0.62	0.62	0.62	0.87	0.87
Delay/Veh:	67.7	24.7	24.7	90.6	28.6	28.6	62.6	38.4	38.4	52.5	70.8	70.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.7	24.7	24.7	90.6	28.6	28.6	62.6	38.4	38.4	52.5	70.8	70.8
LOS by Move:	E	C	C	F	C	C	E	D	D	D	E	E
HCM2k95thQ:	294	798	798	175	770	770	495	339	339	185	407	407

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	3	1 0	1	0	3	1 0	1	0	0	1 0	1	0	0	1 0
Lane Group:	L		RT	RT	L		RT	RT	L		RT	RT	L		RT	RT
#LnsInGrps:	1		4	4	1		4	4	1		1	1	1		1	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	1.00	1.00		xxxx	0.99	0.99		xxxx	0.92	0.92		xxxx	0.94	0.94	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.98		0.93	0.97	0.97		0.93	0.90	0.90		0.93	0.92	0.92	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	0.91		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.89		0.93	0.88	0.88		0.93	0.90	0.90		0.93	0.92	0.92	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.14	0.51	0.51		0.07	0.44	0.44		0.17	0.22	0.22		0.08	0.13	0.13	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.90	0.90		1.00	0.93	0.93		0.99	0.96	0.96		0.99	0.99	0.99	
Q1:		5.9	18.2	18.2		3.0	16.4	16.4		7.1	5.6	5.6		2.4	5.3	5.3
UpstreamVC:	1.26	1.26	1.26		0.86	0.86	0.86		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.09	0.09	0.09		0.39	0.39	0.39		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	0.03	0.06	0.06		0.08	0.25	0.25		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:		0.2	0.4	0.4		0.5	1.5	1.5		3.8	1.5	1.5		1.4	3.4	3.4
HCM2KQueue:		6.1	18.6	18.6		3.5	17.9	17.9		10.8	7.1	7.1		3.7	8.7	8.7
70th%Factor:	1.19	1.16	1.16		1.19	1.16	1.16		1.18	1.18	1.18		1.19	1.18	1.18	
HCM2k70thQ:		7.2	21.7	21.7		4.2	20.8	20.8		12.7	8.4	8.4		4.4	10.3	10.3
85th%Factor:	1.54	1.46	1.46		1.57	1.47	1.47		1.51	1.54	1.54		1.56	1.52	1.52	
HCM2k85thQ:		9.4	27.2	27.2		5.5	26.2	26.2		16.3	10.9	10.9		5.8	13.3	13.3
90th%Factor:	1.69	1.56	1.56		1.74	1.56	1.56		1.63	1.68	1.68		1.73	1.66	1.66	
HCM2k90thQ:		10.3	29.0	29.0		6.1	28.0	28.0		17.7	12.0	12.0		6.5	14.5	14.5
95th%Factor:	1.93	1.71	1.71		1.99	1.72	1.72		1.83	1.90	1.90		1.99	1.87	1.87	
HCM2k95thQ:		11.8	31.9	31.9		7.0	30.8	30.8		19.8	13.5	13.5		7.4	16.3	16.3
98th%Factor:	2.33	1.94	1.94		2.46	1.95	1.95		2.14	2.28	2.28		2.45	2.21	2.21	
HCM2k98thQ:		14.2	36.1	36.1		8.7	34.9	34.9		23.1	16.2	16.2		9.1	19.3	19.3

Cumul No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 1.256
Loss Time (sec): 12 Average Delay (sec/veh): 94.6
Optimal Cycle: 180 Level Of Service: F

Street Name:	West Lane						Hammer Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4 0 1	2	0	4 0 1	2	0	4 0 1	2	0	4 0 1
Volume Module:	PM Peak Hour											
Base Vol:	176	1789	461	805	1263	130	240	1066	97	614	1089	642
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	176	1789	461	805	1263	130	240	1066	97	614	1089	642
Added Vol:	0	288	0	0	197	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	176	2077	461	805	1460	130	240	1066	97	614	1089	642
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	191	2258	501	875	1587	141	261	1159	105	667	1184	698
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	191	2258	501	875	1587	141	261	1159	105	667	1184	698
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	191	2258	501	875	1587	141	261	1159	105	667	1184	698
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.06	0.33	0.32	0.25	0.23	0.09	0.08	0.17	0.07	0.19	0.17	0.44
Crit Moves:		****		****			****					****
Green/Cycle:	0.09	0.27	0.27	0.20	0.38	0.38	0.06	0.19	0.19	0.22	0.35	0.35
Volume/Cap:	0.62	1.26	1.19	1.26	0.62	0.24	1.26	0.89	0.35	0.89	0.50	1.26
Delay/Veh:	47.6	157	145.1	166.4	25.7	21.4	195.1	47.1	35.6	50.3	25.7	161.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.6	157	145.1	166.4	25.7	21.4	195.1	47.1	35.6	50.3	25.7	161.7
LOS by Move:	D	F	F	F	C	C	F	D	D	D	C	F
HCM2k95thQ:	197	1457	1153	1020	423	115	456	574	146	437	303	1472

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2 0	4 0	1	2 0	4 0	1	2 0	4 0	1	2 0	4 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	4	1	2	4	1	2	4	1	2	4	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Fnl Sat Adj:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.09	0.27	0.27	0.20	0.38	0.38	0.06	0.19	0.19	0.22	0.35	0.35
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	1.00	1.00	1.00	0.89	0.82	1.00	0.99	0.94	0.99	0.88	1.00
Q1:	2.6	17.2	13.9	12.5	8.7	2.2	3.7	8.5	2.4	9.1	6.3	19.4
UpstreamVC:	0.00	0.00	0.00	0.87	0.87	0.87	0.00	0.00	0.00	1.03	1.03	1.03
UpstreamAdj:	0.00	0.00	0.00	0.38	0.38	0.38	0.00	0.00	0.00	0.09	0.09	0.09
EarlyArrAdj:	1.00	1.00	1.00	0.15	0.22	0.20	1.00	1.00	1.00	0.04	0.05	0.05
Q2:	1.4	19.7	14.5	12.2	0.4	0.1	6.2	4.3	0.5	0.3	0.1	18.0
HCM2KQueue:	4.0	36.9	28.4	24.7	9.1	2.3	9.9	12.8	2.9	9.4	6.3	37.4
70th%Factor:	1.19	1.14	1.15	1.15	1.18	1.19	1.18	1.17	1.19	1.18	1.19	1.14
HCM2k70thQ:	4.7	42.1	32.6	28.5	10.7	2.7	11.7	15.0	3.5	11.1	7.5	42.6
85th%Factor:	1.56	1.39	1.42	1.43	1.52	1.58	1.52	1.50	1.57	1.52	1.54	1.39
HCM2k85thQ:	6.2	51.3	40.2	35.4	13.8	3.6	15.0	19.1	4.6	14.3	9.7	51.8
90th%Factor:	1.73	1.46	1.50	1.52	1.65	1.76	1.64	1.61	1.75	1.65	1.69	1.46
HCM2k90thQ:	6.9	54.1	42.5	37.5	15.0	4.0	16.3	20.6	5.1	15.5	10.7	54.6
95th%Factor:	1.98	1.58	1.62	1.65	1.86	2.03	1.85	1.79	2.01	1.86	1.92	1.58
HCM2k95thQ:	7.9	58.3	46.1	40.8	16.9	4.6	18.3	23.0	5.8	17.5	12.1	58.9
98th%Factor:	2.44	1.76	1.81	1.85	2.20	2.54	2.17	2.07	2.50	2.18	2.32	1.76
HCM2k98thQ:	9.7	65.0	51.5	45.7	20.0	5.8	21.4	26.5	7.3	20.6	14.6	65.6

Cumul No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec): 100 Critical Vol./Cap.(X): 1.031
Loss Time (sec): 12 Average Delay (sec/veh): 51.9
Optimal Cycle: 180 Level Of Service: D

Street Name:	Hammer Lane						Holman Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 2	1 0	2	0 3	0 1	2	0 3	1 0	2	0 3	1 0
Volume Module:	PM Peak Hour											
Base Vol:	535	681	149	211	583	320	532	2009	322	212	2008	148
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	535	681	149	211	583	320	532	2009	322	212	2008	148
Added Vol:	0	43	0	0	29	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	535	724	149	211	612	320	532	2009	322	212	2008	148
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	582	787	162	229	665	348	578	2184	350	230	2183	161
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	582	787	162	229	665	348	578	2184	350	230	2183	161
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	582	787	162	229	665	348	578	2184	350	230	2183	161
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.87	0.87	0.90	0.89	0.83	0.90	0.87	0.87	0.90	0.88	0.88
Lanes:	2.00	2.49	0.51	2.00	3.00	1.00	2.00	3.45	0.55	2.00	3.73	0.27
Final Sat.:	3432	4106	845	3432	5083	1583	3432	5719	917	3432	6249	461
Capacity Analysis Module:												
Vol/Sat:	0.17	0.19	0.19	0.07	0.13	0.22	0.17	0.38	0.38	0.07	0.35	0.35
Crit Moves:	****					****	****				****	
Green/Cycle:	0.16	0.28	0.28	0.10	0.21	0.21	0.16	0.43	0.43	0.08	0.34	0.34
Volume/Cap:	1.03	0.68	0.68	0.68	0.61	1.03	1.03	0.89	0.89	0.89	1.03	1.03
Delay/Veh:	87.8	33.5	33.5	49.4	36.7	96.5	87.9	30.6	30.6	75.8	60.3	60.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	87.8	33.5	33.5	49.4	36.7	96.5	87.9	30.6	30.6	75.8	60.3	60.3
LOS by Move:	F	C	C	D	D	F	F	C	C	E	E	E
HCM2k95thQ:	661	465	465	177	307	622	502	794	794	304	1143	1143

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	1	0	2	0	3	0	1	2	0	3	1	0	2
Lane Group:	L	RT			RT	L	T		R	L	RT		RT	L	RT	
#LnsInGrps:	2	3			3	2	3		1	2	4		4	2	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12			12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.97	0.97		xxxx	xxxx	0.85		xxxx	0.98	0.98		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.95	0.95		0.93	0.98	0.83		0.93	0.96	0.96		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	0.91		0.97	0.91	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.87	0.87		0.90	0.89	0.83		0.90	0.87	0.87		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.16	0.28	0.28		0.10	0.21	0.21		0.16	0.43	0.43		0.08	0.34	0.34	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.95	0.95		0.99	0.96	1.00		1.00	0.95	0.95		1.00	1.00	1.00	
Q1:	8.3	8.1	8.1		3.1	5.9	9.7		8.3	17.0	17.0		3.3	17.9	17.9	
UpstreamVC:	0.00	0.00	0.00		0.57	0.57	0.57		0.89	0.89	0.89		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.80	0.80	0.80		0.34	0.34	0.34		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		0.21	0.34	0.31		0.12	0.21	0.21		1.00	1.00	1.00	
Q2:	6.7	2.0	2.0		0.4	0.5	4.4		2.7	1.6	1.6		3.1	10.2	10.2	
HCM2KQueue:	15.0	10.1	10.1		3.6	6.4	14.0		11.0	18.5	18.5		6.3	28.1	28.1	
70th%Factor:	1.17	1.18	1.18		1.19	1.19	1.17		1.18	1.16	1.16		1.19	1.15	1.15	
HCM2k70thQ:	17.6	11.9	11.9		4.2	7.6	16.4		12.9	21.5	21.5		7.5	32.3	32.3	
85th%Factor:	1.48	1.51	1.51		1.57	1.54	1.49		1.51	1.46	1.46		1.54	1.42	1.42	
HCM2k85thQ:	22.3	15.3	15.3		5.6	9.9	20.9		16.6	27.1	27.1		9.8	39.9	39.9	
90th%Factor:	1.59	1.64	1.64		1.73	1.69	1.60		1.63	1.56	1.56		1.69	1.50	1.50	
HCM2k90thQ:	23.9	16.6	16.6		6.2	10.8	22.4		17.9	28.9	28.9		10.7	42.1	42.1	
95th%Factor:	1.76	1.84	1.84		1.99	1.92	1.78		1.83	1.71	1.71		1.92	1.63	1.63	
HCM2k95thQ:	26.5	18.6	18.6		7.1	12.3	24.9		20.1	31.7	31.7		12.2	45.7	45.7	
98th%Factor:	2.01	2.16	2.16		2.46	2.31	2.04		2.13	1.94	1.94		2.31	1.81	1.81	
HCM2k98thQ:	30.3	21.8	21.8		8.7	14.8	28.6		23.4	35.9	35.9		14.7	51.1	51.1	

Cumul No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #46 Lt Col Mark Taylor St & Ham Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.488
Loss Time (sec): 12 Average Delay (sec/veh): 30.2
Optimal Cycle: 40 Level Of Service: C

Street Name:	Ham Lane						Lt. Col. Mark Taylor Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0
Volume Module:	PM Peak Hour											
Base Vol:	64	43	33	11	34	9	17	221	39	44	208	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	64	43	33	11	34	9	17	221	39	44	208	8
Added Vol:	13	210	0	103	144	42	61	45	9	0	68	152
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	77	253	33	114	178	51	78	266	48	44	276	160
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	84	275	36	124	193	55	85	289	52	48	300	174
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	84	275	36	124	193	55	85	289	52	48	300	174
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	84	275	36	124	193	55	85	289	52	48	300	174
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.96	0.96	0.93	0.95	0.95	0.93	0.91	0.91	0.93	0.88	0.88
Lanes:	1.00	0.88	0.12	1.00	0.78	0.22	1.00	1.69	0.31	1.00	1.27	0.73
Final Sat.:	1769	1619	211	1769	1400	401	1769	2928	528	1769	2116	1227
Capacity Analysis Module:												
Vol/Sat:	0.05	0.17	0.17	0.07	0.14	0.14	0.05	0.10	0.10	0.03	0.14	0.14
Crit Moves:		****		****			****				****	
Green/Cycle:	0.13	0.35	0.35	0.14	0.37	0.37	0.10	0.31	0.31	0.08	0.29	0.29
Volume/Cap:	0.38	0.49	0.49	0.49	0.38	0.38	0.49	0.32	0.32	0.32	0.49	0.49
Delay/Veh:	41.2	26.2	26.2	40.9	23.7	23.7	44.9	27.0	27.0	44.4	29.7	29.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.2	26.2	26.2	40.9	23.7	23.7	44.9	27.0	27.0	44.4	29.7	29.7
LOS by Move:	D	C	C	D	C	C	D	C	C	D	C	C
HCM2k95thQ:	134	330	330	197	242	242	123	182	182	69	276	276

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #46 Lt Col Mark Taylor St & Ham Ln

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	1	0	0	1	0		1	0	0	1	0		1	0	1	1	0		1	0	1	1	0	
Lane Group:	L		RT		RT		L		RT		RT		L		RT		RT		L		RT		RT	
#LnsInGrps:	1		1		1		1		1		1		1		2		2		1		2		2	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:			8						8						8						8			
% Hev Veh:			2						2						2						2			
Grade:			0%						0%						0%						0%			
Parking/Hr:			No						No						No						No			
Bus Stp/Hr:			0						0						0						0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0						0						0						0			
ExclusiveRT:			Include						Include						Include						Include			
% RT Prtct:			0						0						0						0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx		
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Hev Veh Adj:	0.98		0.98		0.98		0.98		0.98		0.98		0.98		0.98		0.98		0.98		0.98		0.98	
Grade Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Parking Adj:	xxxx		1.00		1.00		xxxx		1.00		1.00		xxxx		1.00		1.00		xxxx		1.00		1.00	
Bus Stp Adj:	xxxx		1.00		1.00		xxxx		1.00		1.00		xxxx		1.00		1.00		xxxx		1.00		1.00	
Area Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
RT Adj:	xxxx		0.98		0.98		xxxx		0.97		0.97		xxxx		0.98		0.98		xxxx		0.95		0.95	
LT Adj:	0.95		xxxx		xxxxx		0.95		xxxx		xxxxx		0.95		xxxx		xxxxx		0.95		xxxx		xxxxx	
PedBike Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
HCM Sat Adj:	0.93		0.96		0.96		0.93		0.95		0.95		0.93		0.96		0.96		0.93		0.93		0.93	
Usr Sat Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
MLF Sat Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		0.95		0.95		1.00		0.95		0.95	
Fnl Sat Adj:	0.93		0.96		0.96		0.93		0.95		0.95		0.93		0.91		0.91		0.93		0.88		0.88	
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	

Cumul No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #46 Lt Col Mark Taylor St & Ham Ln

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.13	0.35	0.35	0.14	0.37	0.37	0.10	0.31	0.31	0.08	0.29	0.29
ArrivalType:		4			4			4			4	
ProgFactor:	0.97	0.88	0.88	0.97	0.85	0.85	0.98	0.89	0.89	0.98	0.91	0.91
Q1:	2.1	6.0	6.0	3.1	4.3	4.3	2.2	3.4	3.4	1.2	5.2	5.2
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.03	0.07	0.07	0.07
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.26	0.52	0.52	0.23	0.49	0.49
Q2:	0.6	0.9	0.9	0.9	0.6	0.6	0.2	0.2	0.2	0.1	0.5	0.5
HCM2KQueue:	2.7	6.9	6.9	4.0	4.9	4.9	2.4	3.7	3.7	1.3	5.7	5.7
70th%Factor:	1.19	1.18	1.18	1.19	1.19	1.19	1.19	1.19	1.19	1.20	1.19	1.19
HCM2k70thQ:	3.2	8.2	8.2	4.7	5.9	5.9	2.9	4.4	4.4	1.6	6.8	6.8
85th%Factor:	1.57	1.54	1.54	1.56	1.55	1.55	1.58	1.57	1.57	1.59	1.55	1.55
HCM2k85thQ:	4.2	10.6	10.6	6.2	7.7	7.7	3.8	5.7	5.7	2.1	8.8	8.8
90th%Factor:	1.75	1.68	1.68	1.73	1.71	1.71	1.75	1.73	1.73	1.77	1.70	1.70
HCM2k90thQ:	4.6	11.6	11.6	6.9	8.5	8.5	4.3	6.3	6.3	2.4	9.7	9.7
95th%Factor:	2.02	1.91	1.91	1.98	1.96	1.96	2.02	1.99	1.99	2.06	1.94	1.94
HCM2k95thQ:	5.4	13.2	13.2	7.9	9.7	9.7	4.9	7.3	7.3	2.7	11.0	11.0
98th%Factor:	2.52	2.29	2.29	2.44	2.38	2.38	2.53	2.45	2.45	2.60	2.35	2.35
HCM2k98thQ:	6.7	15.8	15.8	9.7	11.8	11.8	6.1	9.0	9.0	3.5	13.4	13.4

Cumul No Project PM Pk Hr

Future Queue Length Report (feet)

Node	Intersection	Northbound L	T	R	Southbound L	T	R	Eastbound L	T	R	Westbound L	T	R
#3	[HCM2k95thQ]:	327	1019	396	1294	407	318	502	673	106	259	1421	1421
#4	[HCM2k95thQ]:	659	666	609	576	542	255	189	709	202	701	649	649
#5	[HCM2k95thQ]:	162	729	1010	811	316	117	366	1182	108	715	1352	1352
#6	[HCM2k95thQ]:	96	1027	1322	1838	253	22	248	998	39	1557	376	1273
#7	[HCM2k95thQ]:	256	256	256	151	151	151	126	356	356	199	261	261
#8	[HCM2k95thQ]:	968	480	202	202	719	1035	910	1293	1293	296	1167	1167
#9	[HCM2k95thQ]:	304	817	817	1027	283	283	288	1045	336	676	726	648
#10	[HCM2k95thQ]:	148	0	139	0	0	6	0	188	188	197	50	50
#11	[HCM2k95thQ]:	543	130	61	84	150	528	429	499	415	68	621	621
#12	[HCM2k95thQ]:	3	412	412	662	6	6	16	708	1	125	1059	1059
#13	[HCM2k95thQ]:	29	29	29	29	24	24	16	15	0	27	16	16
#16	[HCM2k95thQ]:	229	456	456	100	395	395	285	171	263	290	181	151
#17	[HCM2k95thQ]:	117	248	687	888	160	74	211	1334	42	820	2209	2209
#18	[HCM2k95thQ]:	419	569	288	140	610	94	136	233	489	360	194	79
#19	[HCM2k95thQ]:	269	400	158	314	314	153	361	360	166	269	345	217
#22	[HCM2k95thQ]:	8	117	201	374	40	40	51	242	242	136	258	431
#24	[HCM2k95thQ]:	439	521	521	81	806	806	86	544	544	273	61	61
#25	[HCM2k95thQ]:	294	798	798	175	770	770	495	339	339	185	407	407
#26	[HCM2k95thQ]:	197	1457	1153	1020	423	115	456	574	146	437	303	1472
#27	[HCM2k95thQ]:	661	465	465	177	307	622	502	794	794	304	1143	1143
#46	[HCM2k95thQ]:	134	330	330	197	242	242	123	182	182	69	276	276

Cumul No Project PM Pk Hr With Recommended Improvements

Scenario Report

Scenario:	Cumul No Proj PM
Command:	Cumul No Proj PM
Volume:	Cumul GP Alt PM
Geometry:	Cumul No Proj
Impact Fee:	Default Impact Fee
Trip Generation:	PM Pk Hr
Trip Distribution:	Cumul With Bridge PM
Paths:	Cumul No Proj
Routes:	Default Route
Configuration:	Default Configuration

Cumul No Project PM Pk Hr With Recommended Improvements

Trip Generation Report

Forecast for PM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	0.00	ElemSchStudent	0.07	0.08	0	0	0	0.0
1	Village West	0.00	Tra Vigne SFDU	0.51	0.30	0	0	0	0.0
1	Village West	1646.00	GP Alt SFDU	0.48	0.28	790	461	1251	51.7
1	Village West	130.68	GP Alt Com KSF	2.63	2.85	344	372	716	29.6
1	Village West	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
1	Village West	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
1	Village West	232.00	GP Alt MFDU	0.41	0.22	95	51	146	6.0
1	Village West	0.00	Tra V Internal	-64.00	-64.00	0	0	0	0.0
1	Village West	1.00	GP Alt Interna	-76.00	-76.00	-76	-76	-152	-6.3
1	Village West	1.00	GP Alt Pass-By	-106.00	-111.00	-106	-111	-217	-9
	Zone 1 Subtotal					1047	697	1744	72.0
2	Village East	0.00	Tra Vigne SFDU	0.51	0.30	0	0	0	0.0
2	Village East	774.00	GP Alt SFDU	0.48	0.28	372	217	589	24.3
2	Village East	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
2	Village East	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
	Zone 2 Subtotal					372	217	589	24.3
4	Industrial	406.94	Indust KSF	0.05	0.17	20	69	89	3.7
	Zone 4 Subtotal					20	69	89	3.7
TOTAL						1439	983	2422	100.0

Cumul No Project PM Pk Hr With Recommended Improvements

Trip Distribution Report

Percent Of Trips Cumul With Bridge PM

Zone	To Gates 1	2	3	4	5	6	7	8	9	10	11
1	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	2.0
2	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	2.0
4	2.0	1.0	1.0	1.0	2.0	6.0	5.0	4.0	4.0	2.0	2.0

Zone	To Gates 12	13	14	15	16	17	19	20	21	22	23
1	5.0	13.0	1.0	2.0	3.0	1.0	20.0	3.0	5.0	3.0	14.0
2	5.0	13.0	1.0	2.0	3.0	1.0	20.0	3.0	5.0	3.0	14.0
4	5.0	13.0	1.0	2.0	3.0	1.0	20.0	3.0	5.0	3.0	14.0

Cumul No Project PM Pk Hr With Recommended Improvements

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	D	50.4	1.011	D	52.9	1.027	+ 2.520 D/V
# 5 Eight Mile & Lower Sacto Rd	E	55.3	1.032	E	69.0	1.112	+13.694 D/V
# 6 West Lane & Armstrong Road	D	48.3	0.982	D	48.0	0.982	-0.309 D/V
# 8 Eight Mile Rd & West Ln	E	57.8	1.056	E	67.4	1.089	+ 9.552 D/V
# 9 Eight Mile Road & Ham Lane	C	27.2	0.755	D	40.0	0.935	+12.806 D/V
# 17 Holman & Lt Col Mark Taylor	D	35.6	0.839	D	41.3	0.921	+ 5.687 D/V

Cumul No Project PM Pk Hr With Recommended Improvements

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]

Cumul No Project PM Pk Hr With Recommended Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

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Intersection #3 Eight Mile Rd & Thornton Rd

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Cycle (sec):	100	Critical Vol./Cap.(X):	1.027
Loss Time (sec):	12	Average Delay (sec/veh):	52.9
Optimal Cycle:	180	Level Of Service:	D

****

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	2 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	PM Peak Hour											
Base Vol:	198	735	196	512	537	219	395	1817	110	267	1880	404
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	198	735	196	512	537	219	395	1817	110	267	1880	404
Added Vol:	0	0	14	14	0	0	0	72	0	10	49	10
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	198	735	210	526	537	219	395	1889	110	277	1929	414
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	215	799	228	572	584	238	429	2053	120	301	2097	450
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	215	799	228	572	584	238	429	2053	120	301	2097	450
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	215	799	228	572	584	238	429	2053	120	301	2097	450
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	2.00	4.00	1.00	2.00	3.29	0.71
Final Sat.:	1769	3538	1583	3432	3538	1583	3432	6778	1583	3432	5429	1165
Capacity Analysis Module:												
Vol/Sat:	0.12	0.23	0.14	0.17	0.16	0.15	0.13	0.30	0.08	0.09	0.39	0.39
Crit Moves:		****		****			****				****	
Green/Cycle:	0.16	0.22	0.22	0.16	0.22	0.22	0.12	0.39	0.39	0.11	0.38	0.38
Volume/Cap:	0.75	1.03	0.66	1.03	0.75	0.68	1.03	0.78	0.20	0.78	1.03	1.03
Delay/Veh:	50.5	78.3	40.1	87.1	40.5	41.3	95.0	28.7	20.5	53.4	56.6	56.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.5	78.3	40.1	87.1	40.5	41.3	95.0	28.7	20.5	53.4	56.6	56.6
LOS by Move:	D	E	D	F	D	D	F	C	C	D	E	E
HCM2k95thQ:	376	836	345	651	471	366	355	581	92	230	1073	1073

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Note: Queue reported is the distance per lane in feet.

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Cumul No Project PM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	2	0	1	2	0	2	0	1	2	0	4	0	1	2
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	2	1		2	2	1		2	4	1		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project PM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.16	0.22	0.22		0.16	0.22	0.22		0.12	0.39	0.39		0.11	0.38	0.38	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	1.00	0.96		1.00	0.97	0.96		1.00	0.92	0.81		0.99	1.00	1.00	
Q1:		5.6	11.7		5.5	8.2	7.7		5.8	6.1	12.8		1.8	4.2	19.4	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		1.00	1.00	1.00		0.75	0.75	0.75	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.10	0.10	0.10		0.58	0.58	0.58	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.03	0.06	0.06		0.16	0.34	0.34	
Q2:		2.4	8.0		1.7	6.6	2.5		1.9	1.3	0.2		0.0	0.5	6.7	
HCM2KQueue:		8.0	19.7		7.3	14.8	10.2		7.7	7.5	13.0		1.8	4.7	26.2	
70th%Factor:	1.18	1.16	1.18		1.17	1.18	1.18		1.18	1.17	1.20		1.19	1.15	1.15	
HCM2k70thQ:		9.4	22.8		8.6	17.3	12.1		9.2	8.9	15.2		2.2	5.6	30.1	
85th%Factor:	1.53	1.46	1.54		1.48	1.51	1.53		1.53	1.49	1.58		1.56	1.43	1.43	
HCM2k85thQ:		12.2	28.6		11.1	21.9	15.5		11.9	11.5	19.4		2.9	7.3	37.3	
90th%Factor:	1.67	1.55	1.68		1.59	1.64	1.67		1.68	1.61	1.77		1.72	1.51	1.51	
HCM2k90thQ:		13.3	30.5		12.2	23.5	16.8		12.9	12.5	20.9		3.2	8.1	39.5	
95th%Factor:	1.89	1.70	1.90		1.76	1.84	1.89		1.90	1.79	2.04		1.96	1.64	1.64	
HCM2k95thQ:		15.0	33.4		13.8	26.0	18.8		14.6	14.2	23.3		3.7	9.2	42.9	
98th%Factor:	2.24	1.92	2.27		2.02	2.15	2.25		2.26	2.07	2.57		2.40	1.83	1.83	
HCM2k98thQ:		17.9	37.7		16.5	29.8	22.1		17.4	16.9	26.8		4.6	11.2	48.0	

Cumul No Project PM Pk Hr With Recommended Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.112
Loss Time (sec):	12	Average Delay (sec/veh):	69.0
Optimal Cycle:	180	Level Of Service:	E

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2 0 1	2	0	2 0 1	2	0	4 0 1	2	0	4 0 1
Volume Module:	PM Peak Hour											
Base Vol:	169	787	393	599	513	109	210	1811	90	498	1825	491
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	169	787	393	599	513	109	210	1811	90	498	1825	491
Added Vol:	0	0	43	29	0	0	0	144	0	29	98	20
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	169	787	436	628	513	109	210	1955	90	527	1923	511
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	184	855	474	683	558	118	228	2125	98	573	2090	555
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	184	855	474	683	558	118	228	2125	98	573	2090	555
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	184	855	474	683	558	118	228	2125	98	573	2090	555
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.05	0.24	0.30	0.20	0.16	0.07	0.07	0.31	0.06	0.17	0.31	0.35
Crit Moves:			****	****				****		****		
Green/Cycle:	0.11	0.27	0.27	0.18	0.33	0.33	0.07	0.28	0.28	0.15	0.36	0.36
Volume/Cap:	0.47	0.90	1.11	1.11	0.47	0.22	0.97	1.11	0.22	1.11	0.85	0.97
Delay/Veh:	42.4	46.4	114.3	112.2	26.6	24.2	95.4	94.5	27.7	116.6	32.3	60.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.4	46.4	114.3	112.2	26.6	24.2	95.4	94.5	27.7	116.6	32.3	60.4
LOS by Move:	D	D	F	F	C	C	F	F	C	F	C	E
HCM2k95thQ:	162	729	1010	811	316	117	327	1182	108	715	782	928

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0 1	2	0	2	0 1	2	0	4	0 1	2	0	4	0 1
Lane Group:	L		T	R	L		T	R	L		T	R	L		T	R
#LnsInGrps:	2		2	1	2		2	1	2		4	1	2		4	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1		xxxx	xxxx	1		xxxx	xxxx	1		xxxx	xxxx	1		xxxx	xxxx
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project PM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.11	0.27	0.27	0.18	0.33	0.33	0.07	0.28	0.28	0.15	0.36	0.36
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.98	1.00	1.00	0.89	0.86	1.00	1.00	0.89	1.00	0.95	0.99
Q1:	2.4	11.8	13.2	9.8	5.7	2.0	3.3	16.2	1.8	8.2	14.0	15.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.8	5.0	11.2	9.2	0.9	0.3	3.6	13.0	0.3	8.2	4.2	7.2
HCM2KQueue:	3.2	16.8	24.4	19.0	6.6	2.3	6.8	29.2	2.1	16.4	18.2	22.2
70th%Factor:	1.19	1.17	1.15	1.16	1.18	1.19	1.18	1.15	1.19	1.17	1.16	1.16
HCM2k70thQ:	3.9	19.6	28.2	22.1	7.8	2.8	8.1	33.5	2.5	19.2	21.2	25.7
85th%Factor:	1.57	1.47	1.43	1.46	1.54	1.58	1.54	1.41	1.58	1.47	1.46	1.44
HCM2k85thQ:	5.1	24.7	35.0	27.7	10.2	3.6	10.5	41.3	3.4	24.2	26.6	32.0
90th%Factor:	1.74	1.57	1.52	1.55	1.69	1.76	1.68	1.49	1.76	1.58	1.56	1.53
HCM2k90thQ:	5.6	26.4	37.1	29.5	11.1	4.1	11.5	43.6	3.7	25.9	28.4	34.0
95th%Factor:	2.00	1.74	1.65	1.71	1.92	2.03	1.91	1.62	2.03	1.74	1.72	1.68
HCM2k95thQ:	6.5	29.2	40.4	32.4	12.6	4.7	13.1	47.3	4.3	28.6	31.3	37.1
98th%Factor:	2.48	1.97	1.85	1.93	2.30	2.54	2.29	1.81	2.55	1.98	1.95	1.88
HCM2k98thQ:	8.0	33.2	45.2	36.7	15.2	5.9	15.7	52.7	5.4	32.6	35.4	41.7

Cumul No Project PM Pk Hr With Recommended Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.982
Loss Time (sec): 12 Average Delay (sec/veh): 48.0
Optimal Cycle: 168 Level Of Service: D

Street Name:	West Lane						Armstrong Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	2 0	2 0	1	1 0	2 0	1	2 0	2 0	1
Volume Module:	PM Peak Hour											
Base Vol:	46	755	443	654	450	29	58	592	24	539	595	564
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	46	755	443	654	450	29	58	592	24	539	595	564
Added Vol:	0	59	0	0	86	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	46	814	443	654	536	29	58	592	24	539	595	564
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	50	885	482	711	583	32	63	643	26	586	647	613
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	885	482	711	583	32	63	643	26	586	647	613
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	885	482	711	583	32	63	643	26	586	647	613
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.90	0.93	0.83	0.93	0.93	0.83	0.90	0.93	0.83
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1769	3538	1583	3432	3538	1583	1769	3538	1583	3432	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.25	0.30	0.21	0.16	0.02	0.04	0.18	0.02	0.17	0.18	0.39
Crit Moves:			****	****				****		****		
Green/Cycle:	0.08	0.31	0.31	0.21	0.44	0.44	0.06	0.19	0.19	0.17	0.30	0.51
Volume/Cap:	0.37	0.81	0.98	0.98	0.37	0.04	0.61	0.98	0.09	0.98	0.61	0.76
Delay/Veh:	45.6	36.3	70.0	68.1	18.6	15.8	56.0	71.0	33.9	73.3	31.0	23.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.6	36.3	70.0	68.1	18.6	15.8	56.0	71.0	33.9	73.3	31.0	23.6
LOS by Move:	D	D	E	E	B	B	E	E	C	E	C	C
HCM2k95thQ:	95	651	865	716	246	22	148	679	34	627	418	621

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0 2 0 1			2 0 2 0 1			1 0 2 0 1			2 0 2 0 1		
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	1	2	1	2	2	1	1	2	1	2	2	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:		8			8			8			8	
% Hev Veh:		2			2			2			2	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:		Include			Include			Include			Include	
% RT Prtct:		0			0			0			0	
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Fnl Sat Adj:	0.93	0.93	0.83	0.90	0.93	0.83	0.93	0.93	0.83	0.90	0.93	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul No Project PM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.08	0.31	0.31	0.21	0.44	0.44	0.06	0.19	0.19	0.17	0.30	0.51
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.96	1.00	1.00	0.79	0.74	0.99	1.00	0.93	1.00	0.93	0.82
Q1:	1.3	11.4	13.2	10.1	4.4	0.4	1.7	9.4	0.6	8.3	7.5	11.2
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.6	3.4	7.2	6.4	0.6	0.0	1.2	6.1	0.1	5.8	1.5	2.8
HCM2KQueue:	1.9	14.8	20.4	16.5	5.0	0.4	2.9	15.5	0.7	14.1	9.0	14.0
70th%Factor:	1.20	1.17	1.16	1.17	1.19	1.20	1.19	1.17	1.20	1.17	1.18	1.17
HCM2k70thQ:	2.2	17.3	23.7	19.2	6.0	0.5	3.5	18.1	0.8	16.6	10.6	16.4
85th%Factor:	1.58	1.48	1.45	1.47	1.55	1.60	1.57	1.48	1.59	1.49	1.52	1.49
HCM2k85thQ:	2.9	21.9	29.7	24.3	7.8	0.7	4.6	22.9	1.0	21.0	13.7	20.8
90th%Factor:	1.76	1.59	1.54	1.58	1.71	1.79	1.75	1.58	1.79	1.60	1.66	1.60
HCM2k90thQ:	3.3	23.5	31.5	25.9	8.6	0.7	5.1	24.5	1.2	22.6	14.8	22.4
95th%Factor:	2.04	1.76	1.69	1.74	1.95	2.09	2.01	1.75	2.08	1.77	1.86	1.78
HCM2k95thQ:	3.8	26.0	34.6	28.7	9.8	0.9	5.9	27.1	1.4	25.1	16.7	24.9
98th%Factor:	2.57	2.02	1.91	1.98	2.38	2.67	2.50	2.00	2.65	2.04	2.20	2.04
HCM2k98thQ:	4.8	29.8	39.0	32.6	12.0	1.1	7.3	31.0	1.7	28.8	19.7	28.6

Cumul No Project PM Pk Hr With Recommended Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	1.089
Loss Time (sec):	12	Average Delay (sec/veh):	67.4
Optimal Cycle:	180	Level Of Service:	E

Street Name:	West Lane									Eight Mile Road								
Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Y+R:	4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0		
Lanes:	3	0	2	0	1	2	0	2	0	1	2	0	3	1	0	2	0	3	1	0
Volume Module:	PM Peak Hour																			
Base Vol:	770	782	112			140	713	405			663	1645	487			166	1629	96		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	770	782	112			140	713	405			663	1645	487			166	1629	96		
Added Vol:	28	0	87			31	0	0			0	174	42			68	120	21		
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0		
Initial Fut:	798	782	199			171	713	405			663	1819	529			234	1749	117		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92		
PHF Volume:	867	850	216			186	775	440			721	1977	575			254	1901	127		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	867	850	216			186	775	440			721	1977	575			254	1901	127		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
FinalVolume:	867	850	216			186	775	440			721	1977	575			254	1901	127		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900		
Adjustment:	0.90	0.93	0.83			0.90	0.93	0.83			0.90	0.86	0.86			0.90	0.88	0.88		
Lanes:	3.00	2.00	1.00			2.00	2.00	1.00			2.00	3.10	0.90			2.00	3.75	0.25		
Final Sat.:	5147	3538	1583			3432	3538	1583			3432	5072	1475			3432	6296	421		
Capacity Analysis Module:																				
Vol/Sat:	0.17	0.24	0.14			0.05	0.22	0.28			0.21	0.39	0.39			0.07	0.30	0.30		
Crit Moves:	****							****			****						****			
Green/Cycle:	0.15	0.33	0.33			0.08	0.26	0.26			0.19	0.39	0.39			0.08	0.28	0.28		
Volume/Cap:	1.09	0.72	0.41			0.72	0.86	1.09			1.09	0.99	0.99			0.99	1.09	1.09		
Delay/Veh:	101.3	31.3	26.2			54.5	43.7	108.2			102.2	44.7	44.7			98.5	85.9	85.9		
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
AdjDel/Veh:	101.3	31.3	26.2			54.5	43.7	108.2			102.2	44.7	44.7			98.5	85.9	85.9		
LOS by Move:	F	C	C			D	D	F			F	D	D			F	F	F		
HCM2k95thQ:	609	521	217			217	646	931			823	1139	1139			264	1025	1025		

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																				
Lanes:	3	0	2	0	1	2	0	2	0	1	2	0	3	1	0	2	0	3	1	0
Lane Group:	L		T		R	L		T		R	L		RT		RT	L		RT		RT
#LnsInGrps:	3		2		1	2		2		1	2		4		4	2		4		4
HCM Ops Input Saturation Adj Module:																				
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12
CrsswalkWid:			8					8					8					8		
% Hev Veh:			2					2					2					2		
Grade:			0%					0%					0%					0%		
Parking/Hr:			No					No					No					No		
Bus Stp/Hr:			0					0					0					0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >																			
Cnft Ped/Hr:			0					0					0					0		
ExclusiveRT:			Include					Include					Include					Include		
% RT Prtct:			0					0					0					0		
HCM Ops f(lt) Adj Case Module:																				
f(lt) Case:	1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx		
HCM Ops Saturation Adj Module:																				
Ln Wid Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Hev Veh Adj:	0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98		
Grade Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Parking Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00			xxxx	1.00	1.00		
Bus Stp Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00			xxxx	1.00	1.00		
Area Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
RT Adj:	xxxx	xxxx	0.85			xxxx	xxxx	0.85			xxxx	0.97	0.97			xxxx	0.99	0.99		
LT Adj:	0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx		
PedBike Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
HCM Sat Adj:	0.93	0.98	0.83			0.93	0.98	0.83			0.93	0.95	0.95			0.93	0.97	0.97		
Usr Sat Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Sat Adj:	0.97	0.95	1.00			0.97	0.95	1.00			0.97	0.91	0.91			0.97	0.91	0.91		
Fnl Sat Adj:	0.90	0.93	0.83			0.90	0.93	0.83			0.90	0.86	0.86			0.90	0.88	0.88		
Delay Adjustment Factor Module:																				
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >																			
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >																			
DelAdjFctr:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		

Cumul No Project PM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.15	0.33	0.33	0.08	0.26	0.26	0.19	0.39	0.39	0.08	0.28	0.28
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.93	0.88	0.99	0.98	1.00	1.00	0.99	0.99	1.00	1.00	1.00
Q1:	8.3	10.1	4.1	2.6	10.6	12.2	10.3	19.2	19.2	3.6	15.5	15.5
UpstreamVC:	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.07	0.07
UpstreamAdj:	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00
EarlyArrAdj:	0.34	0.55	0.50	1.00	1.00	1.00	1.00	1.00	1.00	0.22	0.49	0.49
Q2:	5.4	1.3	0.3	1.8	4.1	10.0	9.0	8.8	8.8	1.8	9.4	9.4
HCM2KQueue:	13.7	11.5	4.4	4.4	14.6	22.2	19.3	28.0	28.0	5.4	24.8	24.8
70th%Factor:	1.17	1.18	1.19	1.19	1.17	1.16	1.16	1.15	1.15	1.19	1.15	1.15
HCM2k70thQ:	16.0	13.5	5.3	5.2	17.1	25.7	22.4	32.2	32.2	6.4	28.7	28.7
85th%Factor:	1.49	1.50	1.56	1.56	1.48	1.44	1.46	1.42	1.42	1.55	1.43	1.43
HCM2k85thQ:	20.4	17.2	6.9	6.9	21.7	32.1	28.1	39.7	39.7	8.4	35.6	35.6
90th%Factor:	1.60	1.63	1.72	1.72	1.59	1.53	1.55	1.50	1.50	1.70	1.52	1.52
HCM2k90thQ:	21.9	18.6	7.6	7.6	23.3	34.1	30.0	42.0	42.0	9.3	37.7	37.7
95th%Factor:	1.78	1.82	1.97	1.97	1.77	1.67	1.71	1.63	1.63	1.94	1.65	1.65
HCM2k95thQ:	24.3	20.8	8.7	8.7	25.8	37.2	32.9	45.6	45.6	10.5	41.0	41.0
98th%Factor:	2.05	2.11	2.41	2.41	2.02	1.88	1.93	1.82	1.82	2.36	1.85	1.85
HCM2k98thQ:	28.0	24.2	10.6	10.6	29.6	41.8	37.2	50.9	50.9	12.8	45.9	45.9

Cumul No Project PM Pk Hr With Recommended Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.935
Loss Time (sec): 12 Average Delay (sec/veh): 40.0
Optimal Cycle: 128 Level Of Service: D

Street Name:	Ham Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	4 0	1	1 0	4 0	1
Volume Module:PM Peak Hour												
Base Vol:	9	35	24	419	19	67	153	1779	5	31	1822	416
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	35	24	419	19	67	153	1779	5	31	1822	416
Added Vol:	142	70	145	30	98	0	0	123	192	223	67	17
Pass-By:	56	0	55	0	0	0	0	-53	53	53	-53	0
Initial Fut:	207	105	224	449	117	67	153	1849	250	307	1836	433
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	225	114	243	488	127	73	166	2010	272	334	1996	471
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	225	114	243	488	127	73	166	2010	272	334	1996	471
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	225	114	243	488	127	73	166	2010	272	334	1996	471
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.93	0.93	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	1.00	1.00	1.00	0.64	0.36	1.00	4.00	1.00	1.00	4.00	1.00
Final Sat.:	1769	1862	1583	1769	1119	641	1769	6778	1583	1769	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.13	0.06	0.15	0.28	0.11	0.11	0.09	0.30	0.17	0.19	0.29	0.30
Crit Moves:		****		****				****		****		
Green/Cycle:	0.19	0.07	0.27	0.30	0.17	0.17	0.12	0.32	0.32	0.20	0.39	0.39
Volume/Cap:	0.67	0.93	0.58	0.93	0.67	0.67	0.75	0.93	0.54	0.93	0.75	0.75
Delay/Veh:	42.6	108	33.6	58.5	44.5	44.5	56.0	41.5	29.3	70.5	27.2	31.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.6	108	33.6	58.5	44.5	44.5	56.0	41.5	29.3	70.5	27.2	31.3
LOS by Move:	D	F	C	E	D	D	E	D	C	E	C	C
HCM2k95thQ:	351	310	323	810	326	326	254	803	299	528	596	528

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	1	0 1	1	0	0	1 0	1	0	4	0 1	1	0	4	0 1
Lane Group:	L		T	R	L		RT	RT	L		T	R	L		T	R
#LnsInGrps:	1		1	1	1		1	1	1		4	1	1		4	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.95	0.95		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.93	0.93		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.91	1.00		1.00	0.91	1.00	
Fnl Sat Adj:	0.93	0.98	0.83		0.93	0.93	0.93		0.93	0.89	0.83		0.93	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul No Project PM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.19	0.07	0.27		0.30	0.17	0.17		0.12	0.32	0.32		0.20	0.39	0.39	
ArrivalType:		4				4				4				4		
ProgFactor:	0.97	1.00	0.94		0.99	0.97	0.97		0.99	0.98	0.91		0.99	0.91	0.91	
Q1:	5.6	3.2	5.5		13.0	5.1	5.1		4.4	14.6	5.6		9.1	11.9	10.3	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.10	0.10	0.10		0.50	0.50	0.50	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		1.00	1.00	1.00		0.86	0.86	0.86	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.30	0.53	0.49		0.34	0.53	0.48	
Q2:	1.8	3.3	1.3		6.0	1.8	1.8		0.8	4.1	0.6		2.6	1.5	1.4	
HCM2KQueue:	7.4	6.5	6.8		19.0	6.8	6.8		5.2	18.8	6.2		11.6	13.3	11.6	
70th%Factor:	1.18	1.19	1.18		1.16	1.18	1.18		1.19	1.16	1.19		1.17	1.17	1.17	
HCM2k70thQ:	8.7	7.7	8.0		22.0	8.1	8.1		6.2	21.8	7.4		13.7	15.6	13.7	
85th%Factor:	1.53	1.54	1.54		1.46	1.54	1.54		1.55	1.46	1.54		1.50	1.49	1.50	
HCM2k85thQ:	11.3	10.0	10.4		27.7	10.5	10.5		8.1	27.4	9.6		17.5	19.9	17.5	
90th%Factor:	1.68	1.69	1.69		1.55	1.68	1.68		1.71	1.56	1.69		1.62	1.61	1.62	
HCM2k90thQ:	12.4	10.9	11.4		29.5	11.5	11.5		8.9	29.2	10.5		18.9	21.4	18.9	
95th%Factor:	1.90	1.92	1.91		1.71	1.91	1.91		1.95	1.71	1.92		1.81	1.79	1.81	
HCM2k95thQ:	14.0	12.4	12.9		32.4	13.0	13.0		10.2	32.1	12.0		21.1	23.8	21.1	
98th%Factor:	2.27	2.31	2.29		1.93	2.29	2.29		2.37	1.94	2.32		2.11	2.06	2.11	
HCM2k98thQ:	16.8	14.9	15.5		36.6	15.6	15.6		12.4	36.3	14.4		24.5	27.5	24.5	

Cumul No Project PM Pk Hr With Recommended Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

Cycle (sec):	100	Critical Vol./Cap.(X):	0.921
Loss Time (sec):	12	Average Delay (sec/veh):	41.3
Optimal Cycle:	120	Level Of Service:	D

Street Name:	Holman Road											Lt. Col. Mark Taylor Street											
Approach:	North Bound				South Bound				East Bound				West Bound										
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected							
Rights:	Ovl					Include					Include					Include							
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0					
Y+R:	4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0					
Lanes:	1	0	3	0	1	2	0	3	0	1	1	0	1	0	1	1	0	1	0	1			
Volume Module:	PM Peak Hour																						
Base Vol:	59	463	278			315	290	28			55	571	30			335	569	257					
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00					
Initial Bse:	59	463	278			315	290	28			55	571	30			335	569	257					
Added Vol:	25	3	0			12	2	22			15	116	17			0	174	13					
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0					
Initial Fut:	84	466	278			327	292	50			70	687	47			335	743	270					
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00					
PHF Adj:	0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92					
PHF Volume:	91	507	302			355	317	54			76	747	51			364	808	293					
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0					
Reduced Vol:	91	507	302			355	317	54			76	747	51			364	808	293					
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00					
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00					
FinalVolume:	91	507	302			355	317	54			76	747	51			364	808	293					
Saturation Flow Module:																							
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900					
Adjustment:	0.93	0.89	0.83			0.90	0.89	0.83			0.93	0.98	0.83			0.93	0.98	0.83					
Lanes:	1.00	3.00	1.00			2.00	3.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00					
Final Sat.:	1769	5083	1583			3432	5083	1583			1769	1862	1583			1769	1862	1583					
Capacity Analysis Module:																							
Vol/Sat:	0.05	0.10	0.19			0.10	0.06	0.03			0.04	0.40	0.03			0.21	0.43	0.19					
Crit Moves:		****				****						****				****							
Green/Cycle:	0.10	0.11	0.33			0.11	0.12	0.12			0.06	0.44	0.44			0.22	0.60	0.60					
Volume/Cap:	0.52	0.92	0.58			0.92	0.52	0.28			0.72	0.92	0.07			0.92	0.72	0.31					
Delay/Veh:	45.4	65.1	29.2			70.8	42.0	40.8			68.0	42.2	16.5			64.4	16.5	10.0					
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00					
AdjDel/Veh:	45.4	65.1	29.2			70.8	42.0	40.8			68.0	42.2	16.5			64.4	16.5	10.0					
LOS by Move:	D	E	C			E	D	D			E	D	B			E	B	B					
HCM2k95thQ:	129	309	322			416	196	88			127	974	35			654	587	132					

Note: Queue reported is the distance per lane in feet.

Cumul No Project PM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																				
Lanes:	1	0	3	0	1	2	0	3	0	1	1	0	1	0	1	1	0	1	0	1
Lane Group:	L		T		R	L		T		R	L		T		R	L		T		R
#LnsInGrps:	1		3		1	2		3		1	1		1		1	1		1		1
HCM Ops Input Saturation Adj Module:																				
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12
CrsswalkWid:			8					8					8					8		
% Hev Veh:			2					2					2					2		
Grade:			0%					0%					0%					0%		
Parking/Hr:			No					No					No					No		
Bus Stp/Hr:			0					0					0					0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																			
Cnft Ped/Hr:			0					0					0					0		
ExclusiveRT:			Include					Include					Include					Include		
% RT Prtct:			0					0					0					0		
HCM Ops f(lt) Adj Case Module:																				
f(lt) Case:	1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx		
HCM Ops Saturation Adj Module:																				
Ln Wid Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Hev Veh Adj:	0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98		
Grade Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Parking Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00		
Bus Stp Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00		
Area Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
RT Adj:	xxxx	xxxx	0.85			xxxx	xxxx	0.85			xxxx	xxxx	0.85			xxxx	xxxx	0.85		
LT Adj:	0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx		
PedBike Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
HCM Sat Adj:	0.93	0.98	0.83			0.93	0.98	0.83			0.93	0.98	0.83			0.93	0.98	0.83		
Usr Sat Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Sat Adj:	1.00	0.91	1.00			0.97	0.91	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Fnl Sat Adj:	0.93	0.89	0.83			0.90	0.89	0.83			0.93	0.98	0.83			0.93	0.98	0.83		
Delay Adjustment Factor Module:																				
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																			
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >																			
DelAdjFctr:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		

Cumul No Project PM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.10	0.11	0.33	0.11	0.12	0.12	0.06	0.44	0.44	0.22	0.60	0.60
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	1.00	0.91	1.00	0.98	0.97	0.99	0.96	0.75	0.99	0.67	0.54
Q1:	2.4	5.1	6.3	5.0	3.0	1.3	2.1	18.7	0.6	9.8	10.7	2.2
UpstreamVC:	0.67	0.67	0.67	0.00	0.00	0.00	0.05	0.05	0.05	0.00	0.00	0.00
UpstreamAdj:	0.69	0.69	0.69	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
EarlyArrAdj:	0.18	0.19	0.34	1.00	1.00	1.00	0.19	0.65	0.59	1.00	1.00	1.00
Q2:	0.2	1.3	0.5	3.9	1.0	0.4	0.4	4.7	0.0	5.1	2.5	0.4
HCM2KQueue:	2.5	6.4	6.7	8.9	4.0	1.7	2.5	23.4	0.7	14.8	13.1	2.6
70th%Factor:	1.19	1.19	1.18	1.18	1.19	1.20	1.19	1.16	1.20	1.17	1.17	1.19
HCM2k70thQ:	3.0	7.6	8.0	10.5	4.7	2.1	3.0	27.1	0.8	17.4	15.4	3.1
85th%Factor:	1.58	1.54	1.54	1.52	1.56	1.58	1.58	1.44	1.59	1.48	1.49	1.57
HCM2k85thQ:	4.0	9.9	10.4	13.6	6.2	2.7	4.0	33.7	1.1	22.0	19.6	4.1
90th%Factor:	1.75	1.69	1.69	1.66	1.73	1.77	1.75	1.52	1.79	1.59	1.61	1.75
HCM2k90thQ:	4.5	10.9	11.4	14.8	6.8	3.0	4.4	35.7	1.2	23.6	21.1	4.6
95th%Factor:	2.02	1.92	1.91	1.87	1.98	2.05	2.02	1.66	2.08	1.76	1.79	2.02
HCM2k95thQ:	5.2	12.3	12.9	16.6	7.8	3.5	5.1	39.0	1.4	26.2	23.5	5.3
98th%Factor:	2.52	2.31	2.30	2.20	2.44	2.58	2.52	1.87	2.65	2.02	2.06	2.52
HCM2k98thQ:	6.4	14.9	15.5	19.7	9.6	4.4	6.3	43.7	1.8	30.0	27.1	6.6

Cumul No Project PM Pk Hr With Recommended Improvements

Future Queue Length Report (feet)

Node	Intersection	Northbound L	T	R	Southbound L	T	R	Eastbound L	T	R	Westbound L	T	R
#3	[HCM2k95thQ]:	376	836	345	651	471	366	355	581	92	230	1073	1073
#5	[HCM2k95thQ]:	162	729	1010	811	316	117	327	1182	108	715	782	928
#6	[HCM2k95thQ]:	95	651	865	716	246	22	148	679	34	627	418	621
#8	[HCM2k95thQ]:	609	521	217	217	646	931	823	1139	1139	264	1025	1025
#9	[HCM2k95thQ]:	351	310	323	810	326	326	254	803	299	528	596	528
#17	[HCM2k95thQ]:	129	309	322	416	196	88	127	974	35	654	587	132

Cumul + Project AM Pk Hr - With Mitigation Measures

Scenario Report

Scenario:	Cumul + Proj AM
Command:	Cumul + Proj AM
Volume:	Cumul Proj AM
Geometry:	Cumul Proj
Impact Fee:	Default Impact Fee
Trip Generation:	AM Pk Hr
Trip Distribution:	Cumul No Bridge AM
Paths:	Cumul Proj
Routes:	Default Route
Configuration:	Default Configuration

Cumul + Project AM Pk Hr - With Mitigation Measures

Trip Generation Report

Forecast for AM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	750.00	ElemSchStudent	0.25	0.20	188	150	338	24.0
1	Village West	745.00	Tra Vigne SFDU	0.18	0.53	134	395	529	37.5
1	Village West	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	0.60	0.36	0	0	0	0.0
1	Village West	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt MFDU	0.10	0.41	0	0	0	0.0
1	Village West	1.00	Tra V Internal	-6.00	-6.00	-6	-6	-12	-0.9
1	Village West	0.00	GP Alt Interna	-7.00	-7.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-11.00	-7.00	0	0	0	0.0
1	Village West	0.00	Tra Vigne MFDU	0.10	0.40	0	0	0	0.0
	Zone 1 Subtotal					316	539	855	60.6
2	Village East	418.00	Tra Vigne SFDU	0.18	0.53	75	222	297	21.1
2	Village East	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
	Zone 2 Subtotal					75	222	297	21.1
3	Commercial	101.50	Tra V Comm KSF	0.60	0.36	61	37	98	7.0
3	Commercial	1.00	Tra V Pass-By	-9.00	-5.00	-9	-5	-14	-1.0
	Zone 3 Subtotal					52	32	84	6.0
4	Industrial	21.40	Indust KSF	0.15	0.03	3	1	4	0.3
	Zone 4 Subtotal					3	1	4	0.3
5	Hi Dens Res	340.00	Tra Vigne MFDU	0.10	0.40	34	136	170	12.1
	Zone 5 Subtotal					34	136	170	12.1
TOTAL						480	930	1410	100.0

Cumul + Project AM Pk Hr - With Mitigation Measures

Trip Distribution Report

Percent Of Trips Cumul No Bridge AM

To Gates

Zone	1	2	3	4	5	6	7	8	9	10	11
1	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	1.0
2	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	1.0
3	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	1.0
4	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	1.0
5	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	1.0

To Gates

Zone	14	15	16	18	19	20	21	22	23	24	25
1	1.0	2.0	5.0	2.0	26.0	9.0	1.0	2.0	12.0	6.0	0.0
2	1.0	2.0	5.0	2.0	26.0	9.0	1.0	2.0	12.0	6.0	0.0
3	1.0	2.0	5.0	2.0	26.0	9.0	1.0	2.0	12.0	6.0	0.0
4	1.0	2.0	5.0	2.0	26.0	9.0	1.0	2.0	12.0	6.0	0.0
5	1.0	2.0	5.0	2.0	26.0	9.0	1.0	2.0	12.0	6.0	0.0

To Gates

Zone	26
1	2.0
2	2.0
3	2.0
4	2.0
5	2.0

Cumul + Project AM Pk Hr - With Mitigation Measures

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 5 Eight Mile & Lower Sacto Rd	C	33.7	0.798	D	35.2	0.847	+ 1.473 D/V
# 6 West Lane & Armstrong Road	C	32.1	0.743	C	32.2	0.743	+ 0.048 D/V

Cumul + Project AM Pk Hr - With Mitigation Measures

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]

Cumul + Project AM Pk Hr - With Mitigation Measures

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

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Intersection #5 Eight Mile & Lower Sacto Rd

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Cycle (sec):	100	Critical Vol./Cap.(X):	0.847
Loss Time (sec):	12	Average Delay (sec/veh):	35.2
Optimal Cycle:	90	Level Of Service:	D

****

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	4 0	1	2 0	4 0	1
Volume Module:	AM Peak Hour											
Base Vol:	109	375	232	543	585	107	133	1418	89	454	1436	287
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	109	375	232	543	585	107	133	1418	89	454	1436	287
Added Vol:	0	0	24	10	0	0	0	53	0	46	102	19
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	109	375	256	553	585	107	133	1471	89	500	1538	306
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	118	408	278	601	636	116	145	1599	97	543	1672	333
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	408	278	601	636	116	145	1599	97	543	1672	333
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	118	408	278	601	636	116	145	1599	97	543	1672	333
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.12	0.18	0.18	0.18	0.07	0.04	0.24	0.06	0.16	0.25	0.21
Crit Moves:			****	****				****		****		
Green/Cycle:	0.07	0.21	0.21	0.21	0.35	0.35	0.07	0.28	0.28	0.19	0.40	0.40
Volume/Cap:	0.52	0.55	0.85	0.85	0.52	0.21	0.62	0.85	0.22	0.85	0.62	0.53
Delay/Veh:	47.2	36.4	56.2	47.5	26.3	23.2	50.4	37.8	28.0	49.5	24.5	23.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.2	36.4	56.2	47.5	26.3	23.2	50.4	37.8	28.0	49.5	24.5	23.8
LOS by Move:	D	D	E	D	C	C	D	D	C	D	C	C
HCM2k95thQ:	130	302	496	533	360	111	166	666	108	500	481	339

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Note: Queue reported is the distance per lane in feet.

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Cumul + Project AM Pk Hr - With Mitigation Measures

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	0	1	2	0 2	0	1	2	0 4	0	1	2	0 4	0	1
Lane Group:	L	T		R	L	T		R	L	T		R	L	T		R
#LnsInGrps:	2	2		1	2	2		1	2	4		1	2	4		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project AM Pk Hr - With Mitigation Measures

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.07	0.21	0.21		0.21	0.35	0.35		0.07	0.28	0.28		0.19	0.40	0.40	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.95	0.98		0.98	0.89	0.84		0.99	0.97	0.89		0.99	0.88	0.86	
Q1:	1.6	5.1	7.3		8.1	6.6	1.9		2.0	11.2	1.8		7.4	8.9	6.0	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.9	1.2	3.5		3.6	1.0	0.3		1.3	4.0	0.3		3.5	1.6	1.1	
HCM2KQueue:	2.6	6.3	10.8		11.8	7.6	2.2		3.3	15.1	2.1		11.0	10.5	7.1	
70th%Factor:	1.19	1.19	1.18		1.17	1.18	1.19		1.19	1.17	1.19		1.18	1.18	1.18	
HCM2k70thQ:	3.1	7.4	12.8		13.8	9.0	2.6		4.0	17.7	2.5		12.9	12.4	8.4	
85th%Factor:	1.58	1.54	1.51		1.50	1.53	1.58		1.57	1.48	1.58		1.51	1.51	1.54	
HCM2k85thQ:	4.0	9.7	16.4		17.7	11.7	3.5		5.2	22.4	3.3		16.5	15.9	10.9	
90th%Factor:	1.75	1.69	1.63		1.62	1.67	1.76		1.74	1.59	1.76		1.63	1.64	1.68	
HCM2k90thQ:	4.5	10.6	17.7		19.1	12.7	3.8		5.8	24.0	3.7		17.9	17.2	12.0	
95th%Factor:	2.02	1.92	1.83		1.81	1.89	2.03		2.00	1.76	2.03		1.83	1.83	1.90	
HCM2k95thQ:	5.2	12.1	19.8		21.3	14.4	4.4		6.6	26.6	4.3		20.0	19.3	13.6	
98th%Factor:	2.52	2.32	2.13		2.10	2.26	2.55		2.47	2.01	2.55		2.13	2.15	2.28	
HCM2k98thQ:	6.5	14.5	23.1		24.8	17.2	5.6		8.2	30.5	5.4		23.3	22.5	16.2	

Cumul + Project AM Pk Hr - With Mitigation Measures

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.743
Loss Time (sec):	12	Average Delay (sec/veh):	32.2
Optimal Cycle:	66	Level Of Service:	C

Street Name:	West Lane								Armstrong Road			
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Ovl			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 2	0 1		2	0 2	0 1		1	0 2	0 1		2	0 2	0 1	
Volume Module:	AM Peak Hour															
Base Vol:	29	373	260		586	531	27		36	433	23		494	441	330	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	29	373	260		586	531	27		36	433	23		494	441	330	
Added Vol:	0	65	0		0	34	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	29	438	260		586	565	27		36	433	23		494	441	330	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	32	476	283		637	614	29		39	471	25		537	479	359	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	32	476	283		637	614	29		39	471	25		537	479	359	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	32	476	283		637	614	29		39	471	25		537	479	359	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.93	0.83		0.90	0.93	0.83		0.93	0.93	0.83		0.90	0.93	0.83	
Lanes:	1.00	2.00	1.00		2.00	2.00	1.00		1.00	2.00	1.00		2.00	2.00	1.00	
Final Sat.:	1769	3538	1583		3432	3538	1583		1769	3538	1583		3432	3538	1583	
Capacity Analysis Module:																
Vol/Sat:	0.02	0.13	0.18		0.19	0.17	0.02		0.02	0.13	0.02		0.16	0.14	0.23	
Crit Moves:			****		****					****			****			
Green/Cycle:	0.05	0.24	0.24		0.25	0.44	0.44		0.05	0.18	0.18		0.21	0.34	0.58	
Volume/Cap:	0.39	0.56	0.74		0.74	0.39	0.04		0.40	0.74	0.09		0.74	0.40	0.39	
Delay/Veh:	49.5	34.2	42.8		38.1	18.8	15.7		48.4	43.6	34.4		41.1	25.8	11.4	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	49.5	34.2	42.8		38.1	18.8	15.7		48.4	43.6	34.4		41.1	25.8	11.4	
LOS by Move:	D	C	D		D	B	B		D	D	C		D	C	B	
HCM2k95thQ:	73	333	437		483	262	20		85	408	33		436	263	187	

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr - With Mitigation Measures

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 2	0 1		2	0 2	0 1		1	0 2	0 1		2	0 2	0 1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	2	1		2	2	1		1	2	1		2	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		0.97	0.95	1.00		1.00	0.95	1.00		0.97	0.95	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.90	0.93	0.83		0.93	0.93	0.83		0.90	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project AM Pk Hr - With Mitigation Measures

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.05	0.24	0.24	0.25	0.44	0.44	0.05	0.18	0.18	0.21	0.34	0.58
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.94	0.96	0.96	0.79	0.74	0.99	0.98	0.93	0.97	0.88	0.59
Q1:	0.8	5.8	7.0	8.1	4.8	0.3	1.0	6.4	0.5	7.0	4.7	3.1
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.6	1.2	2.4	2.5	0.6	0.0	0.6	2.4	0.1	2.4	0.7	0.6
HCM2KQueue:	1.4	7.0	9.4	10.5	5.4	0.4	1.7	8.7	0.6	9.4	5.4	3.8
70th%Factor:	1.20	1.18	1.18	1.18	1.19	1.20	1.20	1.18	1.20	1.18	1.19	1.19
HCM2k70thQ:	1.7	8.3	11.1	12.4	6.4	0.5	2.0	10.3	0.8	11.1	6.4	4.5
85th%Factor:	1.59	1.54	1.52	1.51	1.55	1.60	1.58	1.52	1.59	1.52	1.55	1.56
HCM2k85thQ:	2.3	10.7	14.3	15.9	8.4	0.6	2.6	13.3	1.0	14.3	8.4	5.9
90th%Factor:	1.77	1.68	1.65	1.64	1.71	1.79	1.77	1.66	1.79	1.65	1.71	1.73
HCM2k90thQ:	2.5	11.7	15.5	17.3	9.2	0.7	2.9	14.5	1.1	15.5	9.2	6.5
95th%Factor:	2.05	1.91	1.86	1.83	1.94	2.09	2.05	1.87	2.08	1.86	1.94	1.99
HCM2k95thQ:	2.9	13.3	17.5	19.3	10.5	0.8	3.4	16.3	1.3	17.4	10.5	7.5
98th%Factor:	2.60	2.28	2.18	2.14	2.36	2.67	2.58	2.21	2.65	2.19	2.36	2.45
HCM2k98thQ:	3.7	15.9	20.6	22.6	12.7	1.0	4.3	19.3	1.7	20.5	12.7	9.2

Cumul + Project AM Pk Hr - With Mitigation Measures

Future Queue Length Report (feet)

Node	Intersection	Northbound L	-- T	-- R	Southbound L	-- T	-- R	Eastbound L	-- T	-- R	Westbound L	-- T	-- R
#5	[HCM2k95thQ]:	130	302	496	533	360	111	166	666	108	500	481	339
#6	[HCM2k95thQ]:	73	333	437	483	262	20	85	408	33	436	263	187

Cumul + Project AM Pk Hr

Scenario Report

Scenario:	Cumul + Proj AM
Command:	Cumul + Proj AM
Volume:	Cumul Proj AM
Geometry:	Cumul Proj
Impact Fee:	Default Impact Fee
Trip Generation:	AM Pk Hr
Trip Distribution:	Cumul No Bridge AM
Paths:	Cumul Proj
Routes:	Default Route
Configuration:	Default Configuration

Cumul + Project AM Pk Hr

Trip Generation Report

Forecast for AM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	750.00	ElemSchStudent	0.25	0.20	188	150	338	24.0
1	Village West	745.00	Tra Vigne SFDU	0.18	0.53	134	395	529	37.5
1	Village West	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	0.60	0.36	0	0	0	0.0
1	Village West	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt MFDU	0.10	0.41	0	0	0	0.0
1	Village West	1.00	Tra V Internal	-6.00	-6.00	-6	-6	-12	-0.9
1	Village West	0.00	GP Alt Interna	-7.00	-7.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-11.00	-7.00	0	0	0	0.0
1	Village West	0.00	Tra Vigne MFDU	0.10	0.40	0	0	0	0.0
	Zone 1 Subtotal					316	539	855	60.6
2	Village East	418.00	Tra Vigne SFDU	0.18	0.53	75	222	297	21.1
2	Village East	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
	Zone 2 Subtotal					75	222	297	21.1
3	Commercial	101.50	Tra V Comm KSF	0.60	0.36	61	37	98	7.0
3	Commercial	1.00	Tra V Pass-By	-9.00	-5.00	-9	-5	-14	-1.0
	Zone 3 Subtotal					52	32	84	6.0
4	Industrial	21.40	Indust KSF	0.15	0.03	3	1	4	0.3
	Zone 4 Subtotal					3	1	4	0.3
5	Hi Dens Res	340.00	Tra Vigne MFDU	0.10	0.40	34	136	170	12.1
	Zone 5 Subtotal					34	136	170	12.1
TOTAL						480	930	1410	100.0

Cumul + Project AM Pk Hr

Trip Distribution Report

Percent Of Trips Cumul No Bridge AM

Zone	To Gates 1	2	3	4	5	6	7	8	9	10	11
1	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	1.0
2	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	1.0
3	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	1.0
4	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	1.0
5	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	1.0

Zone	To Gates 14	15	16	18	19	20	21	22	23	24	25
1	1.0	2.0	5.0	2.0	26.0	9.0	1.0	2.0	12.0	6.0	0.0
2	1.0	2.0	5.0	2.0	26.0	9.0	1.0	2.0	12.0	6.0	0.0
3	1.0	2.0	5.0	2.0	26.0	9.0	1.0	2.0	12.0	6.0	0.0
4	1.0	2.0	5.0	2.0	26.0	9.0	1.0	2.0	12.0	6.0	0.0
5	1.0	2.0	5.0	2.0	26.0	9.0	1.0	2.0	12.0	6.0	0.0

Zone	To Gates 26
1	2.0
2	2.0
3	2.0
4	2.0
5	2.0

Cumul + Project AM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	D	36.3	0.824	D	37.0	0.843	+ 0.670 D/V
# 4 Eight Mile Rd & Davis Rd	C	32.6	0.671	C	32.7	0.685	+ 0.073 D/V
# 5 Eight Mile & Lower Sacto Rd	C	34.3	0.798	D	36.0	0.847	+ 1.655 D/V
# 6 West Lane & Armstrong Road	E	71.1	1.108	E	71.0	1.108	-0.105 D/V
# 7 West Lane & Ham Lane	B	11.6	0.387	B	11.5	0.415	-0.078 D/V
# 8 Eight Mile Rd & West Ln	D	40.3	0.888	D	45.1	0.949	+ 4.758 D/V
# 9 Eight Mile Road & Ham Lane	B	14.5	0.311	C	17.1	0.405	+ 2.608 D/V
# 10 Eight Mile & Leach Rd/St G	B	19.8	0.610	C	25.7	0.739	+ 5.856 D/V
# 11 Eight Mile & MickeGrove/Holman	C	29.0	0.684	C	30.8	0.818	+ 1.742 D/V
# 12 Eight Mile & SR 99 W Frontage	C	25.3	0.654	C	25.3	0.669	+ 0.009 D/V
# 13 Eight Mile & SR 99 E Frontage	A	3.9	0.177	A	3.8	0.179	-0.032 D/V
# 16 West & L.C.MarkTaylor/Marlette	B	15.0	0.432	C	26.3	0.614	+11.310 D/V
# 17 Holman & Lt Col Mark Taylor	D	41.4	0.838	D	41.1	0.838	-0.260 D/V
# 18 Morada Lane & West Lane	C	30.4	0.653	C	30.9	0.696	+ 0.513 D/V
# 19 Morada Lane & Holman Road	C	33.4	0.515	C	33.4	0.528	+ 0.004 D/V
# 22 Morada Ln & SR99 W Frontage Rd	C	24.3	0.411	C	24.2	0.411	-0.053 D/V
# 24 West Ln & West Ln Frontage Rd	C	25.0	0.740	C	24.9	0.784	-0.128 D/V
# 25 West Lane & Knickerbocker Dr	C	24.1	0.707	C	23.8	0.751	-0.268 D/V
# 26 West Lane & Hammer Lane	C	34.5	0.790	C	34.4	0.790	-0.039 D/V
# 27 Hammer Lane & Holman Road	C	33.8	0.771	C	33.8	0.771	+ 0.006 D/V
# 51 Eight Mile & Commercial DW #1	A	0.0	0.000	B	11.7	0.006	+11.741 D/V
# 52 Eight Mile & Commercial DW #2	A	0.0	0.000	B	11.8	0.014	+11.830 D/V
# 53 Eight Mile Road & Road C	A	0.6	0.292	B	12.2	0.496	+11.608 D/V
# 54 West Lane & Commercial DW #3	A	0.0	0.000	B	10.2	0.009	+10.225 D/V

Cumul + Project AM Pk Hr

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 55 West Lane & Commercial DW #4	A	0.0	0.000	B	10.2	0.003	+10.200 D/V
# 56 West Lane & Road A	A	0.0	0.000	B	11.1	0.137	+11.102 D/V
# 57 Eight Mile & Hi Dens Res DW #1	A	0.0	0.000	B	13.2	0.145	+13.229 D/V
# 58 Eight Mile & Hi Dens Res DW #2	A	0.0	0.000	B	13.4	0.148	+13.432 D/V
# 60 Eight Mile & Industrial DW #1	A	0.0	0.000	B	11.0	0.002	+11.004 D/V
# 61 Eight Mile & Industrial DW #2	A	0.0	0.000	B	11.0	0.002	+11.002 D/V

Cumul + Project AM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 9 Eight Mile Road & Ham Lane	??? / ???	No / Yes
# 51 Eight Mile & Commercial DW #1	??? / ???	No / No
# 52 Eight Mile & Commercial DW #2	??? / ???	No / No
# 54 West Lane & Commercial DW #3	??? / ???	No / No
# 55 West Lane & Commercial DW #4	??? / ???	No / No
# 56 West Lane & Road A	??? / ???	No / No
# 57 Eight Mile & Hi Dens Res DW #1	??? / ???	No / No
# 58 Eight Mile & Hi Dens Res DW #2	??? / ???	No / No
# 60 Eight Mile & Industrial DW #1	??? / ???	No / No
# 61 Eight Mile & Industrial DW #2	??? / ???	No / No

Cumul + Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #9 Eight Mile Road & Ham Lane

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	0	0	1	0	0	4	0	0	0	0	3	1	0
Initial Vol:	0		0		0	0		0		185	0	1814			0	0	1679			128
ApproachDel:	xxxxxx					17.1					xxxxxx					xxxxxx				

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.9]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=185]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3806]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul + Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #9 Eight Mile Road & Ham Lane

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	0	0	1	0	0	4	0	0	0	0	3	1	0
Initial Vol:	0		0		0	0		0		185	0	1814			0	0	1679			128

Major Street Volume: 3621
Minor Approach Volume: 185
Minor Approach Volume Threshold: -158 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #51 Eight Mile & Commercial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	0	1	0	0	4	0	0
Initial Vol:	0	0			3	0	0			0	0				1742	9	0			1856	0
ApproachDel:	11.7					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=3]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3610]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul + Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #51 Eight Mile & Commercial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	0	1	0	0	4	0	0
Initial Vol:	0	0			3	0	0			0	0				1742	9	0			1856	0

Major Street Volume: 3607
Minor Approach Volume: 3
Minor Approach Volume Threshold: -157 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul + Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #52 Eight Mile & Commercial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Initial Vol:	0		0		7	0		0		0	0		1736		9	0		1856		0
ApproachDel:	11.8					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=7]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3608]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul + Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #52 Eight Mile & Commercial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Initial Vol:	0		0		7	0		0		0	0		1736		9	0		1856		0

Major Street Volume: 3601
Minor Approach Volume: 7
Minor Approach Volume Threshold: -157 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #54 West Lane & Commercial DW #3

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	3	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1084		11		0	1578		0		0	0		0		0	0		0	6
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					10.2				

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=6]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2679]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #54 West Lane & Commercial DW #3

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	3	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1084		11		0	1578		0		0	0		0		0	0		0	6

Major Street Volume: 2673
Minor Approach Volume: 6
Minor Approach Volume Threshold: -54 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #55 West Lane & Commercial DW #4

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1094			8	0	1578			0	0		0		0	0		0		2
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					10.2				

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=2]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2682]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #55 West Lane & Commercial DW #4

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1094			8	0	1578			0	0		0		0	0		0		2

Major Street Volume: 2680
Minor Approach Volume: 2
Minor Approach Volume Threshold: -55 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul + Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #56 West Lane & Road A

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1016			67	0	1578			0	0		0		0	0		0		86
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					11.1				

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=86]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2747]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul + Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #56 West Lane & Road A

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1016			67	0	1578			0	0		0		0	0		0		86

Major Street Volume: 2661
Minor Approach Volume: 86
Minor Approach Volume Threshold: -52 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #57 Eight Mile & Hi Dens Res DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Initial Vol:	0		0		68	0		0		0	0		1830		17	0		1840		0
ApproachDel:	13.2					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=68]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3755]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #57 Eight Mile & Hi Dens Res DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Initial Vol:	0		0		68	0		0		0	0		1830		17	0		1840		0

Major Street Volume: 3687
Minor Approach Volume: 68
Minor Approach Volume Threshold: -165 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #58 Eight Mile & Hi Dens Res DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Initial Vol:	0		0		68	0		0		0	0		1881		17	0		1840		0
ApproachDel:	13.4					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=68]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3806]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #58 Eight Mile & Hi Dens Res DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Initial Vol:	0		0		68	0		0		0	0		1881		17	0		1840		0

Major Street Volume: 3738
Minor Approach Volume: 68
Minor Approach Volume Threshold: -169 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #60 Eight Mile & Industrial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	1	0	0	0	4	0	0
Initial Vol:	0		0		1	0		0		0	0		1830		2	0		1701		0
ApproachDel:	11.0					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=1]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3534]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #60 Eight Mile & Industrial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	1	0	0	0	4	0	0
Initial Vol:	0		0		1	0		0		0	0		1830		2	0		1701		0

Major Street Volume: 3533
Minor Approach Volume: 1
Minor Approach Volume Threshold: -150 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #61 Eight Mile & Industrial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	1	0	0	0	4	0	0
Initial Vol:	0		0		1	0		0		0	0		1829		2	0		1701		0
ApproachDel:	11.0					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=1]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3533]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #61 Eight Mile & Industrial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	1	0	0	0	4	0	0
Initial Vol:	0		0		1	0		0		0	0		1829		2	0		1701		0

Major Street Volume: 3532
Minor Approach Volume: 1
Minor Approach Volume Threshold: -150 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.843
Loss Time (sec):	12	Average Delay (sec/veh):	37.0
Optimal Cycle:	88	Level Of Service:	D

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	AM Peak Hour											
Base Vol:	125	350	114	445	601	207	241	1352	106	236	1405	228
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	125	350	114	445	601	207	241	1352	106	236	1405	228
Added Vol:	0	0	5	10	0	0	0	24	0	9	46	19
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	125	350	119	455	601	207	241	1376	106	245	1451	247
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	136	380	129	495	653	225	262	1496	115	266	1577	268
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	136	380	129	495	653	225	262	1496	115	266	1577	268
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	136	380	129	495	653	225	262	1496	115	266	1577	268
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	3.42	0.58
Final Sat.:	1769	3538	1583	1769	3538	1583	3432	6778	1583	3432	5664	964
Capacity Analysis Module:												
Vol/Sat:	0.08	0.11	0.08	0.28	0.18	0.14	0.08	0.22	0.07	0.08	0.28	0.28
Crit Moves:		****		****			****				****	
Green/Cycle:	0.13	0.13	0.13	0.33	0.32	0.32	0.09	0.31	0.31	0.11	0.33	0.33
Volume/Cap:	0.57	0.84	0.64	0.84	0.57	0.44	0.84	0.71	0.23	0.71	0.84	0.84
Delay/Veh:	43.8	56.1	48.2	41.7	28.7	27.2	63.2	31.6	25.8	49.1	34.2	34.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.8	56.1	48.2	41.7	28.7	27.2	63.2	31.6	25.8	49.1	34.2	34.2
LOS by Move:	D	E	D	D	C	C	E	C	C	D	C	C
HCM2k95thQ:	229	402	239	707	397	251	213	469	110	203	638	638

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	1	0	2	0	1		1	0	2	0	1		2	0	4	0	1		2	0	3	1	0	
Lane Group:	L		T		R		L		T		R		L		T		R		L		RT		RT	
#LnsInGrps:	1		2		1		1		2		1		2		4		1		2		4		4	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:			8						8						8						8			
% Hev Veh:			2						2						2						2			
Grade:			0%						0%						0%						0%			
Parking/Hr:			No						No						No						No			
Bus Stp/Hr:			0						0						0						0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0						0						0						0			
ExclusiveRT:			Include						Include						Include						Include			
% RT Prtct:			0						0						0						0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx		
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
Hev Veh Adj:	0.98	0.98		0.98			0.98	0.98		0.98			0.98	0.98		0.98			0.98	0.98		0.98		
Grade Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
Parking Adj:	xxxx	xxxx		1.00			xxxx	xxxx		1.00			xxxx	xxxx		1.00			xxxx	1.00		1.00		
Bus Stp Adj:	xxxx	xxxx		1.00			xxxx	xxxx		1.00			xxxx	xxxx		1.00			xxxx	1.00		1.00		
Area Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
RT Adj:	xxxx	xxxx		0.85			xxxx	xxxx		0.85			xxxx	xxxx		0.85			xxxx	0.98		0.98		
LT Adj:	0.95	xxxx		xxxxx			0.95	xxxx		xxxxx			0.95	xxxx		xxxxx			0.95	xxxx		xxxxx		
PedBike Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
HCM Sat Adj:	0.93	0.98		0.83			0.93	0.98		0.83			0.93	0.98		0.83			0.93	0.96		0.96		
Usr Sat Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
MLF Sat Adj:	1.00	0.95		1.00			1.00	0.95		1.00			0.97	0.91		1.00			0.97	0.91		0.91		
Fnl Sat Adj:	0.93	0.93		0.83			0.93	0.93		0.83			0.90	0.89		0.83			0.90	0.87		0.87		
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.13	0.13	0.13	0.33	0.32	0.32	0.09	0.31	0.31	0.11	0.33	0.33
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.99	0.98	0.96	0.91	0.89	0.99	0.94	0.87	0.99	0.96	0.96
Q1:	3.4	5.4	3.3	12.2	7.2	4.4	3.7	9.5	2.1	3.6	12.5	12.5
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.74	0.74	0.62	0.62	0.62
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.60	0.60	0.75	0.75	0.75
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.15	0.32	0.29	0.21	0.41	0.41
Q2:	1.2	3.2	1.5	4.0	1.3	0.8	0.7	0.7	0.1	0.5	1.9	1.9
HCM2KQueue:	4.7	8.6	4.9	16.2	8.5	5.1	4.3	10.2	2.2	4.1	14.4	14.4
70th%Factor:	1.19	1.18	1.19	1.17	1.18	1.19	1.19	1.18	1.19	1.19	1.17	1.17
HCM2k70thQ:	5.5	10.1	5.8	18.9	10.0	6.1	5.1	12.0	2.6	4.9	16.9	16.9
85th%Factor:	1.56	1.53	1.56	1.47	1.53	1.55	1.56	1.51	1.58	1.56	1.49	1.49
HCM2k85thQ:	7.3	13.1	7.6	23.9	12.9	8.0	6.7	15.4	3.4	6.4	21.4	21.4
90th%Factor:	1.72	1.66	1.71	1.58	1.66	1.71	1.72	1.64	1.76	1.73	1.59	1.59
HCM2k90thQ:	8.0	14.2	8.4	25.6	14.1	8.8	7.4	16.7	3.8	7.1	23.0	23.0
95th%Factor:	1.96	1.87	1.96	1.74	1.87	1.95	1.97	1.84	2.03	1.98	1.77	1.77
HCM2k95thQ:	9.1	16.1	9.5	28.3	15.9	10.0	8.5	18.8	4.4	8.1	25.5	25.5
98th%Factor:	2.40	2.22	2.39	1.99	2.22	2.37	2.42	2.16	2.55	2.43	2.03	2.03
HCM2k98thQ:	11.2	19.0	11.6	32.2	18.8	12.2	10.4	22.0	5.5	10.0	29.3	29.3

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.685
Loss Time (sec):	12	Average Delay (sec/veh):	32.7
Optimal Cycle:	57	Level Of Service:	C

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	AM Peak Hour											
Base Vol:	212	289	146	208	516	128	149	1294	186	297	1270	101
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	212	289	146	208	516	128	149	1294	186	297	1270	101
Added Vol:	0	0	10	5	0	0	0	38	0	19	74	9
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	212	289	156	213	516	128	149	1332	186	316	1344	110
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	230	314	170	232	561	139	162	1448	202	343	1461	120
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	230	314	170	232	561	139	162	1448	202	343	1461	120
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	230	314	170	232	561	139	162	1448	202	343	1461	120
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.88	0.88
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	3.70	0.30
Final Sat.:	1769	3538	1583	1769	3538	1583	3432	6778	1583	3432	6196	507
Capacity Analysis Module:												
Vol/Sat:	0.13	0.09	0.11	0.13	0.16	0.09	0.05	0.21	0.13	0.10	0.24	0.24
Crit Moves:	****				****			****		****		
Green/Cycle:	0.19	0.19	0.19	0.23	0.23	0.23	0.08	0.31	0.31	0.15	0.38	0.38
Volume/Cap:	0.68	0.47	0.56	0.56	0.68	0.38	0.62	0.68	0.41	0.68	0.62	0.62
Delay/Veh:	43.4	36.5	39.2	35.8	37.5	33.0	49.2	31.0	27.7	44.4	25.5	25.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.4	36.5	39.2	35.8	37.5	33.0	49.2	31.0	27.7	44.4	25.5	25.5
LOS by Move:	D	D	D	D	D	C	D	C	C	D	C	C
HCM2k95thQ:	363	232	258	317	425	180	124	450	206	308	469	469

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	2	0	1	1	0	2	0	1	2	0	4	0	1	2
Lane Group:	L		T		R	L		T		R	L		T		R	L
#LnsInGrps:	1		2		1	1		2		1	2		4		1	2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12		12	12		12		12	12		12		12	12
CrsswalkWid:			8					8					8			
% Hev Veh:			2					2					2			
Grade:			0%					0%					0%			
Parking/Hr:			No					No					No			
Bus Stp/Hr:			0					0					0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0					0					0			
ExclusiveRT:			Include					Include					Include			
% RT Prtct:			0					0					0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.90	0.89	0.83		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.19	0.19	0.19		0.23	0.23	0.23		0.08	0.31	0.31		0.15	0.38	0.38	
ArrivalType:		4				4				4				4		
ProgFactor:	0.97	0.95	0.96		0.95	0.96	0.93		0.99	0.93	0.89		0.98	0.89	0.89	
Q1:	5.8	3.9	4.1		5.4	7.2	3.0		2.2	9.0	4.0		4.6	8.6	8.6	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.71	0.71	0.71		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.64	0.64	0.64		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.14	0.34	0.31		1.00	1.00	1.00	
Q2:	1.9	0.8	1.2		1.2	1.9	0.6		0.2	0.7	0.2		1.8	1.5	1.5	
HCM2KQueue:	7.7	4.7	5.3		6.6	9.1	3.6		2.4	9.7	4.2		6.4	10.2	10.2	
70th%Factor:	1.18	1.19	1.19		1.18	1.18	1.19		1.19	1.18	1.19		1.19	1.18	1.18	
HCM2k70thQ:	9.1	5.6	6.3		7.8	10.8	4.3		2.9	11.5	5.0		7.6	12.0	12.0	
85th%Factor:	1.53	1.56	1.55		1.54	1.52	1.57		1.58	1.52	1.56		1.54	1.51	1.51	
HCM2k85thQ:	11.8	7.4	8.2		10.2	13.9	5.7		3.9	14.8	6.5		9.9	15.4	15.4	
90th%Factor:	1.67	1.72	1.71		1.69	1.65	1.73		1.75	1.65	1.72		1.69	1.64	1.64	
HCM2k90thQ:	12.8	8.1	9.1		11.2	15.1	6.3		4.3	16.0	7.2		10.8	16.7	16.7	
95th%Factor:	1.89	1.96	1.95		1.92	1.86	1.99		2.02	1.85	1.98		1.92	1.84	1.84	
HCM2k95thQ:	14.5	9.3	10.3		12.7	17.0	7.2		4.9	18.0	8.2		12.3	18.7	18.7	
98th%Factor:	2.25	2.39	2.36		2.30	2.20	2.46		2.53	2.17	2.43		2.31	2.16	2.16	
HCM2k98thQ:	17.3	11.3	12.6		15.2	20.1	8.9		6.2	21.2	10.1		14.8	22.0	22.0	

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.847
Loss Time (sec):	12	Average Delay (sec/veh):	36.0
Optimal Cycle:	90	Level Of Service:	D

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0
Volume Module:AM Peak Hour												
Base Vol:	109	375	232	543	585	107	133	1418	89	454	1436	287
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	109	375	232	543	585	107	133	1418	89	454	1436	287
Added Vol:	0	0	24	10	0	0	0	53	0	46	102	19
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	109	375	256	553	585	107	133	1471	89	500	1538	306
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	118	408	278	601	636	116	145	1599	97	543	1672	333
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	408	278	601	636	116	145	1599	97	543	1672	333
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	118	408	278	601	636	116	145	1599	97	543	1672	333
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.87	0.87
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	4.00	1.00	2.00	3.34	0.66
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	6778	1583	3432	5512	1097
Capacity Analysis Module:												
Vol/Sat:	0.03	0.12	0.18	0.18	0.18	0.07	0.04	0.24	0.06	0.16	0.30	0.30
Crit Moves:			****	****				****		****		
Green/Cycle:	0.07	0.21	0.21	0.21	0.35	0.35	0.06	0.28	0.28	0.19	0.41	0.41
Volume/Cap:	0.52	0.55	0.85	0.85	0.52	0.21	0.74	0.85	0.22	0.85	0.74	0.74
Delay/Veh:	47.2	36.4	56.2	47.5	26.3	23.2	60.6	37.8	28.0	49.5	26.2	26.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.2	36.4	56.2	47.5	26.3	23.2	60.6	37.8	28.0	49.5	26.2	26.2
LOS by Move:	D	D	E	D	C	C	E	D	C	D	C	C
HCM2k95thQ:	130	302	496	533	360	111	192	666	108	500	632	632

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0 1	2	0	2	0 1	2	0	4	0 1	2	0	3	1 0
Lane Group:	L		T	R	L		T	R	L		T	R	L		RT	RT
#LnsInGrps:	2		2	1	2		2	1	2		4	1	2		4	4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1		xxxx	xxxx	1		xxxx	xxxx	1		xxxx	xxxx	1		xxxx	xxxx
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.98	0.98	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.96	0.96	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.07	0.21	0.21	0.21	0.35	0.35	0.06	0.28	0.28	0.19	0.41	0.41
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.95	0.98	0.98	0.89	0.84	0.99	0.97	0.89	0.99	0.90	0.90
Q1:	1.6	5.1	7.3	8.1	6.6	1.9	2.0	11.2	1.8	7.4	11.7	11.7
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.9	1.2	3.5	3.6	1.0	0.3	1.8	4.0	0.3	3.5	2.6	2.6
HCM2KQueue:	2.6	6.3	10.8	11.8	7.6	2.2	3.9	15.1	2.1	11.0	14.3	14.3
70th%Factor:	1.19	1.19	1.18	1.17	1.18	1.19	1.19	1.17	1.19	1.18	1.17	1.17
HCM2k70thQ:	3.1	7.4	12.8	13.8	9.0	2.6	4.6	17.7	2.5	12.9	16.7	16.7
85th%Factor:	1.58	1.54	1.51	1.50	1.53	1.58	1.56	1.48	1.58	1.51	1.49	1.49
HCM2k85thQ:	4.0	9.7	16.4	17.7	11.7	3.5	6.0	22.4	3.3	16.5	21.2	21.2
90th%Factor:	1.75	1.69	1.63	1.62	1.67	1.76	1.73	1.59	1.76	1.63	1.60	1.60
HCM2k90thQ:	4.5	10.6	17.7	19.1	12.7	3.8	6.7	24.0	3.7	17.9	22.8	22.8
95th%Factor:	2.02	1.92	1.83	1.81	1.89	2.03	1.98	1.76	2.03	1.83	1.77	1.77
HCM2k95thQ:	5.2	12.1	19.8	21.3	14.4	4.4	7.7	26.6	4.3	20.0	25.3	25.3
98th%Factor:	2.52	2.32	2.13	2.10	2.26	2.55	2.44	2.01	2.55	2.13	2.03	2.03
HCM2k98thQ:	6.5	14.5	23.1	24.8	17.2	5.6	9.4	30.5	5.4	23.3	29.0	29.0

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec): 100 Critical Vol./Cap.(X): 1.108
Loss Time (sec): 12 Average Delay (sec/veh): 71.0
Optimal Cycle: 180 Level Of Service: E

Street Name:	West Lane						Armstrong Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:	AM Peak Hour											
Base Vol:	29	373	260	586	531	27	36	433	23	494	441	330
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	29	373	260	586	531	27	36	433	23	494	441	330
Added Vol:	0	65	0	0	34	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	29	438	260	586	565	27	36	433	23	494	441	330
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	32	476	283	637	614	29	39	471	25	537	479	359
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	32	476	283	637	614	29	39	471	25	537	479	359
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	32	476	283	637	614	29	39	471	25	537	479	359
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.02	0.13	0.18	0.36	0.17	0.02	0.02	0.13	0.02	0.30	0.14	0.23
Crit Moves:			****	****				****		****		
Green/Cycle:	0.05	0.16	0.16	0.32	0.44	0.44	0.04	0.12	0.12	0.27	0.36	0.36
Volume/Cap:	0.39	0.84	1.11	1.11	0.39	0.04	0.63	1.11	0.13	1.11	0.38	0.63
Delay/Veh:	49.6	51.0	130.4	104.5	19.1	16.0	66.8	120	39.7	110.1	24.0	28.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.6	51.0	130.4	104.5	19.1	16.0	66.8	120	39.7	110.1	24.0	28.9
LOS by Move:	D	D	F	F	B	B	E	F	D	F	C	C
HCM2k95thQ:	74	460	690	1257	265	20	115	628	39	1103	247	422

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	2	0	1	1	0	2	0	1	1	0	2	0	1	1
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	2	1		1	2	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.05	0.16	0.16		0.32	0.44	0.44		0.04	0.12	0.12		0.27	0.36	0.36	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.99	1.00		1.00	0.79	0.74		1.00	1.00	0.96		1.00	0.86	0.90	
Q1:	0.8	6.7	7.9		17.7	4.8	0.3		1.1	6.9	0.6		14.9	4.5	7.4	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.6	3.3	7.9		13.6	0.6	0.0		1.2	7.3	0.2		12.1	0.6	1.6	
HCM2KQueue:	1.4	10.0	15.8		31.3	5.5	0.4		2.3	14.2	0.7		27.0	5.1	9.1	
70th%Factor:	1.20	1.18	1.17		1.15	1.19	1.20		1.19	1.17	1.20		1.15	1.19	1.18	
HCM2k70thQ:	1.7	11.7	18.4		35.9	6.5	0.5		2.7	16.6	0.9		31.1	6.0	10.7	
85th%Factor:	1.59	1.52	1.48		1.41	1.55	1.60		1.58	1.49	1.59		1.42	1.55	1.52	
HCM2k85thQ:	2.3	15.1	23.3		44.0	8.5	0.6		3.6	21.1	1.2		38.4	7.9	13.8	
90th%Factor:	1.77	1.64	1.58		1.48	1.70	1.79		1.76	1.60	1.79		1.50	1.71	1.65	
HCM2k90thQ:	2.5	16.4	24.9		46.5	9.3	0.7		4.0	22.6	1.3		40.6	8.7	15.0	
95th%Factor:	2.05	1.84	1.75		1.61	1.94	2.09		2.03	1.77	2.08		1.63	1.95	1.86	
HCM2k95thQ:	2.9	18.4	27.6		50.3	10.6	0.8		4.6	25.1	1.5		44.1	9.9	16.9	
98th%Factor:	2.60	2.16	2.00		1.79	2.36	2.67		2.54	2.04	2.64		1.83	2.38	2.20	
HCM2k98thQ:	3.7	21.6	31.5		56.0	12.9	1.0		5.8	28.8	2.0		49.3	12.0	19.9	

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.415
Loss Time (sec):	9	Average Delay (sec/veh):	11.5
Optimal Cycle:	30	Level Of Service:	B

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0	1	1	0
Volume Module:AM Peak Hour												
Base Vol:	32	13	19	42	27	31	32	798	30	41	798	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	32	13	19	42	27	31	32	798	30	41	798	19
Added Vol:	0	0	22	0	0	0	0	43	29	4	29	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	32	13	41	42	27	31	32	841	59	45	827	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	35	14	45	46	29	34	35	914	64	49	899	21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	14	45	46	29	34	35	914	64	49	899	21
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	35	14	45	46	29	34	35	914	64	49	899	21
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	0.81	0.81	0.81	0.81	0.93	0.92	0.92	0.93	0.93	0.93
Lanes:	0.37	0.15	0.48	0.42	0.27	0.31	1.00	1.87	0.13	1.00	1.96	0.04
Final Sat.:	575	233	736	650	418	479	1769	3273	230	1769	3448	79
Capacity Analysis Module:												
Vol/Sat:	0.06	0.06	0.06	0.07	0.07	0.07	0.02	0.28	0.28	0.03	0.26	0.26
Crit Moves:					****			****		****		
Green/Cycle:	0.17	0.17	0.17	0.17	0.17	0.17	0.05	0.67	0.67	0.07	0.69	0.69
Volume/Cap:	0.36	0.36	0.36	0.41	0.41	0.41	0.38	0.41	0.41	0.41	0.38	0.38
Delay/Veh:	37.5	37.5	37.5	38.2	38.2	38.2	48.4	7.5	7.5	47.1	6.7	6.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.5	37.5	37.5	38.2	38.2	38.2	48.4	7.5	7.5	47.1	6.7	6.7
LOS by Move:	D	D	D	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	137	137	137	163	163	163	76	152	152	99	117	117

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	0	0	1!	0	0		0	0	1!	0	0		1	0	1	1	0		1	0	1	1	0	
Lane Group:	LTR		LTR		LTR		LTR		LTR		LTR		L		RT		RT		L		RT		RT	
#LnsInGrps:	1		1		1		1		1		1		1		2		2		1		2		2	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:			8						8						8						8			
% Hev Veh:			2						2						2						2			
Grade:			0%						0%						0%						0%			
Parking/Hr:			No						No						No						No			
Bus Stp/Hr:			0						0						0						0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0						0						0						0			
ExclusiveRT:			Include						Include						Include						Include			
% RT Prtct:			0						0						0						0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	5		5		5		5		5		5		1	xxxx		xxxx			1	xxxx		xxxx		
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98												
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
Parking Adj:	1.00	1.00	1.00	1.00	1.00	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00												
Bus Stp Adj:	1.00	1.00	1.00	1.00	1.00	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00												
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
RT Adj:	0.94	0.94	0.94	0.96	0.96	0.96	xxxx	0.99	0.99	xxxx	1.00	1.00												
LT Adj:	0.89	0.89	0.89	0.87	0.87	0.87	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx												
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
HCM Sat Adj:	0.81	0.81	0.81	0.81	0.81	0.81	0.93	0.97	0.97	0.93	0.98	0.98												
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95												
Fnl Sat Adj:	0.81	0.81	0.81	0.81	0.81	0.81	0.93	0.92	0.92	0.93	0.93	0.93												
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	100	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	15.95	15.95	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	16.95	16.95	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	16.95	16.95	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	1	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	1	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	35	46	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	0.37	0.42	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	0.42	0.37	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	0.97	1.27	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	109	93	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	3.03	2.58	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	1.33	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	3.00	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	3.88	2.88	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	0.77	0.77	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	5.76	4.76	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	11.19	12.19	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	0.94	0.94	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	0.58	0.63	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	1.56	1.54	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	1.00	1.00	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	0.16	0.17	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	0.89	0.87	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	0.89	0.87	xxxxxx	xxxxxx

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.17	0.17	0.17	0.17	0.17	0.17	0.05	0.67	0.67	0.07	0.69	0.69
ArrivalType:	4			4			4			4		
ProgFactor:	0.95	0.95	0.95	0.96	0.96	0.96	0.99	0.36	0.36	0.99	0.30	0.30
Q1:	2.2	2.2	2.2	2.6	2.6	2.6	0.9	2.3	2.3	1.3	1.7	1.7
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.5	0.5	0.5	0.7	0.7	0.7	0.6	0.7	0.7	0.7	0.6	0.6
HCM2KQueue:	2.7	2.7	2.7	3.3	3.3	3.3	1.5	3.0	3.0	1.9	2.3	2.3
70th%Factor:	1.19	1.19	1.19	1.19	1.19	1.19	1.20	1.19	1.19	1.20	1.19	1.19
HCM2k70thQ:	3.3	3.3	3.3	3.9	3.9	3.9	1.8	3.6	3.6	2.3	2.7	2.7
85th%Factor:	1.57	1.57	1.57	1.57	1.57	1.57	1.59	1.57	1.57	1.58	1.58	1.58
HCM2k85thQ:	4.3	4.3	4.3	5.1	5.1	5.1	2.4	4.8	4.8	3.1	3.6	3.6
90th%Factor:	1.75	1.75	1.75	1.74	1.74	1.74	1.77	1.74	1.74	1.76	1.76	1.76
HCM2k90thQ:	4.8	4.8	4.8	5.7	5.7	5.7	2.6	5.3	5.3	3.4	4.0	4.0
95th%Factor:	2.02	2.02	2.02	2.00	2.00	2.00	2.05	2.01	2.01	2.04	2.03	2.03
HCM2k95thQ:	5.5	5.5	5.5	6.5	6.5	6.5	3.1	6.1	6.1	4.0	4.7	4.7
98th%Factor:	2.51	2.51	2.51	2.48	2.48	2.48	2.59	2.49	2.49	2.56	2.54	2.54
HCM2k98thQ:	6.8	6.8	6.8	8.1	8.1	8.1	3.9	7.5	7.5	5.0	5.8	5.8

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.949
Loss Time (sec):	12	Average Delay (sec/veh):	45.1
Optimal Cycle:	138	Level Of Service:	D

Street Name:	West Lane												Eight Mile Road											
Approach:	North Bound				South Bound				East Bound				West Bound											
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected								
Rights:	Include					Include					Include					Include								
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0						
Y+R:	4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0						
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	3	1	0	2	0	3	1	0				
Volume Module:	AM Peak Hour																							
Base Vol:	482	395	91			144	824	323			354	1403	465			205	1388	66						
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
Initial Bse:	482	395	91			144	824	323			354	1403	465			205	1388	66						
Added Vol:	56	35	32			23	7	0			0	58	28			49	112	37						
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0						
Initial Fut:	538	430	123			167	831	323			354	1461	493			254	1500	103						
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
PHF Adj:	0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92						
PHF Volume:	585	467	134			182	903	351			385	1588	536			276	1630	112						
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0						
Reduced Vol:	585	467	134			182	903	351			385	1588	536			276	1630	112						
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
FinalVolume:	585	467	134			182	903	351			385	1588	536			276	1630	112						
Saturation Flow Module:																								
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900						
Adjustment:	0.90	0.93	0.83			0.90	0.93	0.83			0.90	0.86	0.86			0.90	0.88	0.88						
Lanes:	2.00	2.00	1.00			2.00	2.00	1.00			2.00	3.00	1.00			2.00	3.74	0.26						
Final Sat.:	3432	3538	1583			3432	3538	1583			3432	4890	1630			3432	6279	431						
Capacity Analysis Module:																								
Vol/Sat:	0.17	0.13	0.08			0.05	0.26	0.22			0.11	0.32	0.33			0.08	0.26	0.26						
Crit Moves:	****						****						****			****								
Green/Cycle:	0.18	0.32	0.32			0.13	0.27	0.27			0.13	0.35	0.35			0.08	0.30	0.30						
Volume/Cap:	0.95	0.41	0.26			0.41	0.95	0.82			0.86	0.94	0.95			0.95	0.86	0.86						
Delay/Veh:	64.8	26.9	25.5			40.7	53.9	46.7			58.3	39.9	41.5			84.6	37.0	37.0						
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
AdjDel/Veh:	64.8	26.9	25.5			40.7	53.9	46.7			58.3	39.9	41.5			84.6	37.0	37.0						
LOS by Move:	E	C	C			D	D	D			E	D	D			F	D	D						
HCM2k95thQ:	501	249	129			150	816	555			408	914	940			266	643	643						

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																				
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	3	1	0	2	0	3	1	0
Lane Group:	L		T		R	L		T		R	L		RT		RT	L		RT		RT
#LnsInGrps:	2		2		1	2		2		1	2		4		4	2		4		4
HCM Ops Input Saturation Adj Module:																				
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12
CrsswalkWid:	8					8					8					8				
% Hev Veh:	2					2					2					2				
Grade:	0%					0%					0%					0%				
Parking/Hr:	No					No					No					No				
Bus Stp/Hr:	0					0					0					0				
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																			
Cnft Ped/Hr:	0					0					0					0				
ExclusiveRT:	Include					Include					Include					Include				
% RT Prtct:	0					0					0					0				
HCM Ops f(lt) Adj Case Module:																				
f(lt) Case:	1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx		
HCM Ops Saturation Adj Module:																				
Ln Wid Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Hev Veh Adj:	0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98		
Grade Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Parking Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00			xxxx	1.00	1.00		
Bus Stp Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00			xxxx	1.00	1.00		
Area Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
RT Adj:	xxxx	xxxx	0.85			xxxx	xxxx	0.85			xxxx	0.96	0.96			xxxx	0.99	0.99		
LT Adj:	0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx		
PedBike Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
HCM Sat Adj:	0.93	0.98	0.83			0.93	0.98	0.83			0.93	0.94	0.94			0.93	0.97	0.97		
Usr Sat Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Sat Adj:	0.97	0.95	1.00			0.97	0.95	1.00			0.97	0.91	0.91			0.97	0.91	0.91		
Fnl Sat Adj:	0.90	0.93	0.83			0.90	0.93	0.83			0.90	0.86	0.86			0.90	0.88	0.88		
Delay Adjustment Factor Module:																				
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																			
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																			
DelAdjFctr:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.18	0.32	0.32	0.13	0.27	0.27	0.13	0.35	0.35	0.08	0.30	0.30
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.89	0.87	0.97	0.99	0.97	0.99	0.98	0.98	1.00	0.97	0.97
Q1:	8.2	4.8	2.4	2.3	12.8	8.9	5.4	15.3	15.7	3.9	12.2	12.2
UpstreamVC:	0.38	0.38	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.39	0.39
UpstreamAdj:	0.93	0.93	0.93	0.00	0.00	0.00	0.00	0.00	0.00	0.93	0.93	0.93
EarlyArrAdj:	0.34	0.50	0.46	1.00	1.00	1.00	1.00	1.00	1.00	0.22	0.48	0.48
Q2:	2.7	0.4	0.2	0.7	6.3	3.4	3.4	6.4	6.8	1.5	2.4	2.4
HCM2KQueue:	11.0	5.1	2.6	3.0	19.1	12.3	8.7	21.8	22.5	5.5	14.6	14.6
70th%Factor:	1.18	1.19	1.19	1.19	1.16	1.17	1.18	1.16	1.16	1.19	1.17	1.17
HCM2k70thQ:	12.9	6.1	3.1	3.6	22.2	14.4	10.3	25.2	26.0	6.5	17.0	17.0
85th%Factor:	1.51	1.55	1.58	1.57	1.46	1.50	1.52	1.45	1.44	1.55	1.48	1.48
HCM2k85thQ:	16.5	7.9	4.0	4.7	27.9	18.5	13.3	31.5	32.4	8.5	21.6	21.6
90th%Factor:	1.63	1.71	1.75	1.74	1.55	1.62	1.66	1.53	1.53	1.70	1.59	1.59
HCM2k90thQ:	17.9	8.7	4.5	5.2	29.7	19.9	14.5	33.4	34.4	9.3	23.2	23.2
95th%Factor:	1.83	1.95	2.02	2.01	1.71	1.80	1.87	1.68	1.67	1.94	1.77	1.77
HCM2k95thQ:	20.0	10.0	5.2	6.0	32.6	22.2	16.3	36.5	37.6	10.6	25.7	25.7
98th%Factor:	2.13	2.38	2.52	2.49	1.93	2.09	2.21	1.89	1.88	2.36	2.03	2.03
HCM2k98thQ:	23.4	12.1	6.5	7.5	36.9	25.7	19.3	41.1	42.2	12.9	29.5	29.5

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: C[17.1]

Street Name:	Ham Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	0	0	0	0	0	0	1	0	0	0
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	0	0	157	0	1519	0	0	1513	88
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	157	0	1519	0	0	1513	88
Added Vol:	0	0	0	0	0	28	0	295	0	0	166	40
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	185	0	1814	0	0	1679	128
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	0	0	201	0	1972	0	0	1825	139
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	201	0	1972	0	0	1825	139
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	526	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	497	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	497	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	0.40	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	48.5	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	17.1	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	C	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			17.1			xxxxxx			xxxxxx		
ApproachLOS:	*			C			*			*		

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			12 feet			12 feet			12 feet	

Time Period: 0.25 hour

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St G

Cycle (sec): 100 Critical Vol./Cap.(X): 0.739
Loss Time (sec): 12 Average Delay (sec/veh): 25.7
Optimal Cycle: 65 Level Of Service: C

Street Name:	Leach Road/Street G						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	3 1	0	1 0	3 1	0
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	383	0	19	27	1436	0	0	1500	240
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	383	0	19	27	1436	0	0	1500	240
Added Vol:	78	0	77	0	0	0	69	219	23	26	112	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	78	0	77	383	0	19	96	1655	23	26	1612	240
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	85	0	84	416	0	21	104	1799	25	28	1752	261
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	85	0	84	416	0	21	104	1799	25	28	1752	261
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	85	0	84	416	0	21	104	1799	25	28	1752	261
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	0.93	1.00	0.83	0.93	0.89	0.89	0.93	0.87	0.87
Lanes:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	3.95	0.05	1.00	3.48	0.52
Final Sat.:	1769	1900	1583	1769	0	1583	1769	6671	93	1769	5787	862
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.05	0.24	0.00	0.01	0.06	0.27	0.27	0.02	0.30	0.30
Crit Moves:			****	****			****				****	
Green/Cycle:	0.31	0.00	0.31	0.32	0.00	0.08	0.08	0.46	0.46	0.03	0.41	0.41
Volume/Cap:	0.16	0.00	0.17	0.74	0.00	0.16	0.74	0.58	0.58	0.58	0.74	0.74
Delay/Veh:	25.4	0.0	25.5	35.5	0.0	43.1	63.5	20.1	20.1	64.9	26.1	26.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.4	0.0	25.5	35.5	0.0	43.1	63.5	20.1	20.1	64.9	26.1	26.1
LOS by Move:	C	A	C	D	A	D	E	C	C	E	C	C
HCM2k95thQ:	86	0	86	550	0	36	235	448	448	91	631	631

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St G

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	1	0	1	0	0	1	0	1	0	3	1	0	1	0
Lane Group:	L	T	R		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	4	4		1	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	xxxx	0.98		0.98	xxxx	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	1.00	1.00		xxxx	0.98	0.98	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	1.00	0.83		0.93	1.00	0.83		0.93	0.98	0.98		0.93	0.96	0.96	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.91	0.91		1.00	0.91	0.91	
Fnl Sat Adj:	0.93	1.00	0.83		0.93	1.00	0.83		0.93	0.89	0.89		0.93	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	1.00		1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St G

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.31	0.00	0.31		0.32	0.00	0.08		0.08	0.46	0.46		0.03	0.41	0.41	
ArrivalType:		4				4				4				4		
ProgFactor:	0.87	1.00	0.87		0.94	1.00	0.97		0.99	0.81	0.81		1.00	0.90	0.90	
Q1:	1.5	0.0	1.5		9.7	0.0	0.5		2.8	8.3	8.3		0.8	11.7	11.7	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	0.00	1.00		1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.2	0.0	0.2		2.5	0.0	0.2		2.0	1.4	1.4		1.0	2.6	2.6	
HCM2KQueue:	1.7	0.0	1.7		12.2	0.0	0.7		4.8	9.7	9.7		1.8	14.2	14.2	
70th%Factor:	1.20	1.20	1.20		1.17	1.20	1.20		1.19	1.18	1.18		1.20	1.17	1.17	
HCM2k70thQ:	2.0	0.0	2.0		14.3	0.0	0.8		5.7	11.4	11.4		2.1	16.7	16.7	
85th%Factor:	1.58	1.60	1.58		1.50	1.60	1.59		1.56	1.52	1.52		1.58	1.49	1.49	
HCM2k85thQ:	2.6	0.0	2.7		18.3	0.0	1.1		7.5	14.7	14.7		2.8	21.2	21.2	
90th%Factor:	1.77	1.80	1.77		1.62	1.80	1.79		1.71	1.65	1.65		1.77	1.60	1.60	
HCM2k90thQ:	3.0	0.0	3.0		19.7	0.0	1.3		8.2	16.0	16.0		3.1	22.7	22.7	
95th%Factor:	2.05	2.10	2.05		1.80	2.10	2.08		1.96	1.85	1.85		2.04	1.77	1.77	
HCM2k95thQ:	3.4	0.0	3.5		22.0	0.0	1.5		9.4	17.9	17.9		3.6	25.2	25.2	
98th%Factor:	2.58	2.70	2.58		2.09	2.70	2.65		2.39	2.17	2.17		2.57	2.03	2.03	
HCM2k98thQ:	4.3	0.0	4.3		25.5	0.0	1.9		11.5	21.1	21.1		4.6	29.0	29.0	

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Cycle (sec):	100	Critical Vol./Cap.(X):	0.818
Loss Time (sec):	12	Average Delay (sec/veh):	30.8
Optimal Cycle:	81	Level Of Service:	C

Street Name:	Micke Grove Road/Holman Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	1	0	2	0	1	2	0	4	0	1	2	0	4	0	1
Volume Module:	AM Peak Hour											
Base Vol:	369	76	22	35	225	248	229	1164	430	62	1171	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	369	76	22	35	225	248	229	1164	430	62	1171	14
Added Vol:	51	0	0	0	0	24	46	126	124	0	63	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	420	76	22	35	225	272	275	1290	554	62	1234	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	457	83	24	38	245	296	299	1402	602	67	1341	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	457	83	24	38	245	296	299	1402	602	67	1341	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	457	83	24	38	245	296	299	1402	602	67	1341	15
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	3538	1583	1769	3538	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.13	0.02	0.02	0.02	0.07	0.19	0.09	0.21	0.38	0.02	0.20	0.01
Crit Moves:	****					****			****	****		
Green/Cycle:	0.16	0.20	0.20	0.19	0.23	0.23	0.15	0.47	0.47	0.02	0.34	0.34
Volume/Cap:	0.82	0.11	0.07	0.11	0.30	0.82	0.58	0.44	0.82	0.82	0.58	0.03
Delay/Veh:	49.7	32.6	32.3	33.9	32.2	50.2	41.3	18.1	30.3	93.6	27.6	22.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.7	32.6	32.3	33.9	32.2	50.2	41.3	18.1	30.3	93.6	27.6	22.0
LOS by Move:	D	C	C	C	C	D	D	B	C	F	C	C
HCM2k95thQ:	431	54	30	49	159	495	251	308	721	63	383	13

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0	1	1	0	2	0	1	2	0	4	0	1	2	0	4	0	1
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	2	1		1	2	1		2	4	1		2	4	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		1.00	0.95	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.93	0.83		0.93	0.93	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.16	0.20	0.20	0.19	0.23	0.23	0.15	0.47	0.47	0.02	0.34	0.34
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.92	0.92	0.93	0.92	0.98	0.97	0.78	0.89	1.00	0.90	0.83
Q1:	6.2	0.9	0.5	0.8	2.7	7.6	3.9	5.6	12.9	1.0	7.6	0.2
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.67	0.67
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69	0.69	0.69
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.08	0.39	0.35
Q2:	3.1	0.1	0.1	0.1	0.4	3.2	1.3	0.8	3.7	0.3	0.5	0.0
HCM2KQueue:	9.3	1.0	0.6	0.9	3.2	10.8	5.2	6.4	16.6	1.2	8.1	0.2
70th%Factor:	1.18	1.20	1.20	1.20	1.19	1.18	1.19	1.19	1.17	1.20	1.18	1.20
HCM2k70thQ:	11.0	1.2	0.7	1.1	3.8	12.7	6.1	7.6	19.3	1.5	9.6	0.3
85th%Factor:	1.52	1.59	1.59	1.59	1.57	1.51	1.55	1.54	1.47	1.59	1.53	1.60
HCM2k85thQ:	14.1	1.6	0.9	1.5	5.0	16.4	8.0	9.9	24.4	1.9	12.4	0.4
90th%Factor:	1.65	1.78	1.79	1.78	1.74	1.63	1.71	1.69	1.57	1.78	1.67	1.80
HCM2k90thQ:	15.3	1.8	1.0	1.7	5.5	17.7	8.8	10.8	26.1	2.2	13.6	0.4
95th%Factor:	1.86	2.07	2.08	2.07	2.00	1.83	1.95	1.92	1.74	2.06	1.88	2.09
HCM2k95thQ:	17.3	2.1	1.2	2.0	6.3	19.8	10.1	12.3	28.8	2.5	15.3	0.5
98th%Factor:	2.19	2.62	2.66	2.63	2.48	2.13	2.37	2.31	1.98	2.61	2.23	2.68
HCM2k98thQ:	20.3	2.7	1.5	2.5	7.9	23.1	12.2	14.8	32.8	3.2	18.2	0.7

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Eight Mile & SR 99 W Frontage

Cycle (sec):	100	Critical Vol./Cap.(X):	0.669
Loss Time (sec):	12	Average Delay (sec/veh):	25.3
Optimal Cycle:	55	Level Of Service:	C

Street Name:	SR 99 West Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1	0	1 0	0	1	0	3	0 1	2 0	2 1 0
Volume Module:AM Peak Hour												
Base Vol:	1	4	81	330	5	2	4	1203	1	132	1218	210
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	4	81	330	5	2	4	1203	1	132	1218	210
Added Vol:	0	0	0	0	0	0	0	126	0	0	63	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	4	81	330	5	2	4	1329	1	132	1281	210
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	1	4	88	359	5	2	4	1445	1	143	1392	228
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	4	88	359	5	2	4	1445	1	143	1392	228
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	4	88	359	5	2	4	1445	1	143	1392	228
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.84	0.84	0.93	0.94	0.94	0.93	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	0.05	0.95	1.00	0.71	0.29	1.00	3.00	1.00	2.00	2.58	0.42
Final Sat.:	1769	75	1521	1769	1273	509	1769	5083	1583	3432	4276	701
Capacity Analysis Module:												
Vol/Sat:	0.00	0.06	0.06	0.20	0.00	0.00	0.00	0.28	0.00	0.04	0.33	0.33
Crit Moves:		****		****			****				****	
Green/Cycle:	0.05	0.09	0.09	0.30	0.34	0.34	0.00	0.43	0.43	0.06	0.49	0.49
Volume/Cap:	0.01	0.67	0.67	0.67	0.01	0.01	0.67	0.66	0.00	0.66	0.67	0.67
Delay/Veh:	45.3	56.3	56.3	33.7	21.8	21.8	190.8	23.7	16.4	53.4	20.3	20.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.3	56.3	56.3	33.7	21.8	21.8	190.8	23.7	16.4	53.4	20.3	20.3
LOS by Move:	D	E	E	C	C	C	F	C	B	D	C	C
HCM2k95thQ:	2	200	200	461	7	7	9	513	1	119	523	523

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0	1	2	0	2	1	0
Lane Group:	L	RT		RT	L	RT		RT	L	T		R	L	RT		RT
#LnsInGrps:	1	1		1	1	1		1	1	3		1	2	3		3
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx		xxxx	1	xxxx		xxxx	1	xxxx		xxxx	1	xxxx		xxxx
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Hev Veh Adj:	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98
Grade Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Parking Adj:	xxxx	1.00		1.00	xxxx	1.00		1.00	xxxx	xxxx		1.00	xxxx	1.00		1.00
Bus Stp Adj:	xxxx	1.00		1.00	xxxx	1.00		1.00	xxxx	xxxx		1.00	xxxx	1.00		1.00
Area Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
RT Adj:	xxxx	0.86		0.86	xxxx	0.96		0.96	xxxx	xxxx		0.85	xxxx	0.98		0.98
LT Adj:	0.95	xxxx		xxxxx	0.95	xxxx		xxxxx	0.95	xxxx		xxxxx	0.95	xxxx		xxxxx
PedBike Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
HCM Sat Adj:	0.93	0.84		0.84	0.93	0.94		0.94	0.93	0.98		0.83	0.93	0.96		0.96
Usr Sat Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Sat Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.91		1.00	0.97	0.91		0.91
Fnl Sat Adj:	0.93	0.84		0.84	0.93	0.94		0.94	0.93	0.89		0.83	0.90	0.87		0.87
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.05	0.09		0.09	0.30	0.34		0.34	0.00	0.43		0.43	0.06	0.49		0.49
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.99		0.99	0.93	0.83		0.83	1.00	0.87		0.75	0.99	0.82		0.82
Q1:		0.0		2.5	8.1	0.1		0.1	0.1	10.2		0.0	2.0	10.2		10.2
UpstreamVC:	0.00	0.00		0.00	0.00	0.00		0.00	0.44	0.44		0.44	0.33	0.33		0.33
UpstreamAdj:	0.00	0.00		0.00	0.00	0.00		0.00	0.90	0.90		0.90	0.95	0.95		0.95
EarlyArrAdj:	1.00	1.00		1.00	1.00	1.00		1.00	0.03	0.57		0.52	0.19	0.65		0.65
Q2:		0.0		1.6	1.9	0.0		0.0	0.1	1.1		0.0	0.3	1.3		1.3
HCM2KQueue:		0.0		4.0	10.0	0.1		0.1	0.2	11.3		0.0	2.3	11.5		11.5
70th%Factor:	1.20	1.19		1.19	1.18	1.20		1.20	1.20	1.18		1.20	1.19	1.17		1.17
HCM2k70thQ:		0.0		4.8	11.8	0.2		0.2	0.2	13.3		0.0	2.8	13.5		13.5
85th%Factor:	1.60	1.56		1.56	1.51	1.60		1.60	1.60	1.51		1.60	1.58	1.50		1.50
HCM2k85thQ:		0.1		6.3	15.2	0.2		0.2	0.3	17.0		0.0	3.7	17.3		17.3
90th%Factor:	1.80	1.73		1.73	1.64	1.80		1.80	1.80	1.63		1.80	1.76	1.62		1.62
HCM2k90thQ:		0.1		7.0	16.4	0.2		0.2	0.3	18.4		0.0	4.1	18.7		18.7
95th%Factor:	2.10	1.98		1.98	1.84	2.10		2.10	2.09	1.82		2.10	2.03	1.82		1.82
HCM2k95thQ:		0.1		8.0	18.4	0.3		0.3	0.4	20.5		0.0	4.7	20.9		20.9
98th%Factor:	2.70	2.43		2.43	2.16	2.69		2.69	2.69	2.12		2.70	2.54	2.11		2.11
HCM2k98thQ:		0.1		9.8	21.6	0.3		0.3	0.5	23.9		0.0	5.9	24.3		24.3

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Eight Mile & SR 99 E Frontage

Cycle (sec):	100	Critical Vol./Cap.(X):	0.179
Loss Time (sec):	12	Average Delay (sec/veh):	3.8
Optimal Cycle:	27	Level Of Service:	A

Street Name:	SR 99 East Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	2 0	1	1 0	1 1	0
Volume Module:AM Peak Hour												
Base Vol:	5	1	3	8	2	5	5	468	5	8	468	3
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	1	3	8	2	5	5	468	5	8	468	3
Added Vol:	0	0	0	0	0	0	0	9	0	0	5	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	1	3	8	2	5	5	477	5	8	473	3
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	5	1	3	9	2	5	5	518	5	9	514	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	1	3	9	2	5	5	518	5	9	514	3
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	5	1	3	9	2	5	5	518	5	9	514	3
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.87	0.87	0.93	0.88	0.88	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	1.00	0.25	0.75	1.00	0.29	0.71	1.00	2.00	1.00	1.00	1.99	0.01
Final Sat.:	1769	413	1240	1769	475	1188	1769	3538	1583	1769	3512	22
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.15	0.15
Crit Moves:	****				****		****				****	
Green/Cycle:	0.02	0.01	0.01	0.03	0.03	0.03	0.02	0.81	0.81	0.03	0.82	0.82
Volume/Cap:	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.00	0.18	0.18	0.18
Delay/Veh:	51.2	52.0	52.0	49.2	49.7	49.7	51.2	2.1	1.8	49.4	1.9	1.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.2	52.0	52.0	49.2	49.7	49.7	51.2	2.1	1.8	49.4	1.9	1.9
LOS by Move:	D	D	D	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	18	17	17	23	22	22	9	11	0	23	11	11

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	0 1	0		1 0	0 1	0		1 0	2 0	1		1 0	1 1	0	
Lane Group:	L	RT	RT		L	RT	RT		L	T	R		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	2	1		1	2	2	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.89	0.89		xxxx	0.89	0.89		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.87	0.87		0.93	0.88	0.88		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	0.95	
Fnl Sat Adj:	0.93	0.87	0.87		0.93	0.88	0.88		0.93	0.93	0.83		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.02	0.01	0.01	0.03	0.03	0.03	0.02	0.81	0.81	0.03	0.82	0.82
ArrivalType:	4			4			4			4		
ProgFactor:	1.00	1.00	1.00	0.99	0.99	0.99	1.00	0.00	0.00	0.99	0.00	0.00
Q1:	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.0	0.0	0.2	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.19	0.19	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.99	0.99	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.09	0.93	0.84	1.00	1.00	1.00
Q2:	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.2	0.0	0.2	0.2	0.2
HCM2KQueue:	0.4	0.3	0.3	0.4	0.4	0.4	0.2	0.2	0.0	0.4	0.2	0.2
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	0.4	0.4	0.4	0.5	0.5	0.5	0.2	0.2	0.0	0.5	0.3	0.3
85th%Factor:	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
HCM2k85thQ:	0.6	0.5	0.5	0.7	0.7	0.7	0.3	0.3	0.0	0.7	0.3	0.3
90th%Factor:	1.79	1.79	1.79	1.79	1.79	1.79	1.80	1.80	1.80	1.79	1.80	1.80
HCM2k90thQ:	0.6	0.6	0.6	0.8	0.7	0.7	0.3	0.4	0.0	0.8	0.4	0.4
95th%Factor:	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.10	2.09	2.09	2.09
HCM2k95thQ:	0.7	0.7	0.7	0.9	0.9	0.9	0.4	0.4	0.0	0.9	0.5	0.5
98th%Factor:	2.67	2.68	2.68	2.67	2.67	2.67	2.69	2.68	2.70	2.67	2.68	2.68
HCM2k98thQ:	0.9	0.8	0.8	1.2	1.1	1.1	0.4	0.6	0.0	1.2	0.6	0.6

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 West & L.C.MarkTaylor/Marlette

Cycle (sec):	100	Critical Vol./Cap.(X):	0.614
Loss Time (sec):	12	Average Delay (sec/veh):	26.3
Optimal Cycle:	50	Level Of Service:	C

Street Name:	West Lane								Lt.Col.Mark Taylor/Marlette Rd							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	3	1 0		1	0	4	0 1		1	0	1	0 1		1 0	0	1 0
Volume Module:	AM Peak Hour															
Base Vol:	128	828	0	0	1387	107	128	0	107	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	128	828	0	0	1387	107	128	0	107	0	0	0				
Added Vol:	0	100	70	44	40	0	0	0	0	260	0	15				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	128	928	70	44	1427	107	128	0	107	260	0	15				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92				
PHF Volume:	139	1009	76	48	1551	116	139	0	116	283	0	16				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	139	1009	76	48	1551	116	139	0	116	283	0	16				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	139	1009	76	48	1551	116	139	0	116	283	0	16				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.93	0.88	0.88	0.93	0.89	0.83	0.93	1.00	0.83	0.93	1.00	0.83				
Lanes:	1.00	3.72	0.28	1.00	4.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00				
Final Sat.:	1769	6239	471	1769	6778	1583	1769	1900	1583	1769	0	1583				
Capacity Analysis Module:																
Vol/Sat:	0.08	0.16	0.16	0.03	0.23	0.07	0.08	0.00	0.07	0.16	0.00	0.01				
Crit Moves:	****				****				****	****						
Green/Cycle:	0.13	0.43	0.43	0.07	0.37	0.37	0.34	0.00	0.12	0.26	0.00	0.26				
Volume/Cap:	0.61	0.38	0.38	0.38	0.61	0.20	0.23	0.00	0.61	0.61	0.00	0.04				
Delay/Veh:	46.2	19.5	19.5	46.2	26.0	21.4	24.2	0.0	47.7	35.1	0.0	27.7				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	46.2	19.5	19.5	46.2	26.0	21.4	24.2	0.0	47.7	35.1	0.0	27.7				
LOS by Move:	D	B	B	D	C	C	C	A	D	D	A	C				
HCM2k95thQ:	244	250	250	66	410	93	136	0	216	377	0	18				

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #16 West & L.C.MarkTaylor/Marlette

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 3	1	0	1	0 4	0	1	1	0 1	0	1	1	0 0	1	0
Lane Group:	L	RT		RT	L	T		R	L	T		R	L	RT		RT
#LnsInGrps:	1	4		4	1	4		1	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx		xxxx	1	xxxx		xxxx	1	xxxx		xxxx	1	xxxx		xxxx
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	xxxx	1.00		1.00	xxxx	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	xxxx	0.98		0.98	xxxx	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	xxxx	1.00		1.00	xxxx	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	xxxx	1.00		1.00	xxxx	1.00	
RT Adj:	xxxx	0.99	0.99		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.97	0.97		0.93	0.98	0.83		0.93	1.00	0.83		0.93	1.00	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	0.91		1.00	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.88	0.88		0.93	0.89	0.83		0.93	1.00	0.83		0.93	1.00	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		0.00	1.00	1.00		0.00	1.00		

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #16 West & L.C.MarkTaylor/Marlette

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.13	0.43	0.43		0.07	0.37	0.37		0.34	0.00	0.12		0.26	0.00	0.26	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.80	0.80		0.98	0.89	0.82		0.86	1.00	0.98		0.94	1.00	0.89	
Q1:		3.6	4.5	4.5		1.2	8.6	1.8		2.4	0.0	3.0		6.5	0.0	0.3
UpstreamVC:	0.00	0.00	0.00		0.95	0.95	0.95		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.21	0.21	0.21		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		0.04	0.12	0.11		1.00	0.00	1.00		1.00	0.00	1.00	
Q2:		1.4	0.6	0.6		0.0	0.2	0.0		0.3	0.0	1.4		1.5	0.0	0.0
HCM2KQueue:		5.0	5.1	5.1		1.3	8.8	1.8		2.7	0.0	4.4		8.0	0.0	0.3
70th%Factor:	1.19	1.19	1.19		1.20	1.18	1.20		1.19	1.20	1.19		1.18	1.20	1.20	
HCM2k70thQ:		5.9	6.1	6.1		1.5	10.4	2.2		3.2	0.0	5.2		9.5	0.0	0.4
85th%Factor:	1.55	1.55	1.55		1.59	1.52	1.58		1.57	1.60	1.56		1.53	1.60	1.60	
HCM2k85thQ:		7.8	8.0	8.0		2.0	13.4	2.9		4.2	0.0	6.9		12.3	0.0	0.5
90th%Factor:	1.71	1.71	1.71		1.78	1.66	1.77		1.75	1.80	1.72		1.67	1.80	1.79	
HCM2k90thQ:		8.5	8.8	8.8		2.3	14.5	3.2		4.7	0.0	7.6		13.4	0.0	0.6
95th%Factor:	1.95	1.95	1.95		2.06	1.87	2.04		2.02	2.10	1.97		1.88	2.10	2.09	
HCM2k95thQ:		9.8	10.0	10.0		2.6	16.4	3.7		5.4	0.0	8.7		15.1	0.0	0.7
98th%Factor:	2.38	2.37	2.37		2.61	2.21	2.57		2.51	2.70	2.41		2.24	2.70	2.67	
HCM2k98thQ:		11.9	12.2	12.2		3.3	19.4	4.7		6.8	0.0	10.6		17.9	0.0	0.9

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

Cycle (sec):	100	Critical Vol./Cap.(X):	0.838
Loss Time (sec):	12	Average Delay (sec/veh):	41.1
Optimal Cycle:	87	Level Of Service:	D

Street Name:	Holman Road						Lt. Col. Mark Taylor Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	1 0	1	1 0	0 1	0
Volume Module:AM Peak Hour												
Base Vol:	30	272	151	373	400	31	40	383	24	294	392	209
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	30	272	151	373	400	31	40	383	24	294	392	209
Added Vol:	0	8	0	0	40	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	30	280	151	373	440	31	40	383	24	294	392	209
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	33	304	164	405	478	34	43	416	26	320	426	227
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	304	164	405	478	34	43	416	26	320	426	227
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	33	304	164	405	478	34	43	416	26	320	426	227
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.98	0.83	0.93	0.93	0.93
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.00	1.00	1.00	0.65	0.35
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	1862	1583	1769	1151	614
Capacity Analysis Module:												
Vol/Sat:	0.02	0.06	0.10	0.23	0.09	0.02	0.02	0.22	0.02	0.18	0.37	0.37
Crit Moves:			****	****				****		****		
Green/Cycle:	0.07	0.12	0.12	0.27	0.33	0.33	0.03	0.27	0.27	0.22	0.45	0.45
Volume/Cap:	0.28	0.48	0.84	0.84	0.28	0.06	0.82	0.84	0.06	0.84	0.82	0.82
Delay/Veh:	45.9	41.4	68.7	46.4	24.7	22.8	109.7	46.5	27.4	52.5	30.4	30.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.9	41.4	68.7	46.4	24.7	22.8	109.7	46.5	27.4	52.5	30.4	30.4
LOS by Move:	D	D	E	D	C	C	F	D	C	D	C	C
HCM2k95thQ:	48	154	266	623	174	31	83	570	26	537	772	772

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Lanes:	1 0	3 0	1		1 0	3 0	1		1 0	1 0	1		1 0	0 1	0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	3	1		1	3	1		1	1	1		1	1	1	
HCM Ops Adjusted Lane Utilization Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.95	0.95	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.93	0.93	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.98	0.83		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.07	0.12	0.12	0.27	0.33	0.33	0.03	0.27	0.27	0.22	0.45	0.45
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.97	0.99	0.97	0.86	0.84	1.00	0.97	0.88	0.98	0.90	0.90
Q1:	0.8	2.8	4.4	10.3	3.1	0.5	1.2	10.6	0.5	8.3	14.2	14.2
UpstreamVC:	0.36	0.36	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.94	0.94	0.94	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
EarlyArrAdj:	0.19	0.29	0.26	1.00	1.00	1.00	0.13	0.48	0.44	1.00	1.00	1.00
Q2:	0.1	0.3	1.1	3.7	0.4	0.1	0.4	2.1	0.0	3.5	3.7	3.7
HCM2KQueue:	0.9	3.1	5.5	14.0	3.5	0.6	1.6	12.7	0.5	11.9	17.9	17.9
70th%Factor:	1.20	1.19	1.19	1.17	1.19	1.20	1.20	1.17	1.20	1.17	1.16	1.16
HCM2k70thQ:	1.1	3.7	6.5	16.4	4.2	0.7	1.9	14.9	0.6	13.9	20.9	20.9
85th%Factor:	1.59	1.57	1.55	1.49	1.57	1.59	1.58	1.50	1.59	1.50	1.46	1.46
HCM2k85thQ:	1.5	4.8	8.5	20.9	5.5	1.0	2.6	19.0	0.8	17.8	26.3	26.3
90th%Factor:	1.78	1.74	1.70	1.60	1.74	1.79	1.77	1.61	1.79	1.62	1.56	1.56
HCM2k90thQ:	1.6	5.4	9.3	22.4	6.1	1.1	2.9	20.4	0.9	19.2	28.0	28.0
95th%Factor:	2.07	2.01	1.94	1.78	1.99	2.08	2.05	1.80	2.08	1.81	1.72	1.72
HCM2k95thQ:	1.9	6.2	10.6	24.9	7.0	1.3	3.3	22.8	1.1	21.5	30.9	30.9
98th%Factor:	2.63	2.49	2.36	2.04	2.46	2.65	2.58	2.08	2.66	2.10	1.95	1.95
HCM2k98thQ:	2.4	7.7	12.9	28.6	8.6	1.6	4.2	26.3	1.3	24.9	35.0	35.0

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.696
Loss Time (sec):	12	Average Delay (sec/veh):	30.9
Optimal Cycle:	59	Level Of Service:	C

Street Name:	West Lane						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	4 0	1	2 0	4 0	1	2 0	2 0	1	2 0	2 0	1
Volume Module:	AM Peak Hour											
Base Vol:	311	849	151	92	1434	80	98	303	273	268	258	41
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	311	849	151	92	1434	80	98	303	273	268	258	41
Added Vol:	0	125	0	58	224	17	10	0	0	18	1	35
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	311	974	151	150	1658	97	108	303	273	286	259	76
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	338	1059	164	163	1802	105	117	329	297	311	282	83
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	338	1059	164	163	1802	105	117	329	297	311	282	83
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	338	1059	164	163	1802	105	117	329	297	311	282	83
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3538	7448	1583	3538	7448	1583	3538	3724	1583	3538	3724	1583
Capacity Analysis Module:												
Vol/Sat:	0.10	0.14	0.10	0.05	0.24	0.07	0.03	0.09	0.19	0.09	0.08	0.05
Crit Moves:	****				****				****	****		
Green/Cycle:	0.14	0.37	0.37	0.12	0.35	0.35	0.12	0.27	0.27	0.13	0.27	0.27
Volume/Cap:	0.70	0.39	0.28	0.39	0.70	0.19	0.28	0.33	0.70	0.70	0.28	0.19
Delay/Veh:	45.6	23.5	22.7	41.3	28.9	23.0	40.3	29.5	37.9	46.6	28.6	28.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.6	23.5	22.7	41.3	28.9	23.0	40.3	29.5	37.9	46.6	28.6	28.0
LOS by Move:	D	C	C	D	C	C	D	C	D	D	C	C
HCM2k95thQ:	303	257	155	133	544	100	92	189	423	287	157	92

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	2	0	1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	4	1		2	4	1		2	2	1		2	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.14	0.37	0.37		0.12	0.35	0.35		0.12	0.27	0.27		0.13	0.27	0.27	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.85	0.84		0.97	0.92	0.84		0.97	0.91	0.95		0.98	0.90	0.89	
Q1:	4.4	4.6	2.7		2.0	9.9	1.7		1.4	3.3	7.0		4.1	2.8	1.6	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	1.9	0.6	0.4		0.6	2.1	0.2		0.4	0.5	2.0		1.9	0.4	0.2	
HCM2KQueue:	6.3	5.3	3.1		2.6	12.0	2.0		1.8	3.8	9.1		5.9	3.1	1.8	
70th%Factor:	1.19	1.19	1.19		1.19	1.17	1.20		1.20	1.19	1.18		1.19	1.19	1.20	
HCM2k70thQ:	7.5	6.3	3.7		3.2	14.1	2.3		2.2	4.5	10.7		7.1	3.7	2.1	
85th%Factor:	1.54	1.55	1.57		1.57	1.50	1.58		1.58	1.56	1.52		1.55	1.57	1.58	
HCM2k85thQ:	9.7	8.2	4.9		4.2	18.1	3.1		2.9	6.0	13.8		9.2	4.9	2.8	
90th%Factor:	1.69	1.71	1.74		1.75	1.62	1.76		1.77	1.73	1.65		1.70	1.74	1.77	
HCM2k90thQ:	10.7	9.0	5.4		4.6	19.5	3.5		3.2	6.6	15.0		10.1	5.5	3.2	
95th%Factor:	1.92	1.95	2.01		2.02	1.81	2.04		2.04	1.99	1.86		1.93	2.00	2.04	
HCM2k95thQ:	12.1	10.3	6.2		5.3	21.7	4.0		3.7	7.6	16.9		11.5	6.3	3.7	
98th%Factor:	2.32	2.37	2.49		2.52	2.10	2.56		2.57	2.45	2.20		2.33	2.49	2.57	
HCM2k98thQ:	14.6	12.5	7.7		6.6	25.2	5.0		4.6	9.3	20.0		13.9	7.8	4.6	

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.528
Loss Time (sec):	12	Average Delay (sec/veh):	33.4
Optimal Cycle:	43	Level Of Service:	C

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:	AM Peak Hour											
Base Vol:	158	364	97	132	626	90	107	492	136	191	476	64
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	158	364	97	132	626	90	107	492	136	191	476	64
Added Vol:	3	6	0	0	13	27	1	32	5	0	19	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	161	370	97	132	639	117	108	524	141	191	495	64
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	175	402	105	143	695	127	117	570	153	208	538	70
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	175	402	105	143	695	127	117	570	153	208	538	70
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	175	402	105	143	695	127	117	570	153	208	538	70
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.10	0.08	0.07	0.08	0.14	0.08	0.07	0.11	0.10	0.12	0.11	0.04
Crit Moves:	****				****			****		****		
Green/Cycle:	0.19	0.22	0.22	0.23	0.26	0.26	0.17	0.21	0.21	0.22	0.27	0.27
Volume/Cap:	0.53	0.36	0.30	0.36	0.53	0.31	0.40	0.53	0.46	0.53	0.40	0.16
Delay/Veh:	38.3	33.2	33.1	33.2	32.2	30.3	38.0	35.5	35.4	35.6	30.2	28.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.3	33.2	33.1	33.2	32.2	30.3	38.0	35.5	35.4	35.6	30.2	28.3
LOS by Move:	D	C	C	C	C	C	D	D	D	D	C	C
HCM2k95thQ:	226	172	123	167	297	140	171	288	213	256	217	72

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	3 0	1	1	1 0	3 0	1	1	1 0	3 0	1	1	1 0	3 0	1	1
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	3	1		1	3	1		1	3	1		1	3	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.19	0.22	0.22	0.23	0.26	0.26	0.17	0.21	0.21	0.22	0.27	0.27
ArrivalType:		4			4			4			4	
ProgFactor:	0.96	0.93	0.93	0.93	0.93	0.91	0.96	0.95	0.94	0.95	0.91	0.89
Q1:	4.2	3.2	2.3	3.1	5.7	2.6	2.8	4.9	3.5	4.8	4.1	1.3
UpstreamVC:	0.36	0.36	0.36	0.28	0.28	0.28	0.00	0.00	0.00	0.35	0.35	0.35
UpstreamAdj:	0.94	0.94	0.94	0.97	0.97	0.97	0.00	0.00	0.00	0.94	0.94	0.94
EarlyArrAdj:	0.36	0.41	0.37	0.41	0.46	0.42	1.00	1.00	1.00	0.40	0.46	0.41
Q2:	0.4	0.2	0.2	0.2	0.5	0.2	0.6	1.1	0.8	0.4	0.3	0.1
HCM2KQueue:	4.6	3.5	2.4	3.4	6.2	2.8	3.4	6.0	4.3	5.2	4.4	1.4
70th%Factor:	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.20
HCM2k70thQ:	5.5	4.1	2.9	4.0	7.3	3.3	4.1	7.1	5.1	6.2	5.2	1.7
85th%Factor:	1.56	1.57	1.58	1.57	1.54	1.57	1.57	1.55	1.56	1.55	1.56	1.59
HCM2k85thQ:	7.2	5.4	3.8	5.3	9.5	4.4	5.4	9.2	6.7	8.1	6.9	2.2
90th%Factor:	1.72	1.74	1.75	1.74	1.69	1.75	1.74	1.70	1.72	1.71	1.72	1.77
HCM2k90thQ:	7.9	6.0	4.3	5.8	10.4	4.9	5.9	10.1	7.4	9.0	7.6	2.5
95th%Factor:	1.96	2.00	2.02	2.00	1.93	2.01	2.00	1.93	1.97	1.95	1.97	2.05
HCM2k95thQ:	9.0	6.9	4.9	6.7	11.9	5.6	6.8	11.5	8.5	10.2	8.7	2.9
98th%Factor:	2.40	2.47	2.53	2.47	2.32	2.51	2.47	2.33	2.42	2.37	2.41	2.60
HCM2k98thQ:	11.0	8.5	6.1	8.3	14.3	7.0	8.4	13.9	10.4	12.4	10.6	3.6

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 Morada Ln & SR99 W Frontage Rd

Cycle (sec): 100 Critical Vol./Cap.(X): 0.411
Loss Time (sec): 12 Average Delay (sec/veh): 24.2
Optimal Cycle: 36 Level Of Service: C

Street Name:	SR 99 West Frontage Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	2 0	0 1	0	1 0	2 1	0	1 0	2 0	1
Volume Module:	AM Peak Hour											
Base Vol:	3	28	45	419	35	11	16	467	2	89	505	274
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	28	45	419	35	11	16	467	2	89	505	274
Added Vol:	0	0	0	0	0	0	0	32	0	0	19	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	28	45	419	35	11	16	499	2	89	524	274
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	3	30	49	455	38	12	17	542	2	97	570	298
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	30	49	455	38	12	17	542	2	97	570	298
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	30	49	455	38	12	17	542	2	97	570	298
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.90	0.94	0.94	0.93	0.89	0.89	0.93	0.93	0.83
Lanes:	2.00	1.00	1.00	2.00	0.76	0.24	1.00	2.99	0.01	1.00	2.00	1.00
Final Sat.:	3432	1862	1583	3432	1366	429	1769	5058	20	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.02	0.03	0.13	0.03	0.03	0.01	0.11	0.11	0.05	0.16	0.19
Crit Moves:			****	****			****					****
Green/Cycle:	0.01	0.08	0.08	0.32	0.39	0.39	0.02	0.32	0.32	0.16	0.46	0.46
Volume/Cap:	0.07	0.22	0.41	0.41	0.07	0.07	0.41	0.34	0.34	0.34	0.35	0.41
Delay/Veh:	49.4	44.3	46.4	26.7	19.5	19.5	54.5	26.1	26.1	37.8	17.6	18.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.4	44.3	46.4	26.7	19.5	19.5	54.5	26.1	26.1	37.8	17.6	18.5
LOS by Move:	D	D	D	C	B	B	D	C	C	D	B	B
HCM2k95thQ:	6	54	98	253	40	40	28	195	195	124	221	231

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #22 Morada Ln & SR99 W Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	1	0 1	2	0	0	1 0	1	0	2	1 0	1	0	2	0 1
Lane Group:	L		T	R	L		RT	RT	L		RT	RT	L		T	R
#LnsInGrps:	2		1	1	2		1	1	1		3	3	1		2	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.96	0.96		xxxx	1.00	1.00		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.94	0.94		0.93	0.98	0.98		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		0.97	1.00	1.00		1.00	0.91	0.91		1.00	0.95	1.00	
Fnl Sat Adj:	0.90	0.98	0.83		0.90	0.94	0.94		0.93	0.89	0.89		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #22 Morada Ln & SR99 W Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.01	0.08	0.08		0.32	0.39	0.39		0.02	0.32	0.32		0.16	0.46	0.46	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.98	0.98		0.89	0.80	0.80		1.00	0.88	0.88		0.95	0.77	0.78	
Q1:		0.0	0.8	1.3	4.5	0.7	0.7		0.5	3.7	3.7		2.3	4.1	4.3	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.53	0.53	0.53		0.23	0.23	0.23	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.84	0.84	0.84		0.98	0.98	0.98	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.09	0.45	0.45		0.34	0.66	0.60	
Q2:		0.1	0.3	0.6	0.7	0.1	0.1		0.1	0.2	0.2		0.2	0.4	0.4	
HCM2KQueue:		0.1	1.0	1.9	5.2	0.8	0.8		0.5	3.9	3.9		2.4	4.5	4.7	
70th%Factor:	1.20	1.20	1.20		1.19	1.20	1.20		1.20	1.19	1.19		1.19	1.19	1.19	
HCM2k70thQ:		0.1	1.3	2.3	6.2	0.9	0.9		0.6	4.7	4.7		2.9	5.3	5.6	
85th%Factor:	1.60	1.59	1.58		1.55	1.59	1.59		1.59	1.56	1.56		1.58	1.56	1.56	
HCM2k85thQ:		0.2	1.7	3.0	8.1	1.2	1.2		0.9	6.2	6.2		3.8	7.0	7.3	
90th%Factor:	1.80	1.78	1.76		1.71	1.78	1.78		1.79	1.73	1.73		1.75	1.72	1.72	
HCM2k90thQ:		0.2	1.9	3.4	8.9	1.4	1.4		1.0	6.8	6.8		4.3	7.7	8.1	
95th%Factor:	2.10	2.07	2.04		1.95	2.07	2.07		2.08	1.98	1.98		2.02	1.97	1.96	
HCM2k95thQ:		0.3	2.2	3.9	10.1	1.6	1.6		1.1	7.8	7.8		4.9	8.8	9.2	
98th%Factor:	2.69	2.62	2.56		2.37	2.64	2.64		2.66	2.44	2.44		2.53	2.41	2.40	
HCM2k98thQ:		0.3	2.8	4.9	12.3	2.1	2.1		1.4	9.6	9.6		6.2	10.8	11.3	

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 West Ln & West Ln Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.784
Loss Time (sec):	12	Average Delay (sec/veh):	24.9
Optimal Cycle:	74	Level Of Service:	C

Street Name:	West Lane						West Lane Frontage Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3	1 0	1 0	3	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:	AM Peak Hour											
Base Vol:	223	1140	53	16	1865	29	40	32	209	78	21	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	223	1140	53	16	1865	29	40	32	209	78	21	6
Added Vol:	0	125	0	0	242	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	223	1265	53	16	2107	29	40	32	209	78	21	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	242	1375	58	17	2290	32	43	35	227	85	23	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	242	1375	58	17	2290	32	43	35	227	85	23	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	242	1375	58	17	2290	32	43	35	227	85	23	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.89	0.89	0.93	0.85	0.85	0.93	0.95	0.95
Lanes:	1.00	3.84	0.16	1.00	3.95	0.05	1.00	0.13	0.87	1.00	0.78	0.22
Final Sat.:	1769	6466	271	1769	6672	92	1769	215	1405	1769	1400	400
Capacity Analysis Module:												
Vol/Sat:	0.14	0.21	0.21	0.01	0.34	0.34	0.02	0.16	0.16	0.05	0.02	0.02
Crit Moves:	****				****			****		****		
Green/Cycle:	0.17	0.59	0.59	0.03	0.44	0.44	0.16	0.21	0.21	0.06	0.11	0.11
Volume/Cap:	0.78	0.36	0.36	0.36	0.78	0.78	0.15	0.78	0.78	0.78	0.15	0.15
Delay/Veh:	51.8	11.0	11.0	52.4	25.5	25.5	36.4	49.1	49.1	76.6	40.9	40.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.8	11.0	11.0	52.4	25.5	25.5	36.4	49.1	49.1	76.6	40.9	40.9
LOS by Move:	D	B	B	D	C	C	D	D	D	E	D	D
HCM2k95thQ:	349	186	186	50	728	728	60	440	440	218	46	46

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Lanes:	1 0	3	1	0	1 0	3	1	0	1 0	0	1	0	1 0	0	1	0
Lane Group:	L	RT		RT	L	RT		RT	L	RT		RT	L	RT		RT
#LnsInGrps:	1	4		4	1	4		4	1	1		1	1	1		1
HCM Ops Adjusted Lane Utilization Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.99	0.99		xxxx	1.00	1.00		xxxx	0.87	0.87		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.97	0.97		0.93	0.98	0.98		0.93	0.85	0.85		0.93	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	0.91		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.89		0.93	0.89	0.89		0.93	0.85	0.85		0.93	0.95	0.95	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.17	0.59	0.59	0.03	0.44	0.44	0.16	0.21	0.21	0.06	0.11	0.11
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.58	0.58	0.99	0.90	0.90	0.94	0.98	0.98	0.99	0.97	0.97
Q1:	6.3	3.3	3.3	0.5	13.6	13.6	1.0	6.7	6.7	2.3	0.7	0.7
UpstreamVC:	0.45	0.45	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.89	0.89	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.32	0.69	0.69	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	1.0	0.4	0.4	0.5	3.2	3.2	0.2	2.8	2.8	2.1	0.2	0.2
HCM2KQueue:	7.4	3.7	3.7	1.0	16.8	16.8	1.2	9.5	9.5	4.4	0.9	0.9
70th%Factor:	1.18	1.19	1.19	1.20	1.17	1.17	1.20	1.18	1.18	1.19	1.20	1.20
HCM2k70thQ:	8.7	4.5	4.5	1.2	19.6	19.6	1.4	11.2	11.2	5.3	1.1	1.1
85th%Factor:	1.53	1.56	1.56	1.59	1.47	1.47	1.59	1.52	1.52	1.56	1.59	1.59
HCM2k85thQ:	11.3	5.9	5.9	1.6	24.7	24.7	1.8	14.4	14.4	6.9	1.4	1.4
90th%Factor:	1.68	1.73	1.73	1.78	1.57	1.57	1.78	1.65	1.65	1.72	1.78	1.78
HCM2k90thQ:	12.3	6.5	6.5	1.7	26.4	26.4	2.1	15.7	15.7	7.6	1.6	1.6
95th%Factor:	1.90	1.99	1.99	2.07	1.74	1.74	2.06	1.85	1.85	1.97	2.07	2.07
HCM2k95thQ:	14.0	7.4	7.4	2.0	29.1	29.1	2.4	17.6	17.6	8.7	1.9	1.9
98th%Factor:	2.27	2.45	2.45	2.63	1.98	1.98	2.61	2.18	2.18	2.41	2.63	2.63
HCM2k98thQ:	16.7	9.2	9.2	2.6	33.1	33.1	3.0	20.7	20.7	10.7	2.4	2.4

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 West Lane & Knickerbocker Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.751
Loss Time (sec): 12 Average Delay (sec/veh): 23.8
Optimal Cycle: 67 Level Of Service: C

Street Name:	West Lane						Knickerbocker Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3	1 0	1 0	3	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:	AM Peak Hour											
Base Vol:	125	1257	34	93	2057	144	171	80	102	71	86	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	125	1257	34	93	2057	144	171	80	102	71	86	50
Added Vol:	0	125	0	0	242	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	125	1382	34	93	2299	144	171	80	102	71	86	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	136	1502	37	101	2499	157	186	87	111	77	93	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	136	1502	37	101	2499	157	186	87	111	77	93	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	136	1502	37	101	2499	157	186	87	111	77	93	54
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.88	0.88	0.93	0.90	0.90	0.93	0.93	0.93
Lanes:	1.00	3.90	0.10	1.00	3.76	0.24	1.00	0.44	0.56	1.00	0.63	0.37
Final Sat.:	1769	6588	162	1769	6321	396	1769	750	956	1769	1113	647
Capacity Analysis Module:												
Vol/Sat:	0.08	0.23	0.23	0.06	0.40	0.40	0.11	0.12	0.12	0.04	0.08	0.08
Crit Moves:	****				****		****				****	
Green/Cycle:	0.10	0.50	0.50	0.13	0.53	0.53	0.14	0.18	0.18	0.07	0.11	0.11
Volume/Cap:	0.75	0.45	0.45	0.45	0.75	0.75	0.75	0.63	0.63	0.63	0.75	0.75
Delay/Veh:	59.8	16.1	16.1	42.0	19.5	19.5	53.5	42.0	42.0	55.8	58.0	58.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	59.8	16.1	16.1	42.0	19.5	19.5	53.5	42.0	42.0	55.8	58.0	58.0
LOS by Move:	E	B	B	D	B	B	D	D	D	E	E	E
HCM2k95thQ:	203	287	287	134	618	618	343	311	311	172	296	296

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 3	1	0	1	0 3	1	0	1	0 0	1	0	1	0 0	1	0
Lane Group:	L	RT		RT	L	RT		RT	L	RT		RT	L	RT		RT
#LnsInGrps:	1	4		4	1	4		4	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	1.00	1.00		xxxx	0.99	0.99		xxxx	0.92	0.92		xxxx	0.95	0.95	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.98		0.93	0.97	0.97		0.93	0.90	0.90		0.93	0.93	0.93	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	0.91		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.89		0.93	0.88	0.88		0.93	0.90	0.90		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.10	0.50	0.50		0.13	0.53	0.53		0.14	0.18	0.18		0.07	0.11	0.11	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.74	0.74		0.97	0.81	0.81		0.98	0.97	0.97		0.99	0.99	0.99	
Q1:		3.6	5.6	5.6		2.5	12.8	12.8		4.9	4.9	4.9		2.1	3.9	3.9
UpstreamVC:	0.71	0.71	0.71		0.78	0.78	0.78		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.64	0.64	0.64		0.53	0.53	0.53		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	0.17	0.45	0.45		0.16	0.38	0.38		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:		0.5	0.4	0.4		0.1	1.1	1.1		2.3	1.6	1.6		1.4	2.2	2.2
HCM2KQueue:		4.1	5.9	5.9		2.7	13.9	13.9		7.2	6.5	6.5		3.5	6.2	6.2
70th%Factor:	1.19	1.19	1.19		1.19	1.17	1.17		1.18	1.19	1.19		1.19	1.19	1.19	
HCM2k70thQ:		4.9	7.1	7.1		3.2	16.3	16.3		8.5	7.7	7.7		4.1	7.3	7.3
85th%Factor:	1.56	1.55	1.55		1.57	1.49	1.49		1.54	1.54	1.54		1.57	1.54	1.54	
HCM2k85thQ:		6.4	9.2	9.2		4.2	20.7	20.7		11.1	10.0	10.0		5.4	9.5	9.5
90th%Factor:	1.73	1.70	1.70		1.75	1.60	1.60		1.68	1.69	1.69		1.74	1.69	1.69	
HCM2k90thQ:		7.1	10.1	10.1		4.7	22.2	22.2		12.1	10.9	10.9		6.0	10.4	10.4
95th%Factor:	1.98	1.93	1.93		2.02	1.78	1.78		1.90	1.92	1.92		2.00	1.93	1.93	
HCM2k95thQ:		8.1	11.5	11.5		5.4	24.7	24.7		13.7	12.4	12.4		6.9	11.9	11.9
98th%Factor:	2.43	2.33	2.33		2.52	2.04	2.04		2.27	2.31	2.31		2.47	2.32	2.32	
HCM2k98thQ:		10.0	13.9	13.9		6.7	28.4	28.4		16.4	14.9	14.9		8.5	14.3	14.3

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.790
Loss Time (sec):	12	Average Delay (sec/veh):	34.4
Optimal Cycle:	75	Level Of Service:	C

Street Name:	West Lane						Hammer Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	4 0	1	2 0	4 0	1	2 0	4 0	1	2 0	4 0	1
Volume Module:	AM Peak Hour											
Base Vol:	119	911	271	666	1418	124	155	795	98	539	815	360
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	119	911	271	666	1418	124	155	795	98	539	815	360
Added Vol:	0	125	0	0	242	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	119	1036	271	666	1660	124	155	795	98	539	815	360
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	129	1126	295	724	1804	135	168	864	107	586	886	391
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	129	1126	295	724	1804	135	168	864	107	586	886	391
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	129	1126	295	724	1804	135	168	864	107	586	886	391
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.04	0.17	0.19	0.21	0.27	0.09	0.05	0.13	0.07	0.17	0.13	0.25
Crit Moves:			****	****				****		****		
Green/Cycle:	0.06	0.24	0.24	0.27	0.44	0.44	0.06	0.16	0.16	0.22	0.31	0.31
Volume/Cap:	0.60	0.71	0.79	0.79	0.60	0.19	0.79	0.79	0.42	0.79	0.42	0.79
Delay/Veh:	50.5	36.5	46.8	38.7	21.7	17.3	63.4	44.3	38.8	42.8	27.1	39.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.5	36.5	46.8	38.7	21.7	17.3	63.4	44.3	38.8	42.8	27.1	39.2
LOS by Move:	D	D	D	D	C	B	E	D	D	D	C	D
HCM2k95thQ:	152	448	476	471	436	93	221	420	162	399	242	474

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2 0	4 0	1		2 0	4 0	1		2 0	4 0	1		2 0	4 0	1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	4	1		2	4	1		2	4	1		2	4	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.06	0.24	0.24	0.27	0.44	0.44	0.06	0.16	0.16	0.22	0.31	0.31
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.96	0.97	0.96	0.84	0.76	0.99	0.98	0.96	0.98	0.89	0.95
Q1:	1.8	7.6	7.5	9.3	8.8	1.7	2.4	6.2	2.6	7.7	4.8	9.4
UpstreamVC:	0.00	0.00	0.00	0.75	0.75	0.75	0.00	0.00	0.00	0.77	0.77	0.77
UpstreamAdj:	0.00	0.00	0.00	0.58	0.58	0.58	0.00	0.00	0.00	0.55	0.55	0.55
EarlyArrAdj:	1.00	1.00	1.00	0.27	0.38	0.34	1.00	1.00	1.00	0.23	0.29	0.26
Q2:	1.2	2.1	2.9	0.9	0.6	0.1	2.1	2.8	0.7	0.8	0.2	0.9
HCM2KQueue:	3.0	9.7	10.4	10.2	9.4	1.8	4.5	9.0	3.2	8.5	5.0	10.3
70th%Factor:	1.19	1.18	1.18	1.18	1.18	1.20	1.19	1.18	1.19	1.18	1.19	1.18
HCM2k70thQ:	3.6	11.4	12.2	12.0	11.1	2.2	5.3	10.6	3.9	10.1	5.9	12.1
85th%Factor:	1.57	1.52	1.51	1.51	1.52	1.58	1.56	1.52	1.57	1.53	1.55	1.51
HCM2k85thQ:	4.8	14.7	15.7	15.5	14.3	2.9	7.0	13.7	5.1	13.0	7.7	15.6
90th%Factor:	1.74	1.65	1.64	1.64	1.65	1.77	1.72	1.65	1.74	1.66	1.71	1.64
HCM2k90thQ:	5.3	16.0	17.0	16.8	15.5	3.2	7.7	14.9	5.6	14.2	8.5	16.9
95th%Factor:	2.01	1.85	1.84	1.84	1.86	2.04	1.97	1.86	2.00	1.87	1.96	1.84
HCM2k95thQ:	6.1	17.9	19.0	18.8	17.4	3.7	8.8	16.8	6.5	16.0	9.7	19.0
98th%Factor:	2.49	2.17	2.15	2.16	2.19	2.57	2.41	2.20	2.48	2.22	2.38	2.15
HCM2k98thQ:	7.6	21.1	22.3	22.1	20.5	4.7	10.8	19.8	8.0	18.9	11.8	22.2

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.771
Loss Time (sec): 12 Average Delay (sec/veh): 33.8
Optimal Cycle: 71 Level Of Service: C

Street Name:	Hammer Lane						Holman Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	3 0	1	2 0	3 1	0	2 0	3 1	0
Volume Module:	AM Peak Hour											
Base Vol:	329	311	82	182	641	309	331	1507	308	181	1507	82
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	329	311	82	182	641	309	331	1507	308	181	1507	82
Added Vol:	0	10	0	0	19	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	329	321	82	182	660	309	331	1507	308	181	1507	82
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	358	349	89	198	717	336	360	1638	335	197	1638	89
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	358	349	89	198	717	336	360	1638	335	197	1638	89
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	358	349	89	198	717	336	360	1638	335	197	1638	89
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.87	0.87	0.90	0.89	0.83	0.90	0.87	0.87	0.90	0.88	0.88
Lanes:	2.00	2.39	0.61	2.00	3.00	1.00	2.00	3.32	0.68	2.00	3.79	0.21
Final Sat.:	3432	3927	1003	3432	5083	1583	3432	5487	1121	3432	6376	347
Capacity Analysis Module:												
Vol/Sat:	0.10	0.09	0.09	0.06	0.14	0.21	0.10	0.30	0.30	0.06	0.26	0.26
Crit Moves:	****					****	****				****	
Green/Cycle:	0.14	0.25	0.25	0.16	0.28	0.28	0.14	0.39	0.39	0.08	0.33	0.33
Volume/Cap:	0.77	0.36	0.36	0.36	0.51	0.77	0.77	0.76	0.76	0.76	0.77	0.77
Delay/Veh:	49.5	31.1	31.1	37.7	30.9	41.5	49.4	27.5	27.5	57.5	31.6	31.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.5	31.1	31.1	37.7	30.9	41.5	49.4	27.5	27.5	57.5	31.6	31.6
LOS by Move:	D	C	C	D	C	D	D	C	C	E	C	C
HCM2k95thQ:	349	194	194	130	295	435	263	575	575	236	622	622

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	1	0	2	0 3	0	1	2	0 3	1	0	2	0 3	1	0
Lane Group:	L	RT		RT	L	T		R	L	RT		RT	L	RT		RT
#LnsInGrps:	2	3		3	2	3		1	2	4		4	2	4		4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.97	0.97		xxxx	xxxx	0.85		xxxx	0.98	0.98		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.95	0.95		0.93	0.98	0.83		0.93	0.96	0.96		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	0.91		0.97	0.91	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.87	0.87		0.90	0.89	0.83		0.90	0.87	0.87		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

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Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.14	0.25	0.25		0.16	0.28	0.28		0.14	0.39	0.39		0.08	0.33	0.33	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.92	0.92		0.96	0.92	0.96		0.99	0.91	0.91		0.99	0.94	0.94	
Q1:	4.9	3.4	3.4		2.4	5.7	8.2		4.9	11.9	11.9		2.7	11.1	11.1	
UpstreamVC:	0.00	0.00	0.00		0.53	0.53	0.53		0.79	0.79	0.79		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.84	0.84	0.84		0.52	0.52	0.52		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		0.29	0.41	0.37		0.16	0.31	0.31		1.00	1.00	1.00	
Q2:	2.5	0.5	0.5		0.2	0.4	1.1		0.5	0.9	0.9		2.1	2.9	2.9	
HCM2KQueue:	7.3	3.9	3.9		2.6	6.1	9.4		5.4	12.8	12.8		4.8	14.0	14.0	
70th%Factor:	1.18	1.19	1.19		1.19	1.19	1.18		1.19	1.17	1.17		1.19	1.17	1.17	
HCM2k70thQ:	8.7	4.7	4.7		3.1	7.3	11.1		6.4	15.0	15.0		5.7	16.4	16.4	
85th%Factor:	1.53	1.56	1.56		1.58	1.54	1.52		1.55	1.50	1.50		1.56	1.49	1.49	
HCM2k85thQ:	11.3	6.1	6.1		4.0	9.4	14.3		8.4	19.2	19.2		7.5	20.9	20.9	
90th%Factor:	1.68	1.73	1.73		1.75	1.69	1.65		1.71	1.61	1.61		1.71	1.60	1.60	
HCM2k90thQ:	12.3	6.8	6.8		4.5	10.4	15.5		9.2	20.6	20.6		8.3	22.4	22.4	
95th%Factor:	1.90	1.98	1.98		2.02	1.93	1.86		1.94	1.79	1.79		1.96	1.78	1.78	
HCM2k95thQ:	13.9	7.8	7.8		5.2	11.8	17.4		10.5	23.0	23.0		9.4	24.9	24.9	
98th%Factor:	2.27	2.44	2.44		2.52	2.32	2.19		2.36	2.07	2.07		2.39	2.04	2.04	
HCM2k98thQ:	16.7	9.6	9.6		6.5	14.2	20.5		12.8	26.6	26.6		11.5	28.6	28.6	

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #51 Eight Mile & Commercial DW #1

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[11.7]

Street Name:	Commercial Site Driveway #1						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 1			0 0 0 0 0			0 0 4 0 1			0 0 4 0 0		
Volume Module:	AM Peak Hour											
Base Vol:	0	0	0	0	0	0	0	1638	0	0	1659	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	1638	0	0	1659	0
Added Vol:	0	0	1	0	0	0	0	107	6	0	197	0
Pass-By Vol:	0	0	2	0	0	0	0	-3	3	0	0	0
Initial Fut:	0	0	3	0	0	0	0	1742	9	0	1856	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	3	0	0	0	0	1893	10	0	2017	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	3	0	0	0	0	1893	10	0	2017	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	473	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	537	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	537	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	0.5	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	11.7	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	11.7			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #51 Eight Mile & Commercial DW #1

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:							#17			#22		
Dist(miles):							0.250			0.250		
Speed (mph):							1.00			1.00		
SignalIndex:							#8			#53		
Cycle Time:							100 secs			100 secs		
InitVolume:							167	1461		90	1763	
Saturation:							3432	4890		1769	6778	
ArrivalType:							4	4		4	4	
G/C:							0.13	0.35		0.18	0.73	
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:							0.171	0.462		0.244	0.969	
gq1:							4.03	16.08		3.85	0.80	
gq2:							0.28	10.64		0.28	0.43	
gq:							4.31	26.72		4.13	1.23	
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:							0.350			0.350		
beta:							0.741			0.741		
ta (secs):							900.000			900.000		
F:							0.004			0.004		
f:							1.000	1.000		1.000	1.000	
vcmax:							63	528		31	35	
vcg:							68	575		36	645	
vcmin:							3000	3000		3000	3000	
tp:							0.0	0.0		0.0	0.0	
p:							0.000			0.000		
*** Computation 3: Platoon Event Periods												
pdom/psubo:							0.000/0.000/Unconstrained					
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	2398	3911	473	2491	3921	504	0	xxxxx	xxxxx	0	xxxxx	xxxxx
AdjCnflVol:	2398	3911	473	2491	3921	504	0	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
ConflictVol:	2398	3911	473	2491	3921	504	0	xxxxx	xxxxx	0	xxxxx	xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	28	3	537	15	3	513	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
Potent Cap.:	28	3	537	15	3	513	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #52 Eight Mile & Commercial DW #2

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[11.8]

Street Name:	Commercial Site Driveway #2						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 1			0 0 0 0 0			0 0 3 1 0			0 0 4 0 0		
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	0	0	0	0	1638	0	0	1659	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	1638	0	0	1659	0
Added Vol:	0	0	5	0	0	0	0	101	6	0	197	0
Pass-By Vol:	0	0	2	0	0	0	0	-3	3	0	0	0
Initial Fut:	0	0	7	0	0	0	0	1736	9	0	1856	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	8	0	0	0	0	1887	10	0	2017	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	8	0	0	0	0	1887	10	0	2017	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	477	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	535	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	535	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	1.1	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	11.8	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	11.8			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #52 Eight Mile & Commercial DW #2

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:							#17			#22		
Dist(miles):							0.250			0.250		
Speed (mph):							1.00			1.00		
SignalIndex:							#8			#53		
Cycle Time:							100 secs			100 secs		
InitVolume:							167	1461		90	1763	
Saturation:							3432	4890		1769	6778	
ArrivalType:							4	4		4	4	
G/C:							0.13	0.35		0.18	0.73	
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:							0.171	0.462		0.244	0.969	
gq1:							4.03	16.08		3.85	0.80	
gq2:							0.28	10.64		0.28	0.43	
gq:							4.31	26.72		4.13	1.23	
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:							0.350			0.350		
beta:							0.741			0.741		
ta (secs):							900.000			900.000		
F:							0.004			0.004		
f:							1.000	1.000		1.000	1.000	
vcmax:							63	528		31	35	
vcg:							68	575		36	645	
vcmin:							3000	3000		3000	3000	
tp:							0.0	0.0		0.0	0.0	
p:							0.000			0.000		
*** Computation 3: Platoon Event Periods												
pdom/psubo:							0.000/0.000/Unconstrained					
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	2396	3909	477	2489	3914	504	0	xxxxx	xxxxx	0	xxxxx	xxxxx
AdjCnflVol:	2396	3909	477	2489	3914	504	0	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
ConflictVol:	2396	3909	477	2489	3914	504	0	xxxxx	xxxxx	0	xxxxx	xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	28	3	535	15	3	513	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
Potent Cap.:	28	3	535	15	3	513	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #53 Eight Mile Road & Road C

Cycle (sec):	100	Critical Vol./Cap.(X):	0.496
Loss Time (sec):	9	Average Delay (sec/veh):	12.2
Optimal Cycle:	34	Level Of Service:	B

Street Name:	Road C						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	0	0	0	0	1638	0	0	1659	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	1638	0	0	1659	0
Added Vol:	90	0	132	0	0	0	0	65	41	139	107	0
PasserByVol:	0	0	0	0	0	0	0	0	0	3	-3	0
Initial Fut:	90	0	132	0	0	0	0	1703	41	142	1763	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	98	0	143	0	0	0	0	1851	45	154	1916	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	98	0	143	0	0	0	0	1851	45	154	1916	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	98	0	143	0	0	0	0	1851	45	154	1916	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.89	0.83	0.93	0.89	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	4.00	1.00	1.00	4.00	0.00
Final Sat.:	1769	0	1583	0	0	0	0	6778	1583	1769	6778	0
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.09	0.00	0.00	0.00	0.00	0.27	0.03	0.09	0.28	0.00
Crit Moves:			****					****		****		
Green/Cycle:	0.18	0.00	0.18	0.00	0.00	0.00	0.00	0.55	0.55	0.18	0.73	0.00
Volume/Cap:	0.30	0.00	0.50	0.00	0.00	0.00	0.00	0.50	0.05	0.50	0.39	0.00
Delay/Veh:	35.9	0.0	38.0	0.0	0.0	0.0	0.0	14.0	10.4	38.4	5.2	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.9	0.0	38.0	0.0	0.0	0.0	0.0	14.0	10.4	38.4	5.2	0.0
LOS by Move:	D	A	D	A	A	A	A	B	B	D	A	A
HCM2k95thQ:	133	0	215	0	0	0	0	293	18	228	70	0

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #53 Eight Mile Road & Road C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0	1	0	4	0	0
Lane Group:	L	xxxx	R		xxxx	xxxx	xxxx	xxxx	T	R			L	T	xxxx	
#LnsInGrps:	1	0	1		0	0	0	0	4	1			1	4	0	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12	12	12	12			12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		xxxx	xxxx	xxxx	xxxx	xxxx	xxxx			1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	1.00		xxxx	xxxx	xxxxx	xxxx	1.00	1.00			1.00	1.00	xxxxx	
Hev Veh Adj:	0.98	xxxx	0.98		xxxx	xxxx	xxxxx	xxxx	0.98	0.98			0.98	0.98	xxxxx	
Grade Adj:	1.00	xxxx	1.00		xxxx	xxxx	xxxxx	xxxx	1.00	1.00			1.00	1.00	xxxxx	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	xxxxx	xxxx	xxxx	1.00			xxxx	1.00	xxxxx	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	xxxxx	xxxx	xxxx	1.00			xxxx	1.00	xxxxx	
Area Adj:	1.00	xxxx	1.00		xxxx	xxxx	xxxxx	xxxx	1.00	1.00			1.00	1.00	xxxxx	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	xxxxx	xxxx	xxxx	0.85			xxxx	xxxx	xxxxx	
LT Adj:	0.95	xxxx	xxxxx		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx			0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	
HCM Sat Adj:	0.93	1.00	0.83		1.00	1.00	1.00	1.00	0.98	0.83			0.93	0.98	1.00	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.91	1.00			1.00	0.91	1.00	
Fnl Sat Adj:	0.93	1.00	0.83		1.00	1.00	1.00	1.00	0.89	0.83			0.93	0.89	1.00	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	1.00		0.00	0.00	0.00	0.00	1.00	1.00			1.00	1.00	0.00	

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #53 Eight Mile Road & Road C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.18	0.00	0.18	0.00	0.00	0.00	0.00	0.55	0.55	0.18	0.73	0.00
ArrivalType:		4			4			4			4	
ProgFactor:	0.94	1.00	0.96	1.00	1.00	1.00	1.00	0.68	0.60	0.96	0.13	1.00
Q1:	2.2	0.0	3.4	0.0	0.0	0.0	0.0	5.9	0.3	3.7	0.7	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.94	0.94	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	0.00	0.00	0.00
EarlyArrAdj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.18	0.16	1.00	1.00	0.00
Q2:	0.4	0.0	0.9	0.0	0.0	0.0	0.0	0.2	0.0	0.9	0.6	0.0
HCM2KQueue:	2.6	0.0	4.4	0.0	0.0	0.0	0.0	6.1	0.4	4.7	1.4	0.0
70th%Factor:	1.19	1.20	1.19	1.20	1.20	1.20	1.20	1.19	1.20	1.19	1.20	1.20
HCM2k70thQ:	3.2	0.0	5.2	0.0	0.0	0.0	0.0	7.2	0.4	5.5	1.6	0.0
85th%Factor:	1.57	1.60	1.56	1.60	1.60	1.60	1.60	1.55	1.60	1.56	1.59	1.60
HCM2k85thQ:	4.2	0.0	6.8	0.0	0.0	0.0	0.0	9.4	0.6	7.2	2.1	0.0
90th%Factor:	1.75	1.80	1.72	1.80	1.80	1.80	1.80	1.70	1.79	1.72	1.77	1.80
HCM2k90thQ:	4.6	0.0	7.5	0.0	0.0	0.0	0.0	10.3	0.6	8.0	2.4	0.0
95th%Factor:	2.02	2.10	1.97	2.10	2.10	2.10	2.10	1.93	2.09	1.96	2.06	2.10
HCM2k95thQ:	5.3	0.0	8.6	0.0	0.0	0.0	0.0	11.7	0.7	9.1	2.8	0.0
98th%Factor:	2.52	2.70	2.41	2.70	2.70	2.70	2.70	2.33	2.67	2.40	2.60	2.70
HCM2k98thQ:	6.7	0.0	10.5	0.0	0.0	0.0	0.0	14.1	0.9	11.2	3.5	0.0

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #54 West Lane & Commercial DW #3

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[10.2]

Street Name:	West Lane						Commercial Site Driveway #3					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	3	1	0	0	0	2	0	0	0	0
Volume Module:AM Peak Hour												
Base Vol:	0	968	0	0	1494	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	968	0	0	1494	0	0	0	0	0	0	0
Added Vol:	0	119	8	0	84	0	0	0	0	0	0	4
Pass-By Vol:	0	-3	3	0	0	0	0	0	0	0	0	2
Initial Fut:	0	1084	11	0	1578	0	0	0	0	0	0	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	1178	12	0	1715	0	0	0	0	0	0	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	1178	12	0	1715	0	0	0	0	0	0	7
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	301
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	696
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	696
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.7
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	10.2
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	B
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			10.2		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

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Intersection #54 West Lane & Commercial DW #3
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
-----------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                        #99
Dist(miles):                       0.250
Speed (mph):                        1.00
SignalIndex:                       #8
Cycle Time:                          100 secs
InitVolume:                    254   831
Saturation:                   3432  3538
ArrivalType:                     4     4
G/C:                           0.08  0.27
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                            0.113 0.359
gq1:                           6.57 15.06
gq2:                           0.72  6.87
gq:                            7.28 21.93
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                             0.400
beta:                              0.714
ta (secs):                        900.000
F:                                  0.004
f:                            1.000 1.000
vcmax:                           96   289
vcg:                             97   304
vcmin:                         2000  2000
tp:                             0.0   0.0
p:                                 0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 2010  2905   858 2042  2899   301
AdjCnflVol:    0 xxxxx xxxxx    0 xxxxx xxxxx 2010  2905   858 2042  2899   301
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 2010  2905   858 2042  2899   301
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1622 xxxxx xxxxx 1622 xxxxx xxxxx   35    15   300   49    16   696
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1622 xxxxx xxxxx 1622 xxxxx xxxxx   35    15   300   49    16   696
```


Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

```
*******************************************************************************
Intersection #55 West Lane & Commercial DW #4
*******************************************************************************
Average Delay (sec/veh):      0.0       Worst Case Level Of Service: B[ 10.2]
*******************************************************************************
Street Name:            West Lane                Commercial Site Driveway #4
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
-----------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  3  1  0    0  0  4  0  0    0  0  0  0  0    0  0  0  0  1
-----------|---------------||---------------||---------------||---------------|
Volume Module:AM Peak Hour
Base Vol:       0  968     0     0 1494     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  968     0     0 1494     0     0    0     0     0    0     0
Added Vol:      0  126     8     0   84     0     0    0     0     0    0     2
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0 1094     8     0 1578     0     0    0     0     0    0     2
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0 1189     9     0 1715     0     0    0     0     0    0     2
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0 1189     9     0 1715     0     0    0     0     0    0     2
-----------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.9
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3
-----------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   302
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   694
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   694
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.00
-----------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.2
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  10.2
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     B
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             10.2
ApproachLOS:         *                *                *                B
*******************************************************************************
Note: Queue reported is the distance per lane in feet.
*******************************************************************************
```

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #55 West Lane & Commercial DW #4

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	2%	2%	2%	2%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0
Pedestrian Walk Speed: 4.00 feet/sec				
LaneWidth:	12 feet	12 feet	12 feet	12 feet
Time Period: 0.25 hour				

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #56 West Lane & Road A

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[11.1]

Street Name:	West Lane												Road A											
Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1
Volume Module:AM Peak Hour																				
Base Vol:	0	968	0	0	1494	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	968	0	0	1494	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	48	67	0	84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	86
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1016	67	0	1578	0	0	0	0	0	0	0	0	0	0	0	0	0	0	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	1104	73	0	1715	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	1104	73	0	1715	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9								
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	313								
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	683								
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	683								
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.14								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	11.8								
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.1								
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	B								
Movement:	LT - LTR - RT					LT - LTR - RT					LT - LTR - RT					LT - LTR - RT				
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			11.1										
ApproachLOS:	*			*			*			B										

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #56 West Lane & Road A

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:       #106             #99
Dist(miles):      0.250            0.250
Speed (mph):       1.00             1.00
SignalIndex:      #16              #8
Cycle Time:         100 secs         100 secs
InitVolume:   128   928        254   831
Saturation:  1769  6239       3432  3538
ArrivalType:    4     4          4     4
G/C:         0.34  0.43       0.08  0.27
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:          0.447 0.571      0.113 0.359
gq1:         4.00  6.37       6.57 15.06
gq2:         0.43  1.58       0.72  6.87
gq:          4.43  7.95       7.28 21.93
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:            0.350            0.350
beta:             0.741            0.741
ta (secs):       900.000           900.000
F:                0.004            0.004
f:          1.000 1.000      1.000 1.000
vcmax:         33   209        105   317
vcg:           49   351        106   333
vcmin:       3000  3000       3000  3000
tp:           0.0   0.0        0.0   0.0
p:                0.000            0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1991  2892   429 1570  2856   313
AdjCnflVol:    0 xxxxx xxxxx    0 xxxxx xxxxx 1991  2892   429 1570  2856   313
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1991  2892   429 1570  2856   313
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1622 xxxxx xxxxx 1622 xxxxx xxxxx   36    16   574  101    17   683
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1622 xxxxx xxxxx 1622 xxxxx xxxxx   36    16   574  101    17   683
```


Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #57 Eight Mile & Hi Dens Res DW #1

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[13.2]

```
Street Name:  High Density Resid Driveway #1          Eight Mile Road
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  0    0  0  3  1  0    0  0  4  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:AM Peak Hour
Base Vol:       0    0     0     0    0     0     0 1638     0     0 1659     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0     0    0     0     0 1638     0     0 1659     0
Added Vol:      0    0    68     0    0     0     0  192    17     0  181     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0    68     0    0     0     0 1830    17     0 1840     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0    74     0    0     0     0 1989    18     0 2000     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0    74     0    0     0     0 1989    18     0 2000     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   507  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx   511  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx   511  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.14  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx  12.6  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx  13.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     B     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      13.2           xxxxxx            xxxxxx            xxxxxx
ApproachLOS:         B                 *                 *                 *
```

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #57 Eight Mile & Hi Dens Res DW #1

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #58 Eight Mile & Hi Dens Res DW #2

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[13.4]

Street Name:	High Density Resid Driveway #2						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 1			0 0 0 0 0			0 0 3 1 0			0 0 4 0 0		
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	0	0	0	0	1638	0	0	1659	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	1638	0	0	1659	0
Added Vol:	0	0	68	0	0	0	0	243	17	0	181	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	68	0	0	0	0	1881	17	0	1840	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	74	0	0	0	0	2045	18	0	2000	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	74	0	0	0	0	2045	18	0	2000	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	520	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	501	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	501	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.15	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	12.9	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	13.4	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	13.4			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #58 Eight Mile & Hi Dens Res DW #2

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #60 Eight Mile & Industrial DW #1

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[11.0]

Street Name:	Industrial Site Driveway #2						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 1			0 0 0 0 0			0 0 4 1 0			0 0 4 0 0		
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	0	0	0	0	1519	0	0	1513	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	1519	0	0	1513	0
Added Vol:	0	0	1	0	0	0	0	311	2	0	188	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	1	0	0	0	0	1830	2	0	1701	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	1	0	0	0	0	1989	2	0	1849	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	1	0	0	0	0	1989	2	0	1849	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	399	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	601	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	601	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.1	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	11.0	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	11.0			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #60 Eight Mile & Industrial DW #1

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			12 feet			12 feet			12 feet	
Time Period: 0.25 hour												

Cumul + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #61 Eight Mile & Industrial DW #2

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[11.0]

Street Name:	Industrial Site Driveway #2						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 1			0 0 0 0 0			0 0 4 1 0			0 0 4 0 0		
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	0	0	0	0	1519	0	0	1513	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	1519	0	0	1513	0
Added Vol:	0	0	1	0	0	0	0	310	2	0	188	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	1	0	0	0	0	1829	2	0	1701	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	1	0	0	0	0	1988	2	0	1849	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	1	0	0	0	0	1988	2	0	1849	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	399	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	601	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	601	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.1	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	11.0	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	11.0			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the distance per lane in feet.

Cumul + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #61 Eight Mile & Industrial DW #2

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	2%	2%	2%	2%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0
LaneWidth:	12 feet	12 feet	12 feet	12 feet

Pedestrian Walk Speed: 4.00 feet/sec
Time Period: 0.25 hour

Cumul + Project AM Pk Hr

Future Queue Length Report (feet)

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
#3	[HCM2k95thQ]:	229	402	239	707	397	251	213	469	110	203	638	638
#4	[HCM2k95thQ]:	363	232	258	317	425	180	124	450	206	308	469	469
#5	[HCM2k95thQ]:	130	302	496	533	360	111	192	666	108	500	632	632
#6	[HCM2k95thQ]:	74	460	690	1257	265	20	115	628	39	1103	247	422
#7	[HCM2k95thQ]:	137	137	137	163	163	163	76	152	152	99	117	117
#8	[HCM2k95thQ]:	501	249	129	150	816	555	408	914	940	266	643	643
#9	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	48.5	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#10	[HCM2k95thQ]:	86	0	86	550	0	36	235	448	448	91	631	631
#11	[HCM2k95thQ]:	431	54	30	49	159	495	251	308	721	63	383	13
#12	[HCM2k95thQ]:	2	200	200	461	7	7	9	513	1	119	523	523
#13	[HCM2k95thQ]:	18	17	17	23	22	22	9	11	0	23	11	11
#16	[HCM2k95thQ]:	244	250	250	66	410	93	136	0	216	377	0	18
#17	[HCM2k95thQ]:	48	154	266	623	174	31	83	570	26	537	772	772
#18	[HCM2k95thQ]:	303	257	155	133	544	100	92	189	423	287	157	92
#19	[HCM2k95thQ]:	226	172	123	167	297	140	171	288	213	256	217	72
#22	[HCM2k95thQ]:	6	54	98	253	40	40	28	195	195	124	221	231
#24	[HCM2k95thQ]:	349	186	186	50	728	728	60	440	440	218	46	46
#25	[HCM2k95thQ]:	203	287	287	134	618	618	343	311	311	172	296	296
#26	[HCM2k95thQ]:	152	448	476	471	436	93	221	420	162	399	242	474
#27	[HCM2k95thQ]:	349	194	194	130	295	435	263	575	575	236	622	622
#51	[2Way95thQ]:	xxxx	xxxx	0.5	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#52	[2Way95thQ]:	xxxx	xxxx	1.1	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#53	[HCM2k95thQ]:	133	0	215	0	0	0	0	293	18	228	70	0
#54	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.7
#55	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.2
#56	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	11.8
#57	[2Way95thQ]:	xxxx	xxxx	12.6	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#58	[2Way95thQ]:	xxxx	xxxx	12.9	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#60	[2Way95thQ]:	xxxx	xxxx	0.1	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#61	[2Way95thQ]:	xxxx	xxxx	0.1	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Cumul + Project PM Pk Hr - With Mitigation Measures

Scenario Report

Scenario:	Cumul + Proj PM
Command:	Cumul + Proj PM
Volume:	Cumul Proj PM
Geometry:	Cumul Proj
Impact Fee:	Default Impact Fee
Trip Generation:	PM Pk Hr
Trip Distribution:	Cumul No Bridge PM
Paths:	Cumul Proj
Routes:	Default Route
Configuration:	Default Configuration

Cumul + Project PM Pk Hr - With Mitigation Measures

Trip Generation Report

Forecast for PM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	750.00	ElemSchStudent	0.07	0.08	53	60	113	7.2
1	Village West	745.00	Tra Vigne SFDU	0.52	0.30	387	224	611	39.0
1	Village West	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	2.63	2.85	0	0	0	0.0
1	Village West	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
1	Village West	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
1	Village West	0.00	GP Alt MFDU	0.41	0.22	0	0	0	0.0
1	Village West	1.00	Tra V Internal	-64.00	-64.00	-64	-64	-128	-8.2
1	Village West	0.00	GP Alt Interna	-76.00	-76.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-106.00	-111.00	0	0	0	0
1	Village West	0.00	Tra Vigne MFDU	0.12	0.48	0	0	0	0.0
	Zone 1 Subtotal					376	220	596	38.0
2	Village East	418.00	Tra Vigne SFDU	0.52	0.30	217	125	342	21.8
2	Village East	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
2	Village East	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
2	Village East	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
	Zone 2 Subtotal					217	125	342	21.8
3	Commercial	101.50	Tra V Comm KSF	2.86	3.10	290	315	605	38.6
3	Commercial	1.00	Tra V Pass-By	-90.00	-94.00	-90	-94	-184	-11.7
	Zone 3 Subtotal					200	221	421	26.8
4	Industrial	21.40	Indust KSF	0.05	0.17	1	4	5	0.3
	Zone 4 Subtotal					1	4	5	0.3
5	Hi Dens Res	340.00	Tra Vigne MFDU	0.12	0.48	41	163	204	13.0
	Zone 5 Subtotal					41	163	204	13.0
TOTAL						835	733	1568	100.0

Cumul + Project PM Pk Hr - With Mitigation Measures

Trip Distribution Report

Percent Of Trips Cumul No Bridge PM

To Gates

Zone	1	2	3	4	5	6	7	8	9	10	11
1	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	2.0
2	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	2.0
3	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	2.0
4	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	2.0
5	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	2.0

To Gates

Zone	14	15	16	17	18	19	20	21	22	23
1	1.0	2.0	5.0	1.0	2.0	29.0	10.0	1.0	2.0	14.0
2	1.0	2.0	5.0	1.0	2.0	29.0	10.0	1.0	2.0	14.0
3	1.0	2.0	5.0	1.0	2.0	29.0	10.0	1.0	2.0	14.0
4	1.0	2.0	5.0	1.0	2.0	29.0	10.0	1.0	2.0	14.0
5	1.0	2.0	5.0	1.0	2.0	29.0	10.0	1.0	2.0	14.0

Cumul + Project PM Pk Hr - With Mitigation Measures

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 5 Eight Mile & Lower Sacto Rd	E	61.1	1.070	E	74.0	1.139	+12.824 D/V
# 6 West Lane & Armstrong Road	D	50.7	0.999	D	50.5	0.999	-0.249 D/V

Cumul + Project PM Pk Hr - With Mitigation Measures

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]

Cumul + Project PM Pk Hr - With Mitigation Measures

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #5 Eight Mile & Lower Sacto Rd

****

Cycle (sec): 100 Critical Vol./Cap.(X): 1.139
Loss Time (sec): 12 Average Delay (sec/veh): 74.0
Optimal Cycle: 180 Level Of Service: E

****

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	4 0	1	2 0	4 0	1
Volume Module:	PM Peak Hour											
Base Vol:	173	781	407	612	506	110	212	1906	91	512	1919	502
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	173	781	407	612	506	110	212	1906	91	512	1919	502
Added Vol:	0	0	42	17	0	0	0	92	0	37	81	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	173	781	449	629	506	110	212	1998	91	549	2000	517
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	188	849	488	684	550	120	230	2172	99	597	2174	562
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	188	849	488	684	550	120	230	2172	99	597	2174	562
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	188	849	488	684	550	120	230	2172	99	597	2174	562
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.05	0.24	0.31	0.20	0.16	0.08	0.07	0.32	0.06	0.17	0.32	0.36
Crit Moves:			****	****				****		****		
Green/Cycle:	0.12	0.27	0.27	0.17	0.33	0.33	0.07	0.28	0.28	0.15	0.37	0.37
Volume/Cap:	0.47	0.89	1.14	1.14	0.47	0.23	0.97	1.14	0.22	1.14	0.88	0.97
Delay/Veh:	42.2	45.0	123.5	122.5	26.9	24.5	97.0	105	27.8	125.8	33.6	61.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.2	45.0	123.5	122.5	26.9	24.5	97.0	105	27.8	125.8	33.6	61.7
LOS by Move:	D	D	F	F	C	C	F	F	C	F	C	E
HCM2k95thQ:	165	712	1064	835	314	120	331	1241	110	756	841	946

****

Note: Queue reported is the distance per lane in feet.

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Cumul + Project PM Pk Hr - With Mitigation Measures

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	0 1		2	0 2	0 1		2	0 4	0 1		2	0 4	0 1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	2	1		2	2	1		2	4	1		2	4	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project PM Pk Hr - With Mitigation Measures

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.12	0.27	0.27		0.17	0.33	0.33		0.07	0.28	0.28		0.15	0.37	0.37	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.98	1.00		1.00	0.89	0.86		1.00	1.00	0.89		1.00	0.96	0.99	
Q1:		2.5	11.7	13.6	9.8	5.7	2.1	3.3	16.6	1.9	8.5	14.9	15.2			
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:		0.8	4.7	12.4	9.8	0.9	0.3	3.6	14.3	0.3	9.0	4.9	7.4			
HCM2KQueue:		3.3	16.4	25.9	19.6	6.6	2.4	6.9	30.9	2.2	17.5	19.8	22.7			
70th%Factor:	1.19	1.17	1.15		1.16	1.18	1.19		1.18	1.15	1.19		1.16	1.16	1.16	
HCM2k70thQ:		3.9	19.1	29.9	22.8	7.8	2.8	8.2	35.4	2.6	20.4	23.0	26.2			
85th%Factor:	1.57	1.47	1.43		1.46	1.54	1.58		1.54	1.41	1.58		1.47	1.46	1.44	
HCM2k85thQ:		5.2	24.1	37.0	28.6	10.1	3.7	10.7	43.4	3.4	25.7	28.8	32.6			
90th%Factor:	1.74	1.58	1.51		1.55	1.69	1.76		1.68	1.49	1.76		1.57	1.55	1.53	
HCM2k90thQ:		5.7	25.8	39.1	30.4	11.1	4.2	11.7	45.9	3.8	27.4	30.6	34.6			
95th%Factor:	2.00	1.74	1.64		1.70	1.92	2.03		1.91	1.61	2.03		1.73	1.70	1.67	
HCM2k95thQ:		6.6	28.5	42.6	33.4	12.6	4.8	13.2	49.6	4.4	30.2	33.6	37.8			
98th%Factor:	2.48	1.98	1.84		1.92	2.30	2.53		2.29	1.79	2.55		1.96	1.92	1.88	
HCM2k98thQ:		8.2	32.5	47.6	37.7	15.1	6.0	15.9	55.3	5.5	34.3	37.9	42.5			

```
------------------------------------------------------------------------------
              Cumul + Project PM Pk Hr - With Mitigation Measures
------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
******************************************************************************
Intersection #6 West Lane & Armstrong Road
******************************************************************************
Cycle (sec):        100                Critical Vol./Cap.(X):        0.999
Loss Time (sec):     12                Average Delay (sec/veh):       50.5
Optimal Cycle:      180                Level Of Service:                 D
******************************************************************************
Street Name:               West Lane                      Armstrong Road
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Protected        Protected        Protected
Rights:          Include          Include          Include           Ovl
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:        1  0  2  0  1   2  0  2  0  1   1  0  2  0  1   2  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:PM Peak Hour
Base Vol:      46  763   457   663  453    28    57  586    23   554  589   571
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   46  763   457   663  453    28    57  586    23   554  589   571
Added Vol:      0   51     0     0   58     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   46  814   457   663  511    28    57  586    23   554  589   571
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:    50  885   497   721  555    30    62  637    25   602  640   621
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   50  885   497   721  555    30    62  637    25   602  640   621
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   50  885   497   721  555    30    62  637    25   602  640   621
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.93 0.93  0.83  0.90 0.93  0.83  0.93 0.93  0.83  0.90 0.93  0.83
Lanes:       1.00 2.00  1.00  2.00 2.00  1.00  1.00 2.00  1.00  2.00 2.00  1.00
Final Sat.:  1769 3538  1583  3432 3538  1583  1769 3538  1583  3432 3538  1583
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.25  0.31  0.21 0.16  0.02  0.04 0.18  0.02  0.18 0.18  0.39
Crit Moves:             ****  ****                  ****        ****
Green/Cycle: 0.08 0.31  0.31  0.21 0.44  0.44  0.06 0.18  0.18  0.18 0.30  0.51
Volume/Cap:  0.35 0.80  1.00  1.00 0.35  0.04  0.61 1.00  0.09  1.00 0.61  0.77
Delay/Veh:   45.1 35.5  74.5  72.8 18.5  15.8  56.4 76.4  34.3  77.7 31.1  24.5
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  45.1 35.5  74.5  72.8 18.5  15.8  56.4 76.4  34.3  77.7 31.1  24.5
LOS by Move:    D    D     E     E    B     B     E    E     C     E    C     C
HCM2k95thQ:    93  641   909   741  232    21   147  690    33   654  415   646
******************************************************************************
Note: Queue reported is the distance per lane in feet.
******************************************************************************
```



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------------------------------------------------------------------------------
              Cumul + Project PM Pk Hr - With Mitigation Measures
------------------------------------------------------------------------------
                   Level Of Service Detailed Computation Report
                          2000 HCM Operations Method
                           Future Volume Alternative
******************************************************************************
Intersection #6 West Lane & Armstrong Road
******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        1  0  2  0  1   2  0  2  0  1   1  0  2  0  1   2  0  2  0  1
Lane Group:    L    T    R     L    T    R     L    T    R     L    T    R
#LnsInGrps:    1    2    1     2    2    1     1    2    1     2    2    1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:   12   12   12    12   12   12    12   12   12    12   12   12
CrsswalkWid:        8               8               8               8
% Hev Veh:          2               2               2               2
Grade:             0%              0%              0%              0%
Parking/Hr:        No              No              No              No
Bus Stp/Hr:         0               0               0               0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:        0               0               0               0
ExclusiveRT:    Include         Include         Include         Include
% RT Prtct:         0               0               0               0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Hev Veh Adj: 0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
Grade Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Parking Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00
Bus Stp Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00
Area Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
RT Adj:      xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx xxxx  0.85
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.93 0.98  0.83  0.93 0.98  0.83  0.93 0.98  0.83  0.93 0.98  0.83
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 0.95  1.00  0.97 0.95  1.00  1.00 0.95  1.00  0.97 0.95  1.00
Fnl Sat Adj: 0.93 0.93  0.83  0.90 0.93  0.83  0.93 0.93  0.83  0.90 0.93  0.83
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
******************************************************************************
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Cumul + Project PM Pk Hr - With Mitigation Measures

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.08	0.31	0.31		0.21	0.44	0.44		0.06	0.18	0.18		0.18	0.30	0.51	
ArrivalType:	4				4				4				4			
ProgFactor:	0.98	0.95	1.00		1.00	0.78	0.74		0.99	1.00	0.93		1.00	0.93	0.83	
Q1:	1.3	11.3	13.8		10.3	4.2	0.4		1.7	9.3	0.5		8.6	7.4	11.6	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.5	3.2	7.9		6.8	0.5	0.0		1.3	6.5	0.1		6.2	1.5	3.0	
HCM2KQueue:	1.8	14.5	21.6		17.1	4.7	0.4		2.9	15.8	0.6		14.8	8.9	14.6	
70th%Factor:	1.20	1.17	1.16		1.17	1.19	1.20		1.19	1.17	1.20		1.17	1.18	1.17	
HCM2k70thQ:	2.2	17.0	25.1		19.9	5.6	0.5		3.5	18.4	0.8		17.3	10.5	17.1	
85th%Factor:	1.58	1.49	1.45		1.47	1.56	1.60		1.57	1.48	1.59		1.48	1.52	1.48	
HCM2k85thQ:	2.9	21.5	31.3		25.1	7.4	0.6		4.6	23.3	1.0		22.0	13.5	21.7	
90th%Factor:	1.77	1.59	1.54		1.57	1.72	1.79		1.75	1.58	1.79		1.59	1.66	1.59	
HCM2k90thQ:	3.2	23.1	33.2		26.9	8.1	0.7		5.1	24.9	1.1		23.6	14.7	23.3	
95th%Factor:	2.04	1.77	1.68		1.73	1.96	2.09		2.01	1.75	2.08		1.76	1.87	1.77	
HCM2k95thQ:	3.7	25.6	36.4		29.6	9.3	0.8		5.9	27.6	1.3		26.2	16.6	25.8	
98th%Factor:	2.57	2.03	1.89		1.97	2.39	2.67		2.50	2.00	2.65		2.02	2.20	2.02	
HCM2k98thQ:	4.7	29.4	40.9		33.7	11.3	1.1		7.3	31.5	1.7		30.0	19.6	29.6	

Cumul + Project PM Pk Hr - With Mitigation Measures

Future Queue Length Report (feet)

Node	Intersection	Northbound L	-- T	-- R	Southbound L	-- T	-- R	Eastbound L	-- T	-- R	Westbound L	-- T	-- R
#5	[HCM2k95thQ]:	165	712	1064	835	314	120	331	1241	110	756	841	946
#6	[HCM2k95thQ]:	93	641	909	741	232	21	147	690	33	654	415	646

Cumul + Project PM Pk Hr

Scenario Report

Scenario:	Cumul + Proj PM
Command:	Cumul + Proj PM
Volume:	Cumul Proj PM
Geometry:	Cumul Proj
Impact Fee:	Default Impact Fee
Trip Generation:	PM Pk Hr
Trip Distribution:	Cumul No Bridge PM
Paths:	Cumul Proj
Routes:	Default Route
Configuration:	Default Configuration

Cumul + Project PM Pk Hr

Trip Generation Report

Forecast for PM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	750.00	ElemSchStudent	0.07	0.08	53	60	113	7.2
1	Village West	745.00	Tra Vigne SFDU	0.52	0.30	387	224	611	39.0
1	Village West	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	2.63	2.85	0	0	0	0.0
1	Village West	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
1	Village West	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
1	Village West	0.00	GP Alt MFDU	0.41	0.22	0	0	0	0.0
1	Village West	1.00	Tra V Internal	-64.00	-64.00	-64	-64	-128	-8.2
1	Village West	0.00	GP Alt Interna	-76.00	-76.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-106.00	-111.00	0	0	0	0
1	Village West	0.00	Tra Vigne MFDU	0.12	0.48	0	0	0	0.0
	Zone 1 Subtotal					376	220	596	38.0
2	Village East	418.00	Tra Vigne SFDU	0.52	0.30	217	125	342	21.8
2	Village East	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
2	Village East	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
2	Village East	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
	Zone 2 Subtotal					217	125	342	21.8
3	Commercial	101.50	Tra V Comm KSF	2.86	3.10	290	315	605	38.6
3	Commercial	1.00	Tra V Pass-By	-90.00	-94.00	-90	-94	-184	-11.7
	Zone 3 Subtotal					200	221	421	26.8
4	Industrial	21.40	Indust KSF	0.05	0.17	1	4	5	0.3
	Zone 4 Subtotal					1	4	5	0.3
5	Hi Dens Res	340.00	Tra Vigne MFDU	0.12	0.48	41	163	204	13.0
	Zone 5 Subtotal					41	163	204	13.0
TOTAL						835	733	1568	100.0

Cumul + Project PM Pk Hr

Trip Distribution Report

Percent Of Trips Cumul No Bridge PM

To Gates

Zone	1	2	3	4	5	6	7	8	9	10	11
1	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	2.0
2	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	2.0
3	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	2.0
4	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	2.0
5	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	2.0

To Gates

Zone	14	15	16	17	18	19	20	21	22	23
1	1.0	2.0	5.0	1.0	2.0	29.0	10.0	1.0	2.0	14.0
2	1.0	2.0	5.0	1.0	2.0	29.0	10.0	1.0	2.0	14.0
3	1.0	2.0	5.0	1.0	2.0	29.0	10.0	1.0	2.0	14.0
4	1.0	2.0	5.0	1.0	2.0	29.0	10.0	1.0	2.0	14.0
5	1.0	2.0	5.0	1.0	2.0	29.0	10.0	1.0	2.0	14.0

Cumul + Project PM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	F	89.8	1.190	F	95.5	1.212	+ 5.697 D/V
# 4 Eight Mile Rd & Davis Rd	D	38.3	0.826	D	39.2	0.844	+ 0.910 D/V
# 5 Eight Mile & Lower Sacto Rd	E	73.2	1.070	F	90.8	1.139	+17.631 D/V
# 6 West Lane & Armstrong Road	F	148.8	1.411	F	150.8	1.411	+ 1.929 D/V
# 7 West Lane & Ham Lane	B	12.4	0.505	B	13.2	0.537	+ 0.853 D/V
# 8 Eight Mile Rd & West Ln	E	77.5	1.098	F	99.2	1.137	+21.627 D/V
# 9 Eight Mile Road & Ham Lane	C	20.2	0.428	D	30.0	0.624	+ 9.845 D/V
# 10 Eight Mile & Leach Rd/St G	B	19.9	0.775	C	28.8	0.901	+ 8.833 D/V
# 11 Eight Mile & MickeGrove/Holman	C	34.7	0.831	D	43.8	0.938	+ 9.055 D/V
# 12 Eight Mile & SR 99 W Frontage	C	30.8	0.874	C	32.1	0.909	+ 1.351 D/V
# 13 Eight Mile & SR 99 E Frontage	A	4.1	0.239	A	4.0	0.245	-0.057 D/V
# 16 West & L.C.MarkTaylor/Marlette	B	17.5	0.520	C	23.5	0.597	+ 5.997 D/V
# 17 Holman & Lt Col Mark Taylor	F	93.2	1.173	F	92.3	1.173	-0.893 D/V
# 18 Morada Lane & West Lane	C	31.7	0.729	C	32.6	0.768	+ 0.820 D/V
# 19 Morada Lane & Holman Road	C	35.0	0.623	D	35.1	0.632	+ 0.125 D/V
# 22 Morada Ln & SR99 W Frontage Rd	C	24.6	0.653	C	24.5	0.653	-0.098 D/V
# 24 West Ln & West Ln Frontage Rd	C	28.9	0.841	C	29.6	0.880	+ 0.787 D/V
# 25 West Lane & Knickerbocker Dr	C	33.4	0.855	C	35.0	0.895	+ 1.588 D/V
# 26 West Lane & Hammer Lane	E	76.0	1.206	F	87.2	1.220	+11.123 D/V
# 27 Hammer Lane & Holman Road	D	52.1	1.032	D	52.1	1.032	-0.030 D/V
# 51 Eight Mile & Commercial DW #1	A	0.0	0.000	B	14.4	0.090	+14.356 D/V
# 52 Eight Mile & Commercial DW #2	A	0.0	0.000	C	15.8	0.187	+15.850 D/V
# 53 Eight Mile Road & Road C	A	0.7	0.383	B	11.6	0.640	+10.963 D/V
# 54 West Lane & Commercial DW #3	A	0.0	0.000	B	13.4	0.131	+13.440 D/V

Cumul + Project PM Pk Hr

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 55 West Lane & Commercial DW #4	A	0.0	0.000	B	12.5	0.022	+12.483 D/V
# 56 West Lane & Road A	A	0.0	0.000	B	13.3	0.083	+13.326 D/V
# 57 Eight Mile & Hi Dens Res DW #1	A	0.0	0.000	C	16.5	0.223	+16.540 D/V
# 58 Eight Mile & Hi Dens Res DW #2	A	0.0	0.000	C	16.9	0.228	+16.918 D/V
# 60 Eight Mile & Industrial DW #1	A	0.0	0.000	B	12.2	0.004	+12.243 D/V
# 61 Eight Mile & Industrial DW #2	A	0.0	0.000	B	12.2	0.004	+12.247 D/V

Cumul + Project PM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 9 Eight Mile Road & Ham Lane	??? / ???	No / Yes
# 51 Eight Mile & Commercial DW #1	??? / ???	No / No
# 52 Eight Mile & Commercial DW #2	??? / ???	No / No
# 54 West Lane & Commercial DW #3	??? / ???	No / No
# 55 West Lane & Commercial DW #4	??? / ???	No / No
# 56 West Lane & Road A	??? / ???	No / No
# 57 Eight Mile & Hi Dens Res DW #1	??? / ???	No / No
# 58 Eight Mile & Hi Dens Res DW #2	??? / ???	No / No
# 60 Eight Mile & Industrial DW #1	??? / ???	No / No
# 61 Eight Mile & Industrial DW #2	??? / ???	No / No

Cumul + Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #9 Eight Mile Road & Ham Lane

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	0	0	1	0	0	4	0	0	0	0	3	1	0
Initial Vol:	0		0		0	0		0		209	0		2381		0	0		2297		198
ApproachDel:	xxxxxx					30.0					xxxxxx					xxxxxx				

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.7]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=209]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=5085]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul + Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #9 Eight Mile Road & Ham Lane

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	0	0	1	0	0	4	0	0	0	0	3	1	0
Initial Vol:	0		0		0	0		0		209	0		2381		0	0		2297		198

Major Street Volume: 4876
Minor Approach Volume: 209
Minor Approach Volume Threshold: -261 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #51 Eight Mile & Commercial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	0	1	0	0	4	0	0
Initial Vol:	0		0		35	0		0		0	0		2328		55	0		2366		0
ApproachDel:	14.4					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=35]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=4784]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #51 Eight Mile & Commercial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	0	1	0	0	4	0	0
Initial Vol:	0		0		35	0		0		0	0		2328		55	0		2366		0

Major Street Volume: 4749
Minor Approach Volume: 35
Minor Approach Volume Threshold: -252 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #52 Eight Mile & Commercial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Initial Vol:	0		0		70	0		0		0	0		2307		55	0		2366		0
ApproachDel:	15.8					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=70]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=4798]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul + Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #52 Eight Mile & Commercial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Initial Vol:	0		0		70	0		0		0	0		2307		55	0		2366		0

Major Street Volume: 4728
Minor Approach Volume: 70
Minor Approach Volume Threshold: -250 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #54 West Lane & Commercial DW #3

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	3	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1839			63	0	1594			0	0		0		0	0		0		59
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					13.4				

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=59]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3555]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #54 West Lane & Commercial DW #3

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	3	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1839			63	0	1594			0	0		0		0	0		0		59

Major Street Volume: 3496
Minor Approach Volume: 59
Minor Approach Volume Threshold: -146 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul + Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #55 West Lane & Commercial DW #4

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1892			33	0	1594			0	0		0	0	0	0		0	0	10
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					12.5				

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=10]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3529]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul + Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #55 West Lane & Commercial DW #4

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1892			33	0	1594			0	0		0	0	0	0		0	0	10

Major Street Volume: 3519
Minor Approach Volume: 10
Minor Approach Volume Threshold: -149 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #56 West Lane & Road A

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1888			87	0	1594			0	0		0		0	0		0	0	36
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					13.3				

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=36]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3605]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #56 West Lane & Road A

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1888			87	0	1594			0	0		0		0	0		0	0	36

Major Street Volume: 3569
Minor Approach Volume: 36
Minor Approach Volume Threshold: -153 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #57 Eight Mile & Hi Dens Res DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Initial Vol:	0		0		82	0		0		0	0		2417		21	0		2432		0
ApproachDel:	16.5					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.4]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=82]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=4952]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #57 Eight Mile & Hi Dens Res DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Initial Vol:	0		0		82	0		0		0	0		2417		21	0		2432		0

Major Street Volume: 4870
Minor Approach Volume: 82
Minor Approach Volume Threshold: -261 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #58 Eight Mile & Hi Dens Res DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Initial Vol:	0		0		82	0		0		0	0		2478		21	0		2432		0
ApproachDel:	16.9					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.4]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=82]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=5013]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #58 Eight Mile & Hi Dens Res DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Initial Vol:	0		0		82	0		0		0	0		2478		21	0		2432		0

Major Street Volume: 4931
Minor Approach Volume: 82
Minor Approach Volume Threshold: -265 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #60 Eight Mile & Industrial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	1	0	0	0	4	0	0
Initial Vol:	0		0		2	0		0		0	0		2400		1	0		2309		0
ApproachDel:	12.2					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=2]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=4712]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #60 Eight Mile & Industrial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	1	0	0	0	4	0	0
Initial Vol:	0		0		2	0		0		0	0		2400		1	0		2309		0

Major Street Volume: 4710
Minor Approach Volume: 2
Minor Approach Volume Threshold: -249 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Cumul + Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #61 Eight Mile & Industrial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	1	0	0	0	4	0	0
Initial Vol:	0		0		2	0		0		0	0		2402		1	0		2309		0
ApproachDel:	12.2					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=2]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=4714]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul + Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #61 Eight Mile & Industrial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	1	0	0	0	4	0	0
Initial Vol:	0		0		2	0		0		0	0		2402		1	0		2309		0

Major Street Volume: 4712
Minor Approach Volume: 2
Minor Approach Volume Threshold: -249 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.212
Loss Time (sec):	12	Average Delay (sec/veh):	95.5
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	PM Peak Hour											
Base Vol:	202	743	200	513	542	218	394	1834	112	273	1896	404
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	202	743	200	513	542	218	394	1834	112	273	1896	404
Added Vol:	0	0	8	17	0	0	0	42	0	7	37	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	202	743	208	530	542	218	394	1876	112	280	1933	419
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	220	808	226	576	589	237	428	2039	122	304	2101	455
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	220	808	226	576	589	237	428	2039	122	304	2101	455
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	220	808	226	576	589	237	428	2039	122	304	2101	455
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	3.29	0.71
Final Sat.:	1769	3538	1583	1769	3538	1583	3432	6778	1583	3432	5420	1175
Capacity Analysis Module:												
Vol/Sat:	0.12	0.23	0.14	0.33	0.17	0.15	0.12	0.30	0.08	0.09	0.39	0.39
Crit Moves:		****		****			****				****	
Green/Cycle:	0.20	0.19	0.19	0.27	0.26	0.26	0.10	0.33	0.33	0.10	0.32	0.32
Volume/Cap:	0.64	1.21	0.76	1.21	0.64	0.57	1.21	0.92	0.24	0.92	1.21	1.21
Delay/Veh:	40.9	149	49.1	150.1	34.2	34.0	163.6	39.4	24.8	74.9	134	134.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.9	149	49.1	150.1	34.2	34.0	163.6	39.4	24.8	74.9	134	134.0
LOS by Move:	D	F	D	F	C	C	F	D	C	E	F	F
HCM2k95thQ:	333	1034	389	1312	412	317	507	673	109	253	1428	1428

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L - T - R				L - T - R				L - T - R				L - T - R			
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	2 0	1		1 0	2 0	1		2 0	4 0	1		2 0	3 1	0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	2	1		1	2	1		2	4	1		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12				
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.90	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.20	0.19	0.19	0.27	0.26	0.26	0.10	0.33	0.33	0.10	0.32	0.32
ArrivalType:		4			4			4			4	
ProgFactor:	0.96	1.00	0.98	1.00	0.94	0.94	1.00	0.98	0.86	1.00	1.00	1.00
Q1:	5.4	11.8	5.8	16.0	7.2	5.4	6.1	14.7	2.1	4.3	19.5	19.5
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.99	0.99	0.82	0.82	0.82
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.11	0.11	0.46	0.46	0.46
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.03	0.06	0.06	0.12	0.24	0.24
Q2:	1.6	13.3	2.5	16.9	1.6	1.3	5.0	0.7	0.0	0.9	16.6	16.6
HCM2KQueue:	7.0	25.1	8.3	32.9	8.8	6.6	11.1	15.3	2.1	5.2	36.1	36.1
70th%Factor:	1.18	1.15	1.18	1.14	1.18	1.18	1.18	1.17	1.19	1.19	1.14	1.14
HCM2k70thQ:	8.3	28.9	9.8	37.6	10.4	7.8	13.1	17.9	2.6	6.2	41.2	41.2
85th%Factor:	1.54	1.43	1.53	1.40	1.52	1.54	1.51	1.48	1.58	1.55	1.39	1.39
HCM2k85thQ:	10.8	35.9	12.6	46.0	13.5	10.2	16.8	22.7	3.4	8.1	50.2	50.2
90th%Factor:	1.68	1.51	1.66	1.48	1.66	1.69	1.63	1.59	1.76	1.71	1.47	1.47
HCM2k90thQ:	11.8	38.0	13.8	48.5	14.6	11.2	18.1	24.3	3.8	8.9	53.0	53.0
95th%Factor:	1.91	1.65	1.88	1.60	1.87	1.92	1.82	1.76	2.03	1.95	1.58	1.58
HCM2k95thQ:	13.3	41.4	15.5	52.5	16.5	12.7	20.3	26.9	4.4	10.1	57.1	57.1
98th%Factor:	2.28	1.85	2.23	1.78	2.21	2.30	2.13	2.01	2.55	2.37	1.76	1.76
HCM2k98thQ:	16.0	46.3	18.4	58.5	19.5	15.2	23.6	30.8	5.5	12.3	63.7	63.7

Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.844
Loss Time (sec):	12	Average Delay (sec/veh):	39.2
Optimal Cycle:	89	Level Of Service:	D

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	PM Peak Hour											
Base Vol:	337	604	254	236	456	132	235	1708	192	335	1677	174
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	337	604	254	236	456	132	235	1708	192	335	1677	174
Added Vol:	0	0	17	8	0	0	0	67	0	15	59	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	337	604	271	244	456	132	235	1775	192	350	1736	181
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	366	657	295	265	496	143	255	1929	209	380	1887	197
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	366	657	295	265	496	143	255	1929	209	380	1887	197
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	366	657	295	265	496	143	255	1929	209	380	1887	197
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.88	0.88
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	3.62	0.38
Final Sat.:	1769	3538	1583	1769	3538	1583	3432	6778	1583	3432	6052	631
Capacity Analysis Module:												
Vol/Sat:	0.21	0.19	0.19	0.15	0.14	0.09	0.07	0.28	0.13	0.11	0.31	0.31
Crit Moves:	****				****			****		****		
Green/Cycle:	0.25	0.23	0.23	0.18	0.17	0.17	0.09	0.34	0.34	0.13	0.38	0.38
Volume/Cap:	0.84	0.81	0.82	0.82	0.84	0.55	0.82	0.84	0.39	0.84	0.82	0.82
Delay/Veh:	49.9	43.0	50.2	54.0	51.2	40.6	60.9	33.8	25.8	56.0	30.4	30.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.9	43.0	50.2	54.0	51.2	40.6	60.9	33.8	25.8	56.0	30.4	30.4
LOS by Move:	D	D	D	D	D	D	E	C	C	E	C	C
HCM2k95thQ:	590	549	493	465	477	228	191	615	196	396	746	746

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	2	0	1	1	0	2	0	1	2	0	4	0	1	2
Lane Group:	L		T		R	L		T		R	L		T		R	L
#LnsInGrps:	1		2		1	1		2		1	2		4		1	2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12		12	12		12		12	12		12		12	12
CrsswalkWid:			8					8					8			
% Hev Veh:			2					2					2			
Grade:			0%					0%					0%			
Parking/Hr:			No					No					No			
Bus Stp/Hr:			0					0					0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0					0					0			
ExclusiveRT:			Include					Include					Include			
% RT Prtct:			0					0					0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.90	0.89	0.83		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.25	0.23	0.23		0.18	0.17	0.17		0.09	0.34	0.34		0.13	0.38	0.38	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.98	0.98		0.98	0.99	0.97		0.99	0.96	0.87		0.99	0.94	0.94	
Q1:		9.5	8.9		7.6	7.0	6.9		3.5	3.6	13.1		3.9	5.3	13.5	13.5
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.92	0.92		0.92	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.27	0.27	0.27		0.27	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.07	0.15	0.14		1.00	1.00	1.00	
Q2:		3.7	3.3		3.2	3.1	3.4		1.1	0.3	0.8		0.1	3.2	3.8	3.8
HCM2KQueue:		13.2	12.2		10.8	10.1	10.4		4.6	3.9	13.8		4.0	8.5	17.2	17.2
70th%Factor:	1.17	1.17	1.18		1.18	1.18	1.19		1.19	1.17	1.19		1.18	1.16	1.16	
HCM2k70thQ:		15.5	14.3		12.7	11.9	12.2		5.5	4.6	16.2		4.7	10.0	20.1	20.1
85th%Factor:	1.49	1.50	1.51		1.51	1.51	1.56		1.56	1.49	1.56		1.53	1.47	1.47	
HCM2k85thQ:		19.7	18.3		16.3	15.3	15.7		7.2	6.0	20.6		6.2	12.9	25.3	25.3
90th%Factor:	1.61	1.62	1.63		1.64	1.64	1.72		1.73	1.60	1.73		1.66	1.57	1.57	
HCM2k90thQ:		21.2	19.7		17.6	16.6	17.0		8.0	6.7	22.1		6.8	14.0	27.1	27.1
95th%Factor:	1.79	1.81	1.83		1.84	1.84	1.96		1.98	1.78	1.98		1.88	1.73	1.73	
HCM2k95thQ:		23.6	22.0		19.7	18.6	19.1		9.1	7.7	24.6		7.8	15.8	29.8	29.8
98th%Factor:	2.06	2.09	2.14		2.16	2.15	2.40		2.44	2.05	2.44		2.22	1.97	1.97	
HCM2k98thQ:		27.2	25.5		23.0	21.8	22.3		11.2	9.4	28.3		9.6	18.8	33.9	33.9

Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.139
Loss Time (sec):	12	Average Delay (sec/veh):	90.8
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	4	0	1	2	0	3	1	0
Volume Module:	PM Peak Hour											
Base Vol:	173	781	407	612	506	110	212	1906	91	512	1919	502
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	173	781	407	612	506	110	212	1906	91	512	1919	502
Added Vol:	0	0	42	17	0	0	0	92	0	37	81	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	173	781	449	629	506	110	212	1998	91	549	2000	517
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	188	849	488	684	550	120	230	2172	99	597	2174	562
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	188	849	488	684	550	120	230	2172	99	597	2174	562
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	188	849	488	684	550	120	230	2172	99	597	2174	562
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.86	0.86
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	4.00	1.00	2.00	3.18	0.82
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	6778	1583	3432	5219	1349
Capacity Analysis Module:												
Vol/Sat:	0.05	0.24	0.31	0.20	0.16	0.08	0.07	0.32	0.06	0.17	0.42	0.42
Crit Moves:			****	****				****		****		
Green/Cycle:	0.12	0.27	0.27	0.17	0.33	0.33	0.06	0.28	0.28	0.15	0.37	0.37
Volume/Cap:	0.47	0.89	1.14	1.14	0.47	0.23	1.11	1.14	0.22	1.14	1.11	1.11
Delay/Veh:	42.2	45.0	123.5	122.5	26.9	24.5	143.5	105	27.8	125.8	89.0	89.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.2	45.0	123.5	122.5	26.9	24.5	143.5	105	27.8	125.8	89.0	89.0
LOS by Move:	D	D	F	F	C	C	F	F	C	F	F	F
HCM2k95thQ:	165	712	1064	835	314	120	376	1241	110	756	1441	1441

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L - T - R						L - T - R						L - T - R						L - T - R					
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	4	0	1	2	0	3	1	0				
Lane Group:	L		T		R	L		T		R	L		T		R	L		RT		RT				
#LnsInGrps:	2		2		1	2		2		1	2		4		1	2		4		4				
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12				
CrsswalkWid:			8					8					8					8						
% Hev Veh:			2					2					2					2						
Grade:			0%					0%					0%					0%						
Parking/Hr:			No					No					No					No						
Bus Stp/Hr:			0					0					0					0						
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0					0					0					0						
ExclusiveRT:			Include					Include					Include					Include						
% RT Prtct:			0					0					0					0						
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx						
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
Hev Veh Adj:	0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98						
Grade Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
Parking Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00						
Bus Stp Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00						
Area Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
RT Adj:	xxxx	xxxx	0.85			xxxx	xxxx	0.85			xxxx	xxxx	0.85			xxxx	0.97	0.97						
LT Adj:	0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx						
PedBike Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
HCM Sat Adj:	0.93	0.98	0.83			0.93	0.98	0.83			0.93	0.98	0.83			0.93	0.95	0.95						
Usr Sat Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						
MLF Sat Adj:	0.97	0.95	1.00			0.97	0.95	1.00			0.97	0.91	1.00			0.97	0.91	0.91						
Fnl Sat Adj:	0.90	0.93	0.83			0.90	0.93	0.83			0.90	0.89	0.83			0.90	0.86	0.86						
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00						

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.12	0.27	0.27	0.17	0.33	0.33	0.06	0.28	0.28	0.15	0.37	0.37
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.98	1.00	1.00	0.89	0.86	1.00	1.00	0.89	1.00	1.00	1.00
Q1:	2.5	11.7	13.6	9.8	5.7	2.1	3.3	16.6	1.9	8.5	20.9	20.9
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.8	4.7	12.4	9.8	0.9	0.3	4.7	14.3	0.3	9.0	15.6	15.6
HCM2KQueue:	3.3	16.4	25.9	19.6	6.6	2.4	8.0	30.9	2.2	17.5	36.5	36.5
70th%Factor:	1.19	1.17	1.15	1.16	1.18	1.19	1.18	1.15	1.19	1.16	1.14	1.14
HCM2k70thQ:	3.9	19.1	29.9	22.8	7.8	2.8	9.4	35.4	2.6	20.4	41.6	41.6
85th%Factor:	1.57	1.47	1.43	1.46	1.54	1.58	1.53	1.41	1.58	1.47	1.39	1.39
HCM2k85thQ:	5.2	24.1	37.0	28.6	10.1	3.7	12.2	43.4	3.4	25.7	50.7	50.7
90th%Factor:	1.74	1.58	1.51	1.55	1.69	1.76	1.67	1.49	1.76	1.57	1.46	1.46
HCM2k90thQ:	5.7	25.8	39.1	30.4	11.1	4.2	13.3	45.9	3.8	27.4	53.5	53.5
95th%Factor:	2.00	1.74	1.64	1.70	1.92	2.03	1.88	1.61	2.03	1.73	1.58	1.58
HCM2k95thQ:	6.6	28.5	42.6	33.4	12.6	4.8	15.1	49.6	4.4	30.2	57.6	57.6
98th%Factor:	2.48	1.98	1.84	1.92	2.30	2.53	2.24	1.79	2.55	1.96	1.76	1.76
HCM2k98thQ:	8.2	32.5	47.6	37.7	15.1	6.0	17.9	55.3	5.5	34.3	64.3	64.3

Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec): 100 Critical Vol./Cap.(X): 1.411
Loss Time (sec): 12 Average Delay (sec/veh): 150.8
Optimal Cycle: 180 Level Of Service: F

Street Name:	West Lane						Armstrong Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:	PM Peak Hour											
Base Vol:	46	763	457	663	453	28	57	586	23	554	589	571
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	46	763	457	663	453	28	57	586	23	554	589	571
Added Vol:	0	51	0	0	58	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	46	814	457	663	511	28	57	586	23	554	589	571
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	50	885	497	721	555	30	62	637	25	602	640	621
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	885	497	721	555	30	62	637	25	602	640	621
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	885	497	721	555	30	62	637	25	602	640	621
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.25	0.31	0.41	0.16	0.02	0.04	0.18	0.02	0.34	0.18	0.39
Crit Moves:			****	****				****		****		
Green/Cycle:	0.08	0.22	0.22	0.29	0.43	0.43	0.03	0.13	0.13	0.24	0.34	0.34
Volume/Cap:	0.36	1.12	1.41	1.41	0.36	0.04	1.16	1.41	0.12	1.41	0.53	1.16
Delay/Veh:	45.4	111	240.0	231.9	19.2	16.4	221.2	241	38.9	236.4	27.2	123.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.4	111	240.0	231.9	19.2	16.4	221.2	241	38.9	236.4	27.2	123.6
LOS by Move:	D	F	F	F	B	B	F	F	D	F	C	F
HCM2k95thQ:	94	1011	1382	1898	240	22	248	1006	38	1624	372	1310

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	2	0	1	1	0	2	0	1	1	0	2	0	1	1
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	2	1		1	2	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.08	0.22	0.22		0.29	0.43	0.43		0.03	0.13	0.13		0.24	0.34	0.34	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	1.00	1.00		1.00	0.79	0.75		1.00	1.00	0.96		1.00	0.90	1.00	
Q1:	1.3	12.9	13.8		20.0	4.3	0.4		1.7	9.3	0.6		16.7	6.8	17.2	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.5	11.5	21.0		29.3	0.6	0.0		3.4	15.0	0.1		24.9	1.1	15.6	
HCM2KQueue:	1.8	24.4	34.8		49.3	4.9	0.4		5.1	24.3	0.7		41.7	7.9	32.8	
70th%Factor:	1.20	1.15	1.14		1.13	1.19	1.20		1.19	1.15	1.20		1.14	1.18	1.14	
HCM2k70thQ:	2.2	28.2	39.8		55.7	5.8	0.5		6.0	28.1	0.9		47.3	9.3	37.5	
85th%Factor:	1.58	1.43	1.39		1.36	1.55	1.60		1.55	1.43	1.59		1.37	1.53	1.40	
HCM2k85thQ:	2.9	35.0	48.6		67.0	7.6	0.7		7.9	34.9	1.2		57.3	12.1	46.0	
90th%Factor:	1.76	1.52	1.47		1.43	1.71	1.79		1.71	1.52	1.79		1.45	1.67	1.48	
HCM2k90thQ:	3.2	37.1	51.2		70.7	8.4	0.7		8.7	36.9	1.3		60.4	13.2	48.5	
95th%Factor:	2.04	1.65	1.59		1.54	1.96	2.09		1.95	1.66	2.08		1.56	1.89	1.60	
HCM2k95thQ:	3.7	40.4	55.3		75.9	9.6	0.9		9.9	40.2	1.5		65.0	14.9	52.4	
98th%Factor:	2.57	1.85	1.77		1.72	2.39	2.67		2.38	1.85	2.65		1.74	2.25	1.78	
HCM2k98thQ:	4.7	45.3	61.6		85.0	11.7	1.1		12.1	45.1	1.9		72.5	17.7	58.4	

Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.537
Loss Time (sec):	9	Average Delay (sec/veh):	13.2
Optimal Cycle:	36	Level Of Service:	B

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	1	0	1 1	0	1	0 1 0
Volume Module:	PM Peak Hour											
Base Vol:	53	31	35	47	22	30	54	1064	29	46	1064	36
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	31	35	47	22	30	54	1064	29	46	1064	36
Added Vol:	0	0	19	0	0	0	0	33	22	5	53	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	53	31	54	47	22	30	54	1097	51	51	1117	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	58	34	59	51	24	33	59	1192	55	55	1214	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	58	34	59	51	24	33	59	1192	55	55	1214	39
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	58	34	59	51	24	33	59	1192	55	55	1214	39
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.80	0.80	0.80	0.75	0.75	0.75	0.93	0.92	0.92	0.93	0.93	0.93
Lanes:	0.38	0.22	0.40	0.48	0.22	0.30	1.00	1.91	0.09	1.00	1.94	0.06
Final Sat.:	582	340	593	674	315	430	1769	3357	156	1769	3410	110
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.08	0.08	0.08	0.03	0.36	0.36	0.03	0.36	0.36
Crit Moves:		****					****				****	
Green/Cycle:	0.18	0.18	0.18	0.18	0.18	0.18	0.06	0.67	0.67	0.06	0.66	0.66
Volume/Cap:	0.54	0.54	0.54	0.41	0.41	0.41	0.54	0.53	0.53	0.53	0.54	0.54
Delay/Veh:	39.0	39.0	39.0	37.0	37.0	37.0	50.7	8.9	8.9	51.0	9.0	9.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.0	39.0	39.0	37.0	37.0	37.0	50.7	8.9	8.9	51.0	9.0	9.0
LOS by Move:	D	D	D	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	231	231	231	159	159	159	130	244	244	125	252	252

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	0	0	1!	0	0		0	0	1!	0	0		1	0	1	1	0		1	0	1	1	0	
Lane Group:	LTR		LTR		LTR		LTR		LTR		LTR		L		RT		RT		L		RT		RT	
#LnsInGrps:	1		1		1		1		1		1		1		2		2		1		2		2	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:			8						8						8						8			
% Hev Veh:			2						2						2						2			
Grade:			0%						0%						0%						0%			
Parking/Hr:			No						No						No						No			
Bus Stp/Hr:			0						0						0						0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0						0						0						0			
ExclusiveRT:			Include						Include						Include						Include			
% RT Prtct:			0						0						0						0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	5		5		5		5		5		5		1	xxxx		xxxx			1	xxxx		xxxx		
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98												
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
Parking Adj:	1.00	1.00	1.00	1.00	1.00	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00												
Bus Stp Adj:	1.00	1.00	1.00	1.00	1.00	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00												
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
RT Adj:	0.95	0.95	0.95	0.96	0.96	0.96	xxxx	0.99	0.99	xxxx	1.00	1.00												
LT Adj:	0.86	0.86	0.86	0.80	0.80	0.80	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx												
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
HCM Sat Adj:	0.80	0.80	0.80	0.75	0.75	0.75	0.93	0.97	0.97	0.93	0.98	0.98												
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95												
Fnl Sat Adj:	0.80	0.80	0.80	0.75	0.75	0.75	0.93	0.92	0.92	0.93	0.93	0.93												
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	100	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	17.46	17.46	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	18.46	18.46	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	18.46	18.46	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	1	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	1	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	58	51	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	0.38	0.48	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	0.48	0.38	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	1.60	1.42	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	108	150	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	3.00	4.17	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	1.33	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	3.00	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	2.50	2.98	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	0.75	0.75	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	5.46	7.87	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	13.00	10.59	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	1.48	2.45	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	0.53	0.62	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	1.56	1.63	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	1.29	1.81	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	0.15	0.16	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	0.86	0.80	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	0.86	0.80	xxxxxx	xxxxxx

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.18	0.18	0.18	0.18	0.18	0.18	0.06	0.67	0.67	0.06	0.66	0.66
ArrivalType:	4			4			4			4		
ProgFactor:	0.96	0.96	0.96	0.95	0.95	0.95	0.99	0.41	0.41	0.99	0.42	0.42
Q1:	3.6	3.6	3.6	2.5	2.5	2.5	1.6	3.9	3.9	1.5	4.0	4.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	1.1	1.1	1.1	0.7	0.7	0.7	1.0	1.1	1.1	1.0	1.1	1.1
HCM2KQueue:	4.7	4.7	4.7	3.2	3.2	3.2	2.6	5.0	5.0	2.5	5.2	5.2
70th%Factor:	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19
HCM2k70thQ:	5.6	5.6	5.6	3.8	3.8	3.8	3.1	5.9	5.9	2.9	6.1	6.1
85th%Factor:	1.56	1.56	1.56	1.57	1.57	1.57	1.58	1.55	1.55	1.58	1.55	1.55
HCM2k85thQ:	7.3	7.3	7.3	5.0	5.0	5.0	4.0	7.7	7.7	3.9	8.0	8.0
90th%Factor:	1.72	1.72	1.72	1.74	1.74	1.74	1.75	1.71	1.71	1.75	1.71	1.71
HCM2k90thQ:	8.1	8.1	8.1	5.5	5.5	5.5	4.5	8.5	8.5	4.3	8.8	8.8
95th%Factor:	1.96	1.96	1.96	2.00	2.00	2.00	2.02	1.95	1.95	2.02	1.95	1.95
HCM2k95thQ:	9.2	9.2	9.2	6.4	6.4	6.4	5.2	9.7	9.7	5.0	10.1	10.1
98th%Factor:	2.40	2.40	2.40	2.48	2.48	2.48	2.52	2.38	2.38	2.53	2.37	2.37
HCM2k98thQ:	11.3	11.3	11.3	7.9	7.9	7.9	6.5	11.9	11.9	6.2	12.3	12.3

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                          Cumul + Project PM Pk Hr
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                     Level Of Service Computation Report
           2000 HCM Operations Method (Future Volume Alternative)
*********************************************************************************
Intersection #8 Eight Mile Rd & West Ln
*********************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):         1.137
Loss Time (sec):     12              Average Delay (sec/veh):        99.2
Optimal Cycle:      180              Level Of Service:                  F
*********************************************************************************
Street Name:               West Lane                      Eight Mile Road
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        2  0  2  0  1    2  0  2  0  1    2  0  3  1  0    2  0  3  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:PM Peak Hour
Base Vol:     772  852   162   166  748   334   565 1856   485   236 1819   116
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  772  852   162   166  748   334   565 1856   485   236 1819   116
Added Vol:     42   32    37    45    8     0     0  116    34    83   90    23
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  814  884   199   211  756   334   565 1972   519   319 1909   139
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:   885  961   216   229  822   363   614 2143   564   347 2075   151
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  885  961   216   229  822   363   614 2143   564   347 2075   151
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  885  961   216   229  822   363   614 2143   564   347 2075   151
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.90 0.93  0.83  0.90 0.93  0.83  0.90 0.86  0.86  0.90 0.88  0.88
Lanes:       2.00 2.00  1.00  2.00 2.00  1.00  2.00 3.17  0.83  2.00 3.73  0.27
Final Sat.:  3432 3538  1583  3432 3538  1583  3432 5199  1368  3432 6254   455
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.26 0.27  0.14  0.07 0.23  0.23  0.18 0.41  0.41  0.10 0.33  0.33
Crit Moves:  ****                   ****       ****                   ****
Green/Cycle: 0.23 0.35  0.35  0.09 0.20  0.20  0.16 0.36  0.36  0.09 0.29  0.29
Volume/Cap:  1.14 0.79  0.40  0.79 1.14  1.12  1.14 1.14  1.14  1.14 1.14  1.14
Delay/Veh:  115.8 32.8  25.3  57.9  118 127.3 124.6  102 101.9 141.7  104 104.1
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh: 115.8 32.8  25.3  57.9  118 127.3 124.6  102 101.9 141.7  104 104.1
LOS by Move:    F    C     C     E    F     F     F    F     F     F    F     F
HCM2k95thQ:   910  596   208   268  970   840   771 1485  1485   418 1177  1177
*********************************************************************************
Note: Queue reported is the distance per lane in feet.
*********************************************************************************
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---------------------------------------------------------------------------------
                          Cumul + Project PM Pk Hr
---------------------------------------------------------------------------------
                  Level Of Service Detailed Computation Report
                         2000 HCM Operations Method
                          Future Volume Alternative
*********************************************************************************
Intersection #8 Eight Mile Rd & West Ln
*********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        2  0  2  0  1    2  0  2  0  1    2  0  3  1  0    2  0  3  1  0
Lane Group:    L    T     R     L    T     R     L   RT    RT     L   RT    RT
#LnsInGrps:     2    2     1     2    2     1     2    4     4     2    4     4
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:         8                8                8                8
% Hev Veh:           2                2                2                2
Grade:              0%               0%               0%               0%
Parking/Hr:         No               No               No               No
Bus Stp/Hr:          0                0                0                0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:         0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:          0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Hev Veh Adj: 0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
Grade Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Parking Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx 1.00  1.00  xxxx 1.00  1.00
Bus Stp Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx 1.00  1.00  xxxx 1.00  1.00
Area Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
RT Adj:      xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx 0.97  0.97  xxxx 0.99  0.99
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.93 0.98  0.83  0.93 0.98  0.83  0.93 0.95  0.95  0.93 0.97  0.97
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 0.97 0.95  1.00  0.97 0.95  1.00  0.97 0.91  0.91  0.97 0.91  0.91
Fnl Sat Adj: 0.90 0.93  0.83  0.90 0.93  0.83  0.90 0.86  0.86  0.90 0.88  0.88
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
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Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.23	0.35	0.35	0.09	0.20	0.20	0.16	0.36	0.36	0.09	0.29	0.29
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.94	0.87	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	12.7	11.9	4.0	3.2	12.0	10.1	8.8	20.7	20.7	5.0	17.0	17.0
UpstreamVC:	0.58	0.58	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.45	0.45
UpstreamAdj:	0.78	0.78	0.78	0.00	0.00	0.00	0.00	0.00	0.00	0.89	0.89	0.89
EarlyArrAdj:	0.33	0.44	0.40	1.00	1.00	1.00	1.00	1.00	1.00	0.22	0.45	0.45
Q2:	9.0	1.5	0.3	2.3	11.3	9.7	9.1	17.1	17.1	4.0	12.1	12.1
HCM2KQueue:	21.7	13.4	4.2	5.5	23.3	19.8	17.9	37.7	37.7	9.0	29.1	29.1
70th%Factor:	1.16	1.17	1.19	1.19	1.16	1.16	1.16	1.14	1.14	1.18	1.15	1.15
HCM2k70thQ:	25.1	15.7	5.0	6.6	27.0	22.9	20.8	43.0	43.0	10.6	33.4	33.4
85th%Factor:	1.45	1.49	1.56	1.55	1.44	1.46	1.47	1.39	1.39	1.52	1.41	1.41
HCM2k85thQ:	31.3	19.9	6.6	8.6	33.5	28.7	26.2	52.3	52.3	13.6	41.1	41.1
90th%Factor:	1.54	1.61	1.72	1.70	1.52	1.55	1.56	1.46	1.46	1.66	1.49	1.49
HCM2k90thQ:	33.3	21.4	7.3	9.4	35.6	30.6	28.0	55.1	55.1	14.8	43.4	43.4
95th%Factor:	1.68	1.79	1.97	1.94	1.66	1.70	1.72	1.57	1.57	1.86	1.62	1.62
HCM2k95thQ:	36.4	23.9	8.3	10.7	38.8	33.6	30.8	59.4	59.4	16.7	47.1	47.1
98th%Factor:	1.89	2.06	2.42	2.35	1.87	1.92	1.95	1.75	1.75	2.20	1.81	1.81
HCM2k98thQ:	40.9	27.5	10.2	13.0	43.5	37.9	35.0	66.2	66.2	19.7	52.5	52.5

Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Average Delay (sec/veh): 1.2 Worst Case Level Of Service: D[30.0]

Street Name:	Ham Lane								Eight Mile Road					
Approach:	North Bound				South Bound				East Bound				West Bound	
Movement:	L -	T -	R		L -	T -	R		L -	T -	R		L -	T -	R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled		
Rights:	Include				Include				Include				Include		
Lanes:	0	0	0	0	0	0	0	0	0	1	0	0	4	0	0	0	0	3	1	0
Volume Module:	PM Peak Hour																			
Base Vol:	0	0	0		0	0	0		162		0	2025		0	0		2066		165	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00		1.00		1.00	
Initial Bse:	0	0	0		0	0	0		162		0	2025		0	0		2066		165	
Added Vol:	0	0	0		0	0	0		47		0	356		0	0		231		33	
PasserByVol:	0	0	0		0	0	0		0		0	0		0	0		0		0	
Initial Fut:	0	0	0		0	0	0		209		0	2381		0	0		2297		198	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00		1.00		1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92		0.92	0.92		0.92	0.92		0.92		0.92	
PHF Volume:	0	0	0		0	0	0		227		0	2588		0	0		2497		215	
Reduct Vol:	0	0	0		0	0	0		0		0	0		0	0		0		0	
FinalVolume:	0	0	0		0	0	0		227		0	2588		0	0		2497		215	
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxx		6.9		xxxxx	xxxx		xxxxx	xxxxx		xxxx		xxxxx	
FollowUpTim:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxx		3.3		xxxxx	xxxx		xxxxx	xxxxx		xxxx		xxxxx	
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx		xxxx	xxxx		732		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx				
Potent Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx		364		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx				
Move Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx		364		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx				
Volume/Cap:	xxxx	xxxx	xxxx		xxxx	xxxx		0.62		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx				
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx		xxxx	xxxx		100.9		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx				
Control Del:	xxxxx	xxxx	xxxxx		xxxxx	xxxx		30.0		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx				
LOS by Move:	*	*	*		*	*		D		*	*	*		*	*	*				
Movement:	LT -	LTR -	RT		LT -	LTR -	RT			LT -	LTR -	RT		LT -	LTR -	RT				
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx				
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*		*	*	*			*	*	*		*	*	*				
ApproachDel:	xxxxxx				30.0					xxxxxx				xxxxxx						
ApproachLOS:	*				D					*				*						

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St G

Cycle (sec):	100	Critical Vol./Cap.(X):	0.901
Loss Time (sec):	12	Average Delay (sec/veh):	28.8
Optimal Cycle:	110	Level Of Service:	C

Street Name:	Leach Road/Street G						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	1	0	0	1	0	1	0	3	1	0	1	0	3	1	0
Volume Module:PM Peak Hour																				
Base Vol:	0	0	0	402	0	17	46	2023	0	0	2008	455
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	402	0	17	46	2023	0	0	2008	455
Added Vol:	44	0	48	0	0	0	75	237	66	84	199	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	44	0	48	402	0	17	121	2260	66	84	2207	455
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	48	0	52	437	0	18	132	2457	72	91	2399	495
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	48	0	52	437	0	18	132	2457	72	91	2399	495
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	48	0	52	437	0	18	132	2457	72	91	2399	495
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	0.93	1.00	0.83	0.93	0.89	0.89	0.93	0.87	0.87
Lanes:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	3.89	0.11	1.00	3.32	0.68
Final Sat.:	1769	1900	1583	1769	0	1583	1769	6559	192	1769	5473	1128
Capacity Analysis Module:												
Vol/Sat:	0.03	0.00	0.03	0.25	0.00	0.01	0.07	0.37	0.37	0.05	0.44	0.44
Crit Moves:			****	****			****				****	
Green/Cycle:	0.22	0.00	0.22	0.27	0.00	0.09	0.08	0.50	0.50	0.07	0.49	0.49
Volume/Cap:	0.12	0.00	0.15	0.90	0.00	0.12	0.90	0.75	0.75	0.75	0.90	0.90
Delay/Veh:	31.6	0.0	31.9	54.6	0.0	41.9	91.7	20.9	20.9	68.0	27.4	27.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.6	0.0	31.9	54.6	0.0	41.9	91.7	20.9	20.9	68.0	27.4	27.4
LOS by Move:	C	A	C	D	A	D	F	C	C	E	C	C
HCM2k95thQ:	58	0	65	716	0	31	327	682	682	219	1015	1015

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St G

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 1	0 1		1	0 0	1 0		1	0 3	1 0		1	0 3	1 0	
Lane Group:	L	T	R		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	4	4		1	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	xxxx	0.98		0.98	xxxx	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	1.00	1.00		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	1.00	0.83		0.93	1.00	0.83		0.93	0.98	0.98		0.93	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.91	0.91		1.00	0.91	0.91	
Fnl Sat Adj:	0.93	1.00	0.83		0.93	1.00	0.83		0.93	0.89	0.89		0.93	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	1.00		1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St G

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.22	0.00	0.22		0.27	0.00	0.09		0.08	0.50	0.50		0.07	0.49	0.49	
ArrivalType:		4				4				4				4		
ProgFactor:	0.92	1.00	0.92		0.98	1.00	0.97		1.00	0.83	0.83		0.99	0.92	0.92	
Q1:	1.0	0.0	1.1		11.5	0.0	0.5		3.6	12.8	12.8		2.5	18.7	18.7	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	0.00	1.00		1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.1	0.0	0.2		5.0	0.0	0.1		3.2	2.7	2.7		2.0	5.9	5.9	
HCM2KQueue:	1.1	0.0	1.3		16.5	0.0	0.6		6.9	15.6	15.6		4.4	24.6	24.6	
70th%Factor:	1.20	1.20	1.20		1.17	1.20	1.20		1.18	1.17	1.17		1.19	1.15	1.15	
HCM2k70thQ:	1.3	0.0	1.5		19.2	0.0	0.7		8.1	18.2	18.2		5.3	28.3	28.3	
85th%Factor:	1.59	1.60	1.59		1.47	1.60	1.59		1.54	1.48	1.48		1.56	1.43	1.43	
HCM2k85thQ:	1.8	0.0	2.0		24.2	0.0	1.0		10.6	23.0	23.0		6.9	35.2	35.2	
90th%Factor:	1.78	1.80	1.78		1.58	1.80	1.79		1.68	1.58	1.58		1.72	1.52	1.52	
HCM2k90thQ:	2.0	0.0	2.2		25.9	0.0	1.1		11.5	24.6	24.6		7.6	37.3	37.3	
95th%Factor:	2.06	2.10	2.06		1.74	2.10	2.08		1.91	1.75	1.75		1.97	1.65	1.65	
HCM2k95thQ:	2.3	0.0	2.6		28.6	0.0	1.2		13.1	27.3	27.3		8.7	40.6	40.6	
98th%Factor:	2.62	2.70	2.61		1.98	2.70	2.66		2.29	2.00	2.00		2.41	1.85	1.85	
HCM2k98thQ:	2.9	0.0	3.3		32.6	0.0	1.6		15.7	31.2	31.2		10.7	45.5	45.5	

Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Cycle (sec):	100	Critical Vol./Cap.(X):	0.938
Loss Time (sec):	12	Average Delay (sec/veh):	43.8
Optimal Cycle:	131	Level Of Service:	D

Street Name:	Micke Grove Road/Holman Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	1	0	2	0	1	2	0	4	0	1	2	0	4	0	1
Volume Module:	PM Peak Hour											
Base Vol:	622	188	44	41	199	246	384	1544	434	71	1517	27
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	622	188	44	41	199	246	384	1544	434	71	1517	27
Added Vol:	100	0	0	0	0	42	37	131	118	0	141	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	722	188	44	41	199	288	421	1675	552	71	1658	27
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	785	204	48	45	216	313	458	1821	600	77	1802	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	785	204	48	45	216	313	458	1821	600	77	1802	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	785	204	48	45	216	313	458	1821	600	77	1802	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	3538	1583	1769	3538	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.23	0.06	0.03	0.03	0.06	0.20	0.13	0.27	0.38	0.02	0.27	0.02
Crit Moves:	****					****	****				****	
Green/Cycle:	0.24	0.32	0.32	0.14	0.21	0.21	0.14	0.40	0.40	0.02	0.28	0.28
Volume/Cap:	0.94	0.18	0.10	0.18	0.29	0.94	0.94	0.67	0.94	0.94	0.94	0.07
Delay/Veh:	55.0	24.9	24.2	38.5	33.4	72.3	68.5	25.1	51.6	129.2	44.5	26.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	55.0	24.9	24.2	38.5	33.4	72.3	68.5	25.1	51.6	129.2	44.5	26.2
LOS by Move:	E	C	C	D	C	E	E	C	D	F	D	C
HCM2k95thQ:	720	106	47	65	145	605	502	541	936	71	655	28

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2	0	2	0	1	1	0	2	0	1	2	0	4	0	1	2	0	4	0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	2	1	1	2	1	2	4	1	2	4	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Fnl Sat Adj:	0.90	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.24	0.32	0.32	0.14	0.21	0.21	0.14	0.40	0.40	0.02	0.28	0.28
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.86	0.85	0.95	0.93	0.99	1.00	0.88	0.97	1.00	0.99	0.87
Q1:	10.9	1.9	0.8	1.0	2.5	8.5	6.5	10.1	15.7	1.1	13.3	0.5
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.91	0.91	0.91
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.30	0.30
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.03	0.15	0.13
Q2:	5.6	0.2	0.1	0.2	0.4	5.1	4.5	1.9	6.7	0.3	1.6	0.0
HCM2KQueue:	16.6	2.1	0.9	1.3	2.9	13.6	11.0	12.0	22.4	1.4	14.9	0.5
70th%Factor:	1.17	1.19	1.20	1.20	1.19	1.17	1.18	1.17	1.16	1.20	1.17	1.20
HCM2k70thQ:	19.3	2.5	1.1	1.5	3.4	15.9	12.9	14.0	25.9	1.7	17.4	0.6
85th%Factor:	1.47	1.58	1.59	1.59	1.57	1.49	1.51	1.50	1.44	1.59	1.48	1.59
HCM2k85thQ:	24.4	3.3	1.4	2.0	4.5	20.3	16.6	18.0	32.3	2.2	22.1	0.8
90th%Factor:	1.57	1.76	1.78	1.78	1.75	1.60	1.63	1.62	1.53	1.77	1.59	1.79
HCM2k90thQ:	26.1	3.7	1.6	2.2	5.0	21.8	17.9	19.4	34.2	2.5	23.6	0.9
95th%Factor:	1.74	2.03	2.07	2.06	2.01	1.78	1.83	1.81	1.67	2.06	1.76	2.08
HCM2k95thQ:	28.8	4.3	1.9	2.6	5.8	24.2	20.1	21.6	37.4	2.8	26.2	1.1
98th%Factor:	1.98	2.55	2.63	2.61	2.50	2.05	2.13	2.10	1.88	2.60	2.02	2.66
HCM2k98thQ:	32.8	5.3	2.4	3.3	7.2	27.9	23.4	25.1	42.0	3.6	30.0	1.4

Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Eight Mile & SR 99 W Frontage

Cycle (sec):	100	Critical Vol./Cap.(X):	0.909
Loss Time (sec):	12	Average Delay (sec/veh):	32.1
Optimal Cycle:	114	Level Of Service:	C

Street Name:	SR 99 West Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0
Volume Module:PM Peak Hour												
Base Vol:	2	10	157	338	3	2	6	1658	1	132	1625	394
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	10	157	338	3	2	6	1658	1	132	1625	394
Added Vol:	0	0	0	0	0	0	0	131	0	0	141	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	2	10	157	338	3	2	6	1789	1	132	1766	394
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	2	11	171	367	3	2	7	1945	1	143	1920	428
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	11	171	367	3	2	7	1945	1	143	1920	428
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	2	11	171	367	3	2	7	1945	1	143	1920	428
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.84	0.84	0.93	0.92	0.92	0.93	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	0.06	0.94	1.00	0.60	0.40	1.00	3.00	1.00	2.00	2.45	0.55
Final Sat.:	1769	96	1504	1769	1050	700	1769	5083	1583	3432	4044	902
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.11	0.21	0.00	0.00	0.00	0.38	0.00	0.04	0.47	0.47
Crit Moves:		****		****			****				****	
Green/Cycle:	0.10	0.12	0.12	0.23	0.25	0.25	0.00	0.47	0.47	0.05	0.52	0.52
Volume/Cap:	0.01	0.91	0.91	0.91	0.01	0.01	0.91	0.81	0.00	0.81	0.91	0.91
Delay/Veh:	40.6	82.4	82.4	61.4	28.0	28.0	325.8	24.4	13.8	69.8	27.0	27.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.6	82.4	82.4	61.4	28.0	28.0	325.8	24.4	13.8	69.8	27.0	27.0
LOS by Move:	D	F	F	E	C	C	F	C	B	E	C	C
HCM2k95thQ:	3	407	407	647	6	6	15	723	1	129	1002	1002

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	1 0	1	0	0	1 0	1	0	3	0 1	2	0	2	1 0
Lane Group:	L		RT	RT	L		RT	RT	L		T	R	L		RT	RT
#LnsInGrps:	1		1	1	1		1	1	1		3	1	2		3	3
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.86	0.86		xxxx	0.94	0.94		xxxx	xxxx	0.85		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.84	0.84		0.93	0.92	0.92		0.93	0.98	0.83		0.93	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.84	0.84		0.93	0.92	0.92		0.93	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.10	0.12	0.12		0.23	0.25	0.25		0.00	0.47	0.47		0.05	0.52	0.52	
ArrivalType:		4				4				4				4		
ProgFactor:	0.96	0.99	0.99		0.99	0.89	0.89		1.00	0.88	0.70		1.00	0.91	0.91	
Q1:		0.1	5.0	5.0		9.8	0.1	0.1		0.2	14.8	0.0		2.0	19.7	19.7
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.67	0.67	0.67		0.46	0.46	0.46	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.69	0.69	0.69		0.89	0.89	0.89	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.03	0.47	0.43		0.16	0.63	0.63	
Q2:		0.0	3.8	3.8		4.8	0.0	0.0		0.1	1.8	0.0		0.5	4.5	4.5
HCM2KQueue:		0.1	8.7	8.7		14.7	0.1	0.1		0.3	16.6	0.0		2.5	24.2	24.2
70th%Factor:	1.20	1.18	1.18		1.17	1.20	1.20		1.20	1.17	1.20		1.19	1.15	1.15	
HCM2k70thQ:		0.1	10.3	10.3		17.1	0.1	0.1		0.4	19.4	0.0		3.0	27.9	27.9
85th%Factor:	1.60	1.52	1.52		1.48	1.60	1.60		1.60	1.47	1.60		1.58	1.43	1.43	
HCM2k85thQ:		0.1	13.3	13.3		21.8	0.2	0.2		0.5	24.5	0.0		4.0	34.7	34.7
90th%Factor:	1.80	1.66	1.66		1.59	1.80	1.80		1.79	1.57	1.80		1.75	1.52	1.52	
HCM2k90thQ:		0.1	14.4	14.4		23.3	0.2	0.2		0.5	26.2	0.0		4.5	36.8	36.8
95th%Factor:	2.10	1.87	1.87		1.77	2.10	2.10		2.09	1.74	2.10		2.02	1.66	1.66	
HCM2k95thQ:		0.1	16.3	16.3		25.9	0.2	0.2		0.6	28.9	0.0		5.2	40.1	40.1
98th%Factor:	2.70	2.21	2.21		2.02	2.69	2.69		2.68	1.98	2.70		2.52	1.86	1.86	
HCM2k98thQ:		0.2	19.3	19.3		29.7	0.3	0.3		0.8	32.9	0.0		6.4	44.9	44.9

Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Eight Mile & SR 99 E Frontage

Cycle (sec):	100	Critical Vol./Cap.(X):	0.245
Loss Time (sec):	12	Average Delay (sec/veh):	4.0
Optimal Cycle:	29	Level Of Service:	A

Street Name:	SR 99 East Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	2 0	1	1 0	1 1	0
Volume Module:	PM Peak Hour											
Base Vol:	10	2	6	8	1	5	10	624	5	8	624	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	2	6	8	1	5	10	624	5	8	624	6
Added Vol:	0	0	0	0	0	0	0	15	0	0	17	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	10	2	6	8	1	5	10	639	5	8	641	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	11	2	7	9	1	5	11	695	5	9	697	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	11	2	7	9	1	5	11	695	5	9	697	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	11	2	7	9	1	5	11	695	5	9	697	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.87	0.87	0.93	0.86	0.86	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	1.00	0.25	0.75	1.00	0.17	0.83	1.00	2.00	1.00	1.00	1.98	0.02
Final Sat.:	1769	413	1240	1769	272	1358	1769	3538	1583	1769	3501	33
Capacity Analysis Module:												
Vol/Sat:	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.20	0.00	0.00	0.20	0.20
Crit Moves:	****				****		****				****	
Green/Cycle:	0.03	0.02	0.02	0.02	0.02	0.02	0.03	0.82	0.82	0.02	0.81	0.81
Volume/Cap:	0.24	0.25	0.25	0.25	0.24	0.24	0.24	0.24	0.00	0.24	0.24	0.24
Delay/Veh:	50.7	51.7	51.7	51.8	53.3	53.3	50.7	2.1	1.7	51.6	2.2	2.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.7	51.7	51.7	51.8	53.3	53.3	50.7	2.1	1.7	51.6	2.2	2.2
LOS by Move:	D	D	D	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	31	28	28	28	24	24	17	15	0	27	17	17

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	0	1	0	1 0	0	1	0	1 0	2	0	1	1 0	1	1	0
Lane Group:	L		RT		RT	L		RT	RT	L	T	R	L		RT	RT
#LnsInGrps:	1		1		1	1		1	1	1	2	1	1		2	2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12		12	12		12	12	12	12	12	12		12	12
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.89	0.89		xxxx	0.88	0.88		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.87	0.87		0.93	0.86	0.86		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	0.95	
Fnl Sat Adj:	0.93	0.87	0.87		0.93	0.86	0.86		0.93	0.93	0.83		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.03	0.02	0.02	0.02	0.02	0.02	0.03	0.82	0.82	0.02	0.81	0.81
ArrivalType:	4				4				4				4			
ProgFactor:	0.99	0.99	0.99	0.99	1.00	1.00	0.99	0.00	0.00	0.99	0.00	0.00
Q1:	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.0	0.0	0.2	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.26	0.26	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.97	0.97	0.97	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.11	0.92	0.84	1.00	1.00	1.00
Q2:	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.3	0.0	0.3	0.3	0.3
HCM2KQueue:	0.6	0.5	0.5	0.5	0.5	0.5	0.3	0.3	0.0	0.5	0.3	0.3
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	0.7	0.6	0.6	0.6	0.6	0.6	0.4	0.3	0.0	0.6	0.4	0.4
85th%Factor:	1.59	1.59	1.59	1.59	1.60	1.60	1.60	1.60	1.60	1.59	1.60	1.60
HCM2k85thQ:	1.0	0.9	0.9	0.9	0.7	0.7	0.5	0.5	0.0	0.8	0.5	0.5
90th%Factor:	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.80	1.79	1.79	1.79
HCM2k90thQ:	1.1	1.0	1.0	1.0	0.8	0.8	0.6	0.5	0.0	0.9	0.6	0.6
95th%Factor:	2.08	2.08	2.08	2.08	2.08	2.08	2.09	2.09	2.10	2.08	2.09	2.09
HCM2k95thQ:	1.2	1.1	1.1	1.1	1.0	1.0	0.7	0.6	0.0	1.1	0.7	0.7
98th%Factor:	2.66	2.66	2.66	2.66	2.66	2.66	2.67	2.68	2.70	2.66	2.68	2.68
HCM2k98thQ:	1.6	1.4	1.4	1.4	1.2	1.2	0.9	0.8	0.0	1.4	0.9	0.9

Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 West & L.C.MarkTaylor/Marlette

Cycle (sec):	100	Critical Vol./Cap.(X):	0.597
Loss Time (sec):	12	Average Delay (sec/veh):	23.5
Optimal Cycle:	48	Level Of Service:	C

Street Name:	West Lane								Lt.Col.Mark Taylor/Marlette Rd							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	3	1 0	1	0	4	0 1	1	0	1	0 1	1	0	0	1 0
Volume Module:	PM Peak Hour															
Base Vol:	196	1600	0	0	1352	117	196	0	117	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	196	1600	0	0	1352	117	196	0	117	0	0	0				
Added Vol:	0	183	119	54	71	0	0	0	0	157	0	6				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	196	1783	119	54	1423	117	196	0	117	157	0	6				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92				
PHF Volume:	213	1938	129	59	1547	127	213	0	127	171	0	7				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	213	1938	129	59	1547	127	213	0	127	171	0	7				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	213	1938	129	59	1547	127	213	0	127	171	0	7				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.93	0.88	0.88	0.93	0.89	0.83	0.93	1.00	0.83	0.93	1.00	0.83				
Lanes:	1.00	3.75	0.25	1.00	4.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00				
Final Sat.:	1769	6296	420	1769	6778	1583	1769	1900	1583	1769	0	1583				
Capacity Analysis Module:																
Vol/Sat:	0.12	0.31	0.31	0.03	0.23	0.08	0.12	0.00	0.08	0.10	0.00	0.00				
Crit Moves:	****				****				****	****						
Green/Cycle:	0.20	0.53	0.53	0.06	0.38	0.38	0.29	0.00	0.13	0.16	0.00	0.16				
Volume/Cap:	0.60	0.58	0.58	0.58	0.60	0.21	0.42	0.00	0.60	0.60	0.00	0.03				
Delay/Veh:	39.0	16.4	16.4	54.5	25.1	20.9	29.5	0.0	45.3	42.3	0.0	35.3				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	39.0	16.4	16.4	54.5	25.1	20.9	29.5	0.0	45.3	42.3	0.0	35.3				
LOS by Move:	D	B	B	D	C	C	C	A	D	D	A	D				
HCM2k95thQ:	313	433	433	82	394	100	248	0	224	273	0	9				

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #16 West & L.C.MarkTaylor/Marlette

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	3	1	0	1	0	4	0	1	1	0	1	0	1	1
Lane Group:	L	RT		RT	L	T		R	L	T		R	L	RT		RT
#LnsInGrps:	1	4		4	1	4		1	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	xxxx	1.00		1.00	xxxx	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	xxxx	0.98		0.98	xxxx	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	xxxx	1.00		1.00	xxxx	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	xxxx	1.00		1.00	xxxx	1.00	
RT Adj:	xxxx	0.99	0.99		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.97	0.97		0.93	0.98	0.83		0.93	1.00	0.83		0.93	1.00	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	0.91		1.00	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.88	0.88		0.93	0.89	0.83		0.93	1.00	0.83		0.93	1.00	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.00	1.00		1.00	0.00	1.00	

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #16 West & L.C.MarkTaylor/Marlette

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.20	0.53	0.53		0.06	0.38	0.38		0.29	0.00	0.13		0.16	0.00	0.16	
ArrivalType:		4				4				4				4		
ProgFactor:	0.96	0.74	0.74		0.99	0.88	0.82		0.91	1.00	0.98		0.97	1.00	0.94	
Q1:	5.2	8.0	8.0		1.6	8.3	1.9		4.4	0.0	3.2		4.3	0.0	0.1	
UpstreamVC:	0.00	0.00	0.00		1.14	1.14	1.14		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.09	0.09	0.09		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		0.02	0.05	0.05		1.00	0.00	1.00		1.00	0.00	1.00	
Q2:	1.4	1.4	1.4		0.0	0.1	0.0		0.7	0.0	1.3		1.4	0.0	0.0	
HCM2KQueue:	6.5	9.3	9.3		1.6	8.4	2.0		5.1	0.0	4.6		5.6	0.0	0.2	
70th%Factor:	1.18	1.18	1.18		1.20	1.18	1.20		1.19	1.20	1.19		1.19	1.20	1.20	
HCM2k70thQ:	7.7	11.0	11.0		1.9	9.9	2.3		6.0	0.0	5.4		6.7	0.0	0.2	
85th%Factor:	1.54	1.52	1.52		1.58	1.53	1.58		1.55	1.60	1.56		1.55	1.60	1.60	
HCM2k85thQ:	10.1	14.2	14.2		2.5	12.8	3.1		7.9	0.0	7.1		8.7	0.0	0.3	
90th%Factor:	1.69	1.65	1.65		1.77	1.66	1.76		1.71	1.80	1.72		1.70	1.80	1.80	
HCM2k90thQ:	11.0	15.4	15.4		2.8	14.0	3.4		8.7	0.0	7.8		9.6	0.0	0.3	
95th%Factor:	1.92	1.86	1.86		2.05	1.88	2.04		1.95	2.10	1.97		1.94	2.10	2.09	
HCM2k95thQ:	12.5	17.3	17.3		3.3	15.8	4.0		9.9	0.0	9.0		10.9	0.0	0.4	
98th%Factor:	2.31	2.19	2.19		2.58	2.22	2.56		2.38	2.70	2.40		2.35	2.70	2.69	
HCM2k98thQ:	15.1	20.4	20.4		4.1	18.7	5.0		12.1	0.0	11.0		13.2	0.0	0.5	

Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

Cycle (sec):	100	Critical Vol./Cap.(X):	1.173
Loss Time (sec):	12	Average Delay (sec/veh):	92.3
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Holman Road									Lt. Col. Mark Taylor Street								
Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Y+R:	4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0		
Lanes:	1	0	3	0	1	1	0	3	0	1	1	0	1	0	1	1	0	0	1	0
Volume Module:	PM Peak Hour																			
Base Vol:	47	557	265			425	349	32			63	519	25			333	525	360		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	47	557	265			425	349	32			63	519	25			333	525	360		
Added Vol:	0	16	0			0	44	0			0	0	0			0	0	0		
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0		
Initial Fut:	47	573	265			425	393	32			63	519	25			333	525	360		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92		
PHF Volume:	51	623	288			462	427	35			68	564	27			362	571	391		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	51	623	288			462	427	35			68	564	27			362	571	391		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
FinalVolume:	51	623	288			462	427	35			68	564	27			362	571	391		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900		
Adjustment:	0.93	0.89	0.83			0.93	0.89	0.83			0.93	0.98	0.83			0.93	0.92	0.92		
Lanes:	1.00	3.00	1.00			1.00	3.00	1.00			1.00	1.00	1.00			1.00	0.59	0.41		
Final Sat.:	1769	5083	1583			1769	5083	1583			1769	1862	1583			1769	1037	711		
Capacity Analysis Module:																				
Vol/Sat:	0.03	0.12	0.18			0.26	0.08	0.02			0.04	0.30	0.02			0.20	0.55	0.55		
Crit Moves:			****			****					****						****			
Green/Cycle:	0.10	0.16	0.16			0.22	0.28	0.28			0.03	0.30	0.30			0.20	0.47	0.47		
Volume/Cap:	0.30	0.79	1.17			1.17	0.30	0.08			1.17	1.01	0.06			1.01	1.17	1.17		
Delay/Veh:	43.0	46.1	154.5			140.4	28.3	26.5			220.6	75.8	25.0			90.2	117	117.1		
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
AdjDel/Veh:	43.0	46.1	154.5			140.4	28.3	26.5			220.6	75.8	25.0			90.2	117	117.1		
LOS by Move:	D	D	F			F	C	C			F	E	C			F	F	F		
HCM2k95thQ:	71	331	648			1060	174	37			187	926	26			738	1910	1910		

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																				
Lanes:	1	0	3	0	1	1	0	3	0	1	1	0	1	0	1	1	0	0	1	0
Lane Group:	L		T		R	L		T		R	L		T		R	L		RT		RT
#LnsInGrps:	1		3		1	1		3		1	1		1		1	1		1		1
HCM Ops Input Saturation Adj Module:																				
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12
CrsswalkWid:			8					8					8					8		
% Hev Veh:			2					2					2					2		
Grade:			0%					0%					0%					0%		
Parking/Hr:			No					No					No					No		
Bus Stp/Hr:			0					0					0					0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																			
Cnft Ped/Hr:			0					0					0					0		
ExclusiveRT:			Include					Include					Include					Include		
% RT Prtct:			0					0					0					0		
HCM Ops f(lt) Adj Case Module:																				
f(lt) Case:	1		xxxx		xxxx	1		xxxx		xxxx	1		xxxx		xxxx	1		xxxx		xxxx
HCM Ops Saturation Adj Module:																				
Ln Wid Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Hev Veh Adj:	0.98		0.98		0.98	0.98		0.98		0.98	0.98		0.98		0.98	0.98		0.98		0.98
Grade Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Parking Adj:	xxxx		xxxx		1.00	xxxx		xxxx		1.00	xxxx		xxxx		1.00	xxxx		1.00		1.00
Bus Stp Adj:	xxxx		xxxx		1.00	xxxx		xxxx		1.00	xxxx		xxxx		1.00	xxxx		1.00		1.00
Area Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
RT Adj:	xxxx		xxxx		0.85	xxxx		xxxx		0.85	xxxx		xxxx		0.85	xxxx		0.94		0.94
LT Adj:	0.95		xxxx		xxxxx	0.95		xxxx		xxxxx	0.95		xxxx		xxxxx	0.95		xxxx		xxxxx
PedBike Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
HCM Sat Adj:	0.93		0.98		0.83	0.93		0.98		0.83	0.93		0.98		0.83	0.93		0.92		0.92
Usr Sat Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
MLF Sat Adj:	1.00		0.91		1.00	1.00		0.91		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Fnl Sat Adj:	0.93		0.89		0.83	0.93		0.89		0.83	0.93		0.98		0.83	0.93		0.92		0.92
Delay Adjustment Factor Module:																				
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																			
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																			
DelAdjFctr:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.10	0.16	0.16	0.22	0.28	0.28	0.03	0.30	0.30	0.20	0.47	0.47
ArrivalType:		4			4			4			4	
ProgFactor:	0.97	0.98	1.00	1.00	0.90	0.88	1.00	1.00	0.86	1.00	1.00	1.00
Q1:	1.3	6.0	8.0	12.8	3.1	0.6	1.9	15.7	0.5	10.1	26.7	26.7
UpstreamVC:	0.57	0.57	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.80	0.80	0.80	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
EarlyArrAdj:	0.20	0.28	0.25	1.00	1.00	1.00	0.13	0.52	0.47	1.00	1.00	1.00
Q2:	0.1	0.9	6.7	13.0	0.4	0.1	1.9	6.4	0.0	7.0	23.0	23.0
HCM2KQueue:	1.4	6.9	14.7	25.8	3.5	0.7	3.8	22.1	0.5	17.0	49.7	49.7
70th%Factor:	1.20	1.18	1.17	1.15	1.19	1.20	1.19	1.16	1.20	1.17	1.13	1.13
HCM2k70thQ:	1.6	8.2	17.2	29.7	4.1	0.8	4.5	25.6	0.6	19.8	56.1	56.1
85th%Factor:	1.59	1.54	1.48	1.43	1.57	1.59	1.56	1.44	1.60	1.47	1.36	1.36
HCM2k85thQ:	2.2	10.7	21.8	36.8	5.5	1.1	5.9	31.9	0.8	25.0	67.4	67.4
90th%Factor:	1.77	1.68	1.59	1.51	1.74	1.79	1.73	1.53	1.79	1.57	1.43	1.43
HCM2k90thQ:	2.4	11.7	23.4	39.0	6.0	1.3	6.5	33.9	0.9	26.7	71.2	71.2
95th%Factor:	2.06	1.91	1.77	1.64	1.99	2.08	1.99	1.68	2.08	1.73	1.54	1.54
HCM2k95thQ:	2.8	13.2	25.9	42.4	6.9	1.5	7.5	37.0	1.0	29.5	76.4	76.4
98th%Factor:	2.60	2.29	2.02	1.84	2.47	2.65	2.45	1.88	2.66	1.97	1.72	1.72
HCM2k98thQ:	3.6	15.9	29.7	47.4	8.6	1.9	9.2	41.6	1.3	33.5	85.5	85.5

Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.768
Loss Time (sec): 12 Average Delay (sec/veh): 32.6
Optimal Cycle: 70 Level Of Service: C

Street Name:	West Lane						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	2	0	1	2	0	2	0	1
Volume Module:	PM Peak Hour											
Base Vol:	458	1636	240	97	1319	79	154	391	306	319	329	68
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	458	1636	240	97	1319	79	154	391	306	319	329	68
Added Vol:	0	242	0	33	188	7	8	0	0	24	1	52
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	458	1878	240	130	1507	86	162	391	306	343	330	120
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	498	2041	261	141	1638	93	176	425	333	373	359	130
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	498	2041	261	141	1638	93	176	425	333	373	359	130
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	498	2041	261	141	1638	93	176	425	333	373	359	130
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3538	7448	1583	3538	7448	1583	3538	3724	1583	3538	3724	1583
Capacity Analysis Module:												
Vol/Sat:	0.14	0.27	0.16	0.04	0.22	0.06	0.05	0.11	0.21	0.11	0.10	0.08
Crit Moves:	****				****				****	****		
Green/Cycle:	0.18	0.41	0.41	0.06	0.29	0.29	0.14	0.27	0.27	0.14	0.27	0.27
Volume/Cap:	0.77	0.67	0.40	0.67	0.77	0.21	0.36	0.42	0.77	0.77	0.36	0.30
Delay/Veh:	44.4	24.6	21.3	54.1	34.4	27.3	39.4	30.1	41.5	48.9	29.6	29.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.4	24.6	21.3	54.1	34.4	27.3	39.4	30.1	41.5	48.9	29.6	29.4
LOS by Move:	D	C	C	D	C	C	D	C	D	D	C	C
HCM2k95thQ:	421	544	239	170	573	102	135	250	497	350	207	152

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	2	0	1	2	0	2	0	1
Lane Group:	L	T		R	L	T		R	L	T		R	L	T		R
#LnsInGrps:	2	4		1	2	4		1	2	2		1	2	2		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.18	0.41	0.41		0.06	0.29	0.29		0.14	0.27	0.27		0.14	0.27	0.27	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.88	0.82		0.99	0.96	0.88		0.96	0.91	0.96		0.99	0.91	0.90	
Q1:	6.4	10.1	4.2		1.9	10.0	1.7		2.1	4.4	8.2		4.9	3.7	2.6	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	2.6	1.9	0.7		1.5	2.8	0.3		0.5	0.7	2.7		2.5	0.5	0.4	
HCM2KQueue:	9.0	12.0	4.9		3.4	12.8	2.0		2.7	5.1	10.9		7.4	4.2	3.0	
70th%Factor:	1.18	1.17	1.19		1.19	1.17	1.20		1.19	1.19	1.18		1.18	1.19	1.19	
HCM2k70thQ:	10.7	14.1	5.8		4.1	15.0	2.4		3.2	6.1	12.8		8.7	5.0	3.6	
85th%Factor:	1.52	1.50	1.55		1.57	1.50	1.58		1.57	1.55	1.51		1.53	1.56	1.57	
HCM2k85thQ:	13.7	18.1	7.6		5.3	19.1	3.2		4.2	8.0	16.4		11.3	6.6	4.8	
90th%Factor:	1.65	1.62	1.71		1.74	1.61	1.76		1.75	1.71	1.63		1.68	1.72	1.74	
HCM2k90thQ:	14.9	19.5	8.4		5.9	20.6	3.5		4.7	8.8	17.8		12.4	7.2	5.3	
95th%Factor:	1.86	1.81	1.96		2.00	1.80	2.04		2.02	1.95	1.83		1.90	1.98	2.01	
HCM2k95thQ:	16.8	21.8	9.6		6.8	22.9	4.1		5.4	10.0	19.9		14.0	8.3	6.1	
98th%Factor:	2.20	2.10	2.39		2.47	2.07	2.56		2.51	2.37	2.13		2.27	2.42	2.49	
HCM2k98thQ:	19.9	25.2	11.6		8.4	26.5	5.1		6.7	12.2	23.2		16.7	10.2	7.6	

Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.632
Loss Time (sec): 12 Average Delay (sec/veh): 35.1
Optimal Cycle: 51 Level Of Service: D

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:	PM Peak Hour											
Base Vol:	246	730	164	149	573	94	167	648	144	221	626	108
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	246	730	164	149	573	94	167	648	144	221	626	108
Added Vol:	4	13	0	0	12	32	3	15	2	0	26	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	250	743	164	149	585	126	170	663	146	221	652	108
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	272	808	178	162	636	137	185	721	159	240	709	117
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	272	808	178	162	636	137	185	721	159	240	709	117
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	272	808	178	162	636	137	185	721	159	240	709	117
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.15	0.16	0.11	0.09	0.13	0.09	0.10	0.14	0.10	0.14	0.14	0.07
Crit Moves:	****				****			****		****		
Green/Cycle:	0.24	0.28	0.28	0.16	0.20	0.20	0.19	0.22	0.22	0.21	0.25	0.25
Volume/Cap:	0.63	0.57	0.40	0.57	0.63	0.44	0.56	0.63	0.45	0.63	0.56	0.30
Delay/Veh:	36.9	31.4	29.8	41.4	38.1	36.2	38.9	36.2	34.3	39.1	33.1	30.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.9	31.4	29.8	41.4	38.1	36.2	38.9	36.2	34.3	39.1	33.1	30.7
LOS by Move:	D	C	C	D	D	D	D	D	C	D	C	C
HCM2k95thQ:	331	333	192	219	306	171	273	374	214	309	308	130

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L - T - R				L - T - R				L - T - R				L - T - R			
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	3 0	1		1 0	3 0	1		1 0	3 0	1		1 0	3 0	1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	3	1		1	3	1		1	3	1		1	3	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12				
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.24	0.28	0.28	0.16	0.20	0.20	0.19	0.22	0.22	0.21	0.25	0.25
ArrivalType:		4			4			4			4	
ProgFactor:	0.95	0.93	0.91	0.97	0.96	0.95	0.96	0.96	0.94	0.96	0.94	0.91
Q1:	6.4	6.5	3.7	4.0	5.7	3.2	4.5	6.3	3.6	5.8	5.9	2.4
UpstreamVC:	0.66	0.66	0.66	0.30	0.30	0.30	0.00	0.00	0.00	0.41	0.41	0.41
UpstreamAdj:	0.70	0.70	0.70	0.96	0.96	0.96	0.00	0.00	0.00	0.92	0.92	0.92
EarlyArrAdj:	0.31	0.35	0.31	0.33	0.39	0.35	1.00	1.00	1.00	0.38	0.43	0.39
Q2:	0.5	0.4	0.2	0.4	0.6	0.3	1.2	1.6	0.8	0.6	0.5	0.2
HCM2KQueue:	6.9	7.0	3.9	4.5	6.4	3.4	5.6	7.9	4.4	6.4	6.4	2.6
70th%Factor:	1.18	1.18	1.19	1.19	1.19	1.19	1.19	1.18	1.19	1.19	1.19	1.19
HCM2k70thQ:	8.2	8.3	4.6	5.3	7.5	4.1	6.7	9.4	5.2	7.6	7.6	3.1
85th%Factor:	1.54	1.54	1.56	1.56	1.54	1.57	1.55	1.53	1.56	1.54	1.54	1.58
HCM2k85thQ:	10.7	10.7	6.0	6.9	9.8	5.4	8.7	12.1	6.8	9.9	9.9	4.0
90th%Factor:	1.68	1.68	1.73	1.72	1.69	1.74	1.70	1.67	1.72	1.69	1.69	1.75
HCM2k90thQ:	11.7	11.8	6.7	7.7	10.8	6.0	9.6	13.2	7.5	10.9	10.8	4.5
95th%Factor:	1.91	1.91	1.98	1.97	1.92	2.00	1.94	1.89	1.97	1.92	1.92	2.02
HCM2k95thQ:	13.2	13.3	7.7	8.8	12.2	6.9	10.9	15.0	8.6	12.4	12.3	5.2
98th%Factor:	2.29	2.28	2.44	2.41	2.31	2.47	2.35	2.24	2.42	2.31	2.31	2.52
HCM2k98thQ:	15.9	16.0	9.4	10.7	14.7	8.5	13.2	17.8	10.5	14.9	14.8	6.5

Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 Morada Ln & SR99 W Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.653
Loss Time (sec):	12	Average Delay (sec/veh):	24.5
Optimal Cycle:	54	Level Of Service:	C

Street Name:	SR 99 West Frontage Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	2 0	0 1	0	1 0	2 1	0	1 0	2 0	1
Volume Module:	PM Peak Hour											
Base Vol:	5	63	89	468	27	11	28	684	2	96	677	507
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	63	89	468	27	11	28	684	2	96	677	507
Added Vol:	0	0	0	0	0	0	0	15	0	0	26	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	63	89	468	27	11	28	699	2	96	703	507
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	5	68	97	509	29	12	30	760	2	104	764	551
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	68	97	509	29	12	30	760	2	104	764	551
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	5	68	97	509	29	12	30	760	2	104	764	551
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.90	0.94	0.94	0.93	0.89	0.89	0.93	0.93	0.83
Lanes:	2.00	1.00	1.00	2.00	0.71	0.29	1.00	2.99	0.01	1.00	2.00	1.00
Final Sat.:	3432	1862	1583	3432	1266	516	1769	5069	15	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.04	0.06	0.15	0.02	0.02	0.02	0.15	0.15	0.06	0.22	0.35
Crit Moves:			****	****			****					****
Green/Cycle:	0.02	0.09	0.09	0.23	0.30	0.30	0.03	0.40	0.40	0.16	0.53	0.53
Volume/Cap:	0.08	0.39	0.65	0.65	0.08	0.08	0.65	0.37	0.37	0.37	0.41	0.65
Delay/Veh:	48.5	44.1	53.8	37.1	25.1	25.1	76.8	21.2	21.2	38.5	14.0	18.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.5	44.1	53.8	37.1	25.1	25.1	76.8	21.2	21.2	38.5	14.0	18.6
LOS by Move:	D	D	D	D	C	C	E	C	C	D	B	B
HCM2k95thQ:	8	120	202	379	41	41	51	234	234	135	245	437

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #22 Morada Ln & SR99 W Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 1	0	1	2	0 0	1	0	1	0 2	1	0	1	0 2	0	1
Lane Group:	L	T		R	L	RT		RT	L	RT		RT	L	T		R
#LnsInGrps:	2	1		1	2	1		1	1	3		3	1	2		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.96	0.96		xxxx	1.00	1.00		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.94	0.94		0.93	0.98	0.98		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		0.97	1.00	1.00		1.00	0.91	0.91		1.00	0.95	1.00	
Fnl Sat Adj:	0.90	0.98	0.83		0.90	0.94	0.94		0.93	0.89	0.89		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #22 Morada Ln & SR99 W Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.02	0.09	0.09		0.23	0.30	0.30		0.03	0.40	0.40		0.16	0.53	0.53	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.98	0.99		0.96	0.86	0.86		1.00	0.83	0.83		0.96	0.68	0.75	
Q1:	0.1	1.8	2.6		6.3	0.7	0.7		0.8	4.5	4.5		2.5	4.5	8.3	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.63	0.63	0.63		0.31	0.31	0.31	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.73	0.73	0.73		0.96	0.96	0.96	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.09	0.45	0.45		0.33	0.70	0.64	
Q2:	0.1	0.6	1.5		1.7	0.1	0.1		0.2	0.3	0.3		0.2	0.5	1.2	
HCM2KQueue:	0.2	2.4	4.1		8.0	0.8	0.8		1.0	4.8	4.8		2.7	5.0	9.4	
70th%Factor:	1.20	1.19	1.19		1.18	1.20	1.20		1.20	1.19	1.19		1.19	1.19	1.18	
HCM2k70thQ:	0.2	2.8	4.9		9.5	1.0	1.0		1.2	5.7	5.7		3.2	6.0	11.1	
85th%Factor:	1.60	1.58	1.56		1.53	1.59	1.59		1.59	1.56	1.56		1.57	1.55	1.52	
HCM2k85thQ:	0.3	3.7	6.4		12.3	1.3	1.3		1.6	7.4	7.4		4.2	7.8	14.3	
90th%Factor:	1.80	1.76	1.73		1.67	1.78	1.78		1.78	1.72	1.72		1.75	1.71	1.65	
HCM2k90thQ:	0.3	4.2	7.0		13.4	1.4	1.4		1.8	8.2	8.2		4.7	8.6	15.6	
95th%Factor:	2.09	2.03	1.98		1.88	2.07	2.07		2.07	1.96	1.96		2.02	1.95	1.86	
HCM2k95thQ:	0.3	4.8	8.1		15.2	1.6	1.6		2.0	9.4	9.4		5.4	9.8	17.5	
98th%Factor:	2.69	2.53	2.43		2.24	2.64	2.64		2.63	2.39	2.39		2.51	2.38	2.18	
HCM2k98thQ:	0.4	6.0	9.9		18.0	2.1	2.1		2.6	11.4	11.4		6.7	11.9	20.6	

Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 West Ln & West Ln Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.880
Loss Time (sec):	12	Average Delay (sec/veh):	29.6
Optimal Cycle:	101	Level Of Service:	C

Street Name:	West Lane						West Lane Frontage Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 3	1 0	1	0 3	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module:	PM Peak Hour											
Base Vol:	313	2159	80	16	1760	26	62	40	258	99	25	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	313	2159	80	16	1760	26	62	40	258	99	25	10
Added Vol:	0	242	0	0	213	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	313	2401	80	16	1973	26	62	40	258	99	25	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	340	2610	87	17	2145	28	67	43	280	108	27	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	340	2610	87	17	2145	28	67	43	280	108	27	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	340	2610	87	17	2145	28	67	43	280	108	27	11
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.89	0.89	0.93	0.85	0.85	0.93	0.94	0.94
Lanes:	1.00	3.87	0.13	1.00	3.95	0.05	1.00	0.13	0.87	1.00	0.71	0.29
Final Sat.:	1769	6526	217	1769	6676	88	1769	217	1402	1769	1273	509
Capacity Analysis Module:												
Vol/Sat:	0.19	0.40	0.40	0.01	0.32	0.32	0.04	0.20	0.20	0.06	0.02	0.02
Crit Moves:	****				****			****		****		
Green/Cycle:	0.22	0.57	0.57	0.01	0.37	0.37	0.19	0.23	0.23	0.07	0.11	0.11
Volume/Cap:	0.88	0.70	0.70	0.70	0.88	0.88	0.20	0.88	0.88	0.88	0.20	0.20
Delay/Veh:	57.9	16.0	16.0	112.3	33.7	33.7	34.4	58.2	58.2	92.9	41.3	41.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	57.9	16.0	16.0	112.3	33.7	33.7	34.4	58.2	58.2	92.9	41.3	41.3
LOS by Move:	E	B	B	F	C	C	C	E	E	F	D	D
HCM2k95thQ:	454	508	508	80	842	842	88	571	571	281	61	61

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 3	1 0		1	0 3	1 0		1	0 0	1 0		1	0 0	1 0	
Lane Group:	L	RT		RT	L	RT		RT	L	RT		RT	L	RT		RT
#LnsInGrps:	1	4		4	1	4		4	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	0.87	0.87		xxxx	0.96	0.96	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.98		0.93	0.98	0.98		0.93	0.85	0.85		0.93	0.94	0.94	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	0.91		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.89		0.93	0.89	0.89		0.93	0.85	0.85		0.93	0.94	0.94	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.22	0.57	0.57	0.01	0.37	0.37	0.19	0.23	0.23	0.07	0.11	0.11
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.72	0.72	1.00	0.96	0.96	0.93	0.98	0.98	1.00	0.97	0.97
Q1:	9.0	10.6	10.6	0.5	14.9	14.9	1.5	8.6	8.6	3.0	0.9	0.9
UpstreamVC:	0.90	0.90	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.31	0.31	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.13	0.24	0.24	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.8	0.5	0.5	1.1	4.9	4.9	0.2	4.2	4.2	2.9	0.2	0.2
HCM2KQueue:	9.8	11.2	11.2	1.6	19.8	19.8	1.7	12.7	12.7	5.8	1.2	1.2
70th%Factor:	1.18	1.18	1.18	1.20	1.16	1.16	1.20	1.17	1.17	1.19	1.20	1.20
HCM2k70thQ:	11.6	13.1	13.1	1.9	23.0	23.0	2.1	14.9	14.9	6.9	1.4	1.4
85th%Factor:	1.52	1.51	1.51	1.58	1.45	1.45	1.58	1.50	1.50	1.55	1.59	1.59
HCM2k85thQ:	14.9	16.8	16.8	2.5	28.8	28.8	2.7	19.0	19.0	9.0	1.9	1.9
90th%Factor:	1.64	1.63	1.63	1.77	1.55	1.55	1.77	1.61	1.61	1.70	1.78	1.78
HCM2k90thQ:	16.2	18.2	18.2	2.8	30.7	30.7	3.0	20.5	20.5	9.9	2.1	2.1
95th%Factor:	1.85	1.82	1.82	2.05	1.70	1.70	2.05	1.80	1.80	1.93	2.06	2.06
HCM2k95thQ:	18.2	20.3	20.3	3.2	33.7	33.7	3.5	22.9	22.9	11.3	2.4	2.4
98th%Factor:	2.17	2.12	2.12	2.59	1.92	1.92	2.58	2.08	2.08	2.34	2.61	2.61
HCM2k98thQ:	21.3	23.7	23.7	4.0	38.0	38.0	4.4	26.4	26.4	13.6	3.1	3.1

Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 West Lane & Knickerbocker Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.895
Loss Time (sec):	12	Average Delay (sec/veh):	35.0
Optimal Cycle:	107	Level Of Service:	C

Street Name:	West Lane						Knickerbocker Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 3	1 0	1	0 3	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module:	PM Peak Hour											
Base Vol:	196	2435	58	113	2003	163	260	106	109	81	114	82
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	196	2435	58	113	2003	163	260	106	109	81	114	82
Added Vol:	0	242	0	0	213	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	196	2677	58	113	2216	163	260	106	109	81	114	82
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	213	2910	63	123	2409	177	283	115	118	88	124	89
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	213	2910	63	123	2409	177	283	115	118	88	124	89
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	213	2910	63	123	2409	177	283	115	118	88	124	89
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.88	0.88	0.93	0.91	0.91	0.93	0.92	0.92
Lanes:	1.00	3.92	0.08	1.00	3.73	0.27	1.00	0.49	0.51	1.00	0.58	0.42
Final Sat.:	1769	6614	143	1769	6250	460	1769	848	872	1769	1015	730
Capacity Analysis Module:												
Vol/Sat:	0.12	0.44	0.44	0.07	0.39	0.39	0.16	0.14	0.14	0.05	0.12	0.12
Crit Moves:	****				****		****				****	
Green/Cycle:	0.13	0.49	0.49	0.08	0.43	0.43	0.18	0.23	0.23	0.08	0.14	0.14
Volume/Cap:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.59	0.59	0.59	0.90	0.90
Delay/Veh:	74.6	27.3	27.3	94.3	30.5	30.5	66.2	36.6	36.6	50.2	74.5	74.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	74.6	27.3	27.3	94.3	30.5	30.5	66.2	36.6	36.6	50.2	74.5	74.5
LOS by Move:	E	C	C	F	C	C	E	D	D	D	E	E
HCM2k95thQ:	290	838	838	194	810	810	535	327	327	177	445	445

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 3	1	0	1	0 3	1	0	1	0 0	1	0	1	0 0	1	0
Lane Group:	L	RT		RT	L	RT		RT	L	RT		RT	L	RT		RT
#LnsInGrps:	1	4		4	1	4		4	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	1.00	1.00		xxxx	0.99	0.99		xxxx	0.92	0.92		xxxx	0.94	0.94	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.98		0.93	0.97	0.97		0.93	0.91	0.91		0.93	0.92	0.92	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	0.91		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.89		0.93	0.88	0.88		0.93	0.91	0.91		0.93	0.92	0.92	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.13	0.49	0.49		0.08	0.43	0.43		0.18	0.23	0.23		0.08	0.14	0.14	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.92	0.92		1.00	0.95	0.95		0.99	0.95	0.95		0.99	0.99	0.99	
Q1:	5.8	19.2	19.2		3.4	17.3	17.3		7.6	5.5	5.5		2.3	5.8	5.8	
UpstreamVC:	1.22	1.22	1.22		0.88	0.88	0.88		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.09	0.09	0.09		0.35	0.35	0.35		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	0.03	0.06	0.06		0.08	0.23	0.23		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.2	0.5	0.5		0.5	1.7	1.7		4.2	1.3	1.3		1.2	3.8	3.8	
HCM2KQueue:	6.0	19.7	19.7		3.9	19.0	19.0		11.8	6.8	6.8		3.6	9.6	9.6	
70th%Factor:	1.19	1.16	1.16		1.19	1.16	1.16		1.17	1.18	1.18		1.19	1.18	1.18	
HCM2k70thQ:	7.1	22.9	22.9		4.7	22.0	22.0		13.9	8.1	8.1		4.2	11.3	11.3	
85th%Factor:	1.55	1.46	1.46		1.56	1.46	1.46		1.50	1.54	1.54		1.57	1.52	1.52	
HCM2k85thQ:	9.3	28.7	28.7		6.1	27.7	27.7		17.8	10.5	10.5		5.6	14.6	14.6	
90th%Factor:	1.70	1.55	1.55		1.73	1.56	1.56		1.62	1.68	1.68		1.73	1.65	1.65	
HCM2k90thQ:	10.2	30.5	30.5		6.8	29.5	29.5		19.2	11.5	11.5		6.2	15.8	15.8	
95th%Factor:	1.93	1.70	1.70		1.98	1.71	1.71		1.81	1.91	1.91		1.99	1.85	1.85	
HCM2k95thQ:	11.6	33.5	33.5		7.8	32.4	32.4		21.4	13.1	13.1		7.1	17.8	17.8	
98th%Factor:	2.33	1.92	1.92		2.44	1.93	1.93		2.10	2.29	2.29		2.46	2.18	2.18	
HCM2k98thQ:	14.0	37.8	37.8		9.6	36.6	36.6		24.9	15.7	15.7		8.8	20.9	20.9	

Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	1.220
Loss Time (sec):	12	Average Delay (sec/veh):	87.2
Optimal Cycle:	180	Level Of Service:	F

Street Name:	West Lane								Hammer Lane							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	4	0	1	2	0	4	0	1
Volume Module:	PM Peak Hour															
Base Vol:	189	1827	466		773	1298	132		243	1071	104		619	1090	611	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	189	1827	466		773	1298	132		243	1071	104		619	1090	611	
Added Vol:	0	242	0		0	213	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	189	2069	466		773	1511	132		243	1071	104		619	1090	611	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	205	2249	507		840	1642	143		264	1164	113		673	1185	664	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	205	2249	507		840	1642	143		264	1164	113		673	1185	664	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	205	2249	507		840	1642	143		264	1164	113		673	1185	664	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Lanes:	2.00	4.00	1.00		2.00	4.00	1.00		2.00	4.00	1.00		2.00	4.00	1.00	
Final Sat.:	3432	6778	1583		3432	6778	1583		3432	6778	1583		3432	6778	1583	
Capacity Analysis Module:																
Vol/Sat:	0.06	0.33	0.32		0.24	0.24	0.09		0.08	0.17	0.07		0.20	0.17	0.42	
Crit Moves:		****			****				****						****	
Green/Cycle:	0.09	0.27	0.27		0.20	0.38	0.38		0.06	0.19	0.19		0.22	0.34	0.34	
Volume/Cap:	0.64	1.22	1.18		1.22	0.64	0.24		1.22	0.90	0.38		0.90	0.51	1.22	
Delay/Veh:	48.0	140	137.6		151.6	26.0	21.4		179.9	48.7	36.1		52.5	26.3	147.4	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	48.0	140	137.6		151.6	26.0	21.4		179.9	48.7	36.1		52.5	26.3	147.4	
LOS by Move:	D	F	F		F	C	C		F	D	D		D	C	F	
HCM2k95thQ:	211	1399	1141		938	440	116		449	588	159		444	309	1340	

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	4	0	1	2	0	4	0	1
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	4	1		2	4	1		2	4	1		2	4	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.09	0.27	0.27	0.20	0.38	0.38	0.06	0.19	0.19	0.22	0.34	0.34
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	1.00	1.00	1.00	0.89	0.82	1.00	0.99	0.95	0.99	0.89	1.00
Q1:	2.8	17.2	14.1	12.0	9.2	2.2	3.8	8.6	2.6	9.3	6.4	18.4
UpstreamVC:	0.00	0.00	0.00	0.90	0.90	0.90	0.00	0.00	0.00	1.03	1.03	1.03
UpstreamAdj:	0.00	0.00	0.00	0.32	0.32	0.32	0.00	0.00	0.00	0.09	0.09	0.09
EarlyArrAdj:	1.00	1.00	1.00	0.13	0.19	0.18	1.00	1.00	1.00	0.04	0.05	0.05
Q2:	1.5	18.2	14.0	10.4	0.3	0.1	5.9	4.5	0.6	0.3	0.1	15.2
HCM2KQueue:	4.3	35.3	28.1	22.4	9.5	2.3	9.7	13.1	3.2	9.6	6.4	33.6
70th%Factor:	1.19	1.14	1.15	1.16	1.18	1.19	1.18	1.17	1.19	1.18	1.19	1.14
HCM2k70thQ:	5.1	40.3	32.3	26.0	11.2	2.7	11.4	15.4	3.8	11.3	7.6	38.5
85th%Factor:	1.56	1.39	1.42	1.44	1.52	1.58	1.52	1.49	1.57	1.52	1.54	1.40
HCM2k85thQ:	6.7	49.2	39.8	32.4	14.4	3.6	14.7	19.6	5.0	14.6	9.9	47.0
90th%Factor:	1.72	1.47	1.50	1.53	1.65	1.76	1.65	1.61	1.74	1.65	1.69	1.47
HCM2k90thQ:	7.4	51.9	42.1	34.3	15.7	4.0	16.0	21.1	5.5	15.8	10.9	49.6
95th%Factor:	1.97	1.58	1.63	1.67	1.85	2.03	1.85	1.79	2.00	1.85	1.92	1.59
HCM2k95thQ:	8.4	56.0	45.7	37.5	17.6	4.7	18.0	23.5	6.4	17.8	12.4	53.6
98th%Factor:	2.42	1.77	1.82	1.88	2.18	2.54	2.17	2.06	2.48	2.18	2.31	1.78
HCM2k98thQ:	10.3	62.4	51.0	42.1	20.7	5.8	21.1	27.1	7.9	20.9	14.9	59.7

Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	1.032
Loss Time (sec):	12	Average Delay (sec/veh):	52.1
Optimal Cycle:	180	Level Of Service:	D

Street Name:	Hammer Lane						Holman Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 2	1 0	2	0 3	0 1	2	0 3	1 0	2	0 3	1 0
Volume Module:	PM Peak Hour											
Base Vol:	534	678	147	210	581	322	535	2004	321	209	2004	147
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	534	678	147	210	581	322	535	2004	321	209	2004	147
Added Vol:	0	17	0	0	15	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	534	695	147	210	596	322	535	2004	321	209	2004	147
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	580	755	160	228	648	350	582	2178	349	227	2178	160
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	580	755	160	228	648	350	582	2178	349	227	2178	160
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	580	755	160	228	648	350	582	2178	349	227	2178	160
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.87	0.87	0.90	0.89	0.83	0.90	0.87	0.87	0.90	0.88	0.88
Lanes:	2.00	2.48	0.52	2.00	3.00	1.00	2.00	3.45	0.55	2.00	3.73	0.27
Final Sat.:	3432	4087	864	3432	5083	1583	3432	5719	916	3432	6251	459
Capacity Analysis Module:												
Vol/Sat:	0.17	0.18	0.18	0.07	0.13	0.22	0.17	0.38	0.38	0.07	0.35	0.35
Crit Moves:	****					****	****				****	
Green/Cycle:	0.16	0.28	0.28	0.10	0.21	0.21	0.16	0.43	0.43	0.07	0.34	0.34
Volume/Cap:	1.03	0.66	0.66	0.66	0.59	1.03	1.03	0.89	0.89	0.89	1.03	1.03
Delay/Veh:	88.2	33.2	33.2	48.2	36.3	96.7	88.2	30.4	30.4	75.5	60.8	60.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.2	33.2	33.2	48.2	36.3	96.7	88.2	30.4	30.4	75.5	60.8	60.8
LOS by Move:	F	C	C	D	D	F	F	C	C	E	E	E
HCM2k95thQ:	662	445	445	173	295	621	502	784	784	300	1143	1143

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	1	0	2	0 3	0	1	2	0 3	1	0	2	0 3	1	0
Lane Group:	L	RT		RT	L	T		R	L	RT		RT	L	RT		RT
#LnsInGrps:	2	3		3	2	3		1	2	4		4	2	4		4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.97	0.97		xxxx	xxxx	0.85		xxxx	0.98	0.98		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.95	0.95		0.93	0.98	0.83		0.93	0.96	0.96		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	0.91		0.97	0.91	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.87	0.87		0.90	0.89	0.83		0.90	0.87	0.87		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.16	0.28	0.28		0.10	0.21	0.21		0.16	0.43	0.43		0.07	0.34	0.34	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.94	0.94		0.99	0.96	1.00		1.00	0.94	0.94		1.00	1.00	1.00	
Q1:		8.3	7.8	7.8		3.1	5.7	9.7		8.3	16.8	16.8		3.2	17.8	17.8
UpstreamVC:	0.00	0.00	0.00		0.63	0.63	0.63		0.90	0.90	0.90		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.73	0.73	0.73		0.31	0.31	0.31		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		0.19	0.31	0.28		0.11	0.19	0.19		1.00	1.00	1.00	
Q2:		6.7	1.8	1.8		0.4	0.4	4.3		2.7	1.4	1.4		3.0	10.3	10.3
HCM2KQueue:		15.0	9.6	9.6		3.5	6.1	14.0		11.0	18.3	18.3		6.2	28.1	28.1
70th%Factor:	1.17	1.18	1.18		1.19	1.19	1.17		1.18	1.16	1.16		1.19	1.15	1.15	
HCM2k70thQ:		17.6	11.3	11.3		4.1	7.3	16.4		12.9	21.2	21.2		7.4	32.3	32.3
85th%Factor:	1.48	1.52	1.52		1.57	1.54	1.49		1.51	1.46	1.46		1.54	1.42	1.42	
HCM2k85thQ:		22.3	14.6	14.6		5.4	9.5	20.8		16.6	26.7	26.7		9.6	39.9	39.9
90th%Factor:	1.59	1.65	1.65		1.74	1.69	1.60		1.63	1.56	1.56		1.69	1.50	1.50	
HCM2k90thQ:		23.9	15.8	15.8		6.0	10.4	22.3		17.9	28.5	28.5		10.6	42.1	42.1
95th%Factor:	1.76	1.85	1.85		1.99	1.93	1.78		1.83	1.72	1.72		1.92	1.63	1.63	
HCM2k95thQ:		26.5	17.8	17.8		6.9	11.8	24.8		20.1	31.3	31.3		12.0	45.7	45.7
98th%Factor:	2.01	2.18	2.18		2.47	2.32	2.04		2.13	1.95	1.95		2.32	1.81	1.81	
HCM2k98thQ:		30.3	20.9	20.9		8.6	14.2	28.5		23.4	35.5	35.5		14.5	51.1	51.1

Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #51 Eight Mile & Commercial DW #1

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[14.4]

Street Name:	Commercial Site Driveway #1						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 1			0 0 0 0 0			0 0 4 0 1			0 0 4 0 0		
Volume Module:PM Peak Hour												
Base Vol:	0	0	0	0	0	0	0	2184	0	0	2171	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	2184	0	0	2171	0
Added Vol:	0	0	4	0	0	0	0	174	25	0	195	0
Pass-By Vol:	0	0	31	0	0	0	0	-30	30	0	0	0
Initial Fut:	0	0	35	0	0	0	0	2328	55	0	2366	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	38	0	0	0	0	2530	60	0	2572	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	38	0	0	0	0	2530	60	0	2572	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	633	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	423	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	423	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.09	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	7.4	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	14.4	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	14.4			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #51 Eight Mile & Commercial DW #1

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:							#17			#22		
Dist(miles):							0.250			0.250		
Speed (mph):							1.00			1.00		
SignalIndex:							#8			#53		
Cycle Time:							100 secs			100 secs		
InitVolume:							211	1972		97	2269	
Saturation:							3432	5199		1769	6778	
ArrivalType:							4	4		4	4	
G/C:							0.09	0.36		0.10	0.81	
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:							0.113	0.481		0.137	1.076	
gq1:							5.45	19.69		4.73	-2.53	
gq2:							0.49	20.14		0.37	-2.04	
gq:							5.94	36.07		5.10	-4.58	
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:							0.350			0.350		
beta:							0.741			0.741		
ta (secs):							900.000			900.000		
F:							0.004			0.004		
f:							1.000	1.000		1.000	1.000	
vcmax:							86	743		38	-134	
vcg:							88	743		40	831	
vcmin:							3000	3000		3000	3000	
tp:							0.0	0.0		0.0	0.0	
p:							0.000			0.000		
*** Computation 3: Platoon Event Periods												
pdom/psubo:							0.000/0.000/Unconstrained					
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	3173	5102	633	3204	5162	643	0	xxxxx	xxxxx	0	xxxxx	xxxxx
AdjCnflVol:	3173	5102	633	3204	5162	643	0	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
ConflictVol:	3173	5102	633	3204	5162	643	0	xxxxx	xxxxx	0	xxxxx	xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	8	0	423	4	0	416	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
Potent Cap.:	8	0	423	4	0	416	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx

Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #52 Eight Mile & Commercial DW #2

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: C[15.8]

```
Street Name:   Commercial Site Driveway #2             Eight Mile Road
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  0    0  0  3  1  0    0  0  4  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:PM Peak Hour
Base Vol:       0    0     0     0    0     0     0 2184     0     0 2171     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0     0    0     0     0 2184     0     0 2171     0
Added Vol:      0    0    39     0    0     0     0  153    25     0  195     0
Pass-By Vol:    0    0    31     0    0     0     0  -30    30     0    0     0
Initial Fut:    0    0    70     0    0     0     0 2307    55     0 2366     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0    76     0    0     0     0 2508    60     0 2572     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0    76     0    0     0     0 2508    60     0 2572     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   657  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx   408  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx   408  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.19  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx  16.9  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx  15.8 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     C     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      15.8           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         C                *                *                *
```

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #52 Eight Mile & Commercial DW #2

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                                          #17              #22
Dist(miles):                                         0.250            0.250
Speed (mph):                                          1.00             1.00
SignalIndex:                                         #8               #53
Cycle Time:                                            100 secs         100 secs
InitVolume:                                        211  1972         97  2269
Saturation:                                       3432  5199       1769  6778
ArrivalType:                                         4     4          4     4
G/C:                                              0.09  0.36       0.10  0.81
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                                               0.113 0.481      0.137 1.076
gq1:                                              5.45 19.69       4.73 -2.53
gq2:                                              0.49 20.14       0.37 -2.04
gq:                                               5.94 36.07       5.10 -4.58
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                                               0.350            0.350
beta:                                                0.741            0.741
ta (secs):                                          900.000          900.000
F:                                                   0.004            0.004
f:                                               1.000 1.000      1.000 1.000
vcmax:                                              86   743         38  -134
vcg:                                                88   743         40   831
vcmin:                                            3000  3000       3000  3000
tp:                                                0.0   0.0        0.0   0.0
p:                                                   0.000            0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:                                         0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:3180  5109   657 3199  5139   643    0 xxxxx xxxxx    0 xxxxx xxxxx
AdjCnflVol: 3180  5109   657 3199  5139   643    0 xxxxx xxxxx    0 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
ConflictVol:3180  5109   657 3199  5139   643    0 xxxxx xxxxx    0 xxxxx xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap:    8     0   408    4     0   416 1622 xxxxx xxxxx 1622 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
Potent Cap.:   8     0   408    4     0   416 1622 xxxxx xxxxx 1622 xxxxx xxxxx
```

Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #53 Eight Mile Road & Road C

Cycle (sec):	100	Critical Vol./Cap.(X):	0.640
Loss Time (sec):	9	Average Delay (sec/veh):	11.6
Optimal Cycle:	45	Level Of Service:	B

Street Name:	Road C						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0
	0	0	4	0	1	1	0	4	0	0		
Volume Module:	PM Peak Hour											
Base Vol:	0	0	0	0	0	0	0	2184	0	0	2171	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	2184	0	0	2171	0
Added Vol:	97	0	96	0	0	0	0	140	51	234	98	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	97	0	96	0	0	0	0	2324	51	234	2269	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	105	0	104	0	0	0	0	2526	55	254	2466	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	105	0	104	0	0	0	0	2526	55	254	2466	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	105	0	104	0	0	0	0	2526	55	254	2466	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.89	0.83	0.93	0.89	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	4.00	1.00	1.00	4.00	0.00
Final Sat.:	1769	0	1583	0	0	0	0	6778	1583	1769	6778	0
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.07	0.00	0.00	0.00	0.00	0.37	0.04	0.14	0.36	0.00
Crit Moves:			****					****		****		
Green/Cycle:	0.10	0.00	0.10	0.00	0.00	0.00	0.00	0.58	0.58	0.22	0.81	0.00
Volume/Cap:	0.58	0.00	0.64	0.00	0.00	0.00	0.00	0.64	0.06	0.64	0.45	0.00
Delay/Veh:	47.4	0.0	51.4	0.0	0.0	0.0	0.0	14.3	9.1	38.6	3.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.4	0.0	51.4	0.0	0.0	0.0	0.0	14.3	9.1	38.6	3.0	0.0
LOS by Move:	D	A	D	A	A	A	A	B	A	D	A	A
HCM2k95thQ:	196	0	208	0	0	0	0	407	19	366	42	0

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #53 Eight Mile Road & Road C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	0 1	0	0	0	0 0	0	0	4	0 1	1	0	4	0 0
Lane Group:	L	xxxx		R	xxxx	xxxx	xxxx	xxxx		T		R	L		T	xxxx
#LnsInGrps:	1	0		1	0	0	0	0		4		1	1		4	0
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx				1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	1.00	1.00	1.00	1.00	xxxxx				
Hev Veh Adj:	0.98	xxxx	0.98	xxxx	xxxx	xxxxx	xxxx	0.98	0.98	0.98	0.98	xxxxx				
Grade Adj:	1.00	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	1.00	1.00	1.00	1.00	xxxxx				
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	1.00	xxxxx				
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	1.00	xxxxx				
Area Adj:	1.00	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	1.00	1.00	1.00	1.00	xxxxx				
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	xxxxx	xxxx	xxxx	0.85	xxxx	xxxx	xxxxx				
LT Adj:	0.95	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.95	xxxx	xxxxx				
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
HCM Sat Adj:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.98	0.83	0.93	0.98	1.00				
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00				
Fnl Sat Adj:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.89	0.83	0.93	0.89	1.00				
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00				

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #53 Eight Mile Road & Road C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.10	0.00	0.10	0.00	0.00	0.00	0.00	0.58	0.58	0.22	0.81	0.00
ArrivalType:	4				4				4				4			
ProgFactor:	0.98	1.00	0.98	1.00	1.00	1.00	1.00	0.67	0.54	0.96	0.00	1.00
Q1:	2.7	0.0	2.7	0.0	0.0	0.0	0.0	8.6	0.4	6.1	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.14	1.14	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.09	0.00	0.00	0.00
EarlyArrAdj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.07	0.06	1.00	1.00	0.00
Q2:	1.2	0.0	1.5	0.0	0.0	0.0	0.0	0.1	0.0	1.6	0.8	0.0
HCM2KQueue:	4.0	0.0	4.2	0.0	0.0	0.0	0.0	8.7	0.4	7.8	0.8	0.0
70th%Factor:	1.19	1.20	1.19	1.20	1.20	1.20	1.20	1.18	1.20	1.18	1.20	1.20
HCM2k70thQ:	4.7	0.0	5.0	0.0	0.0	0.0	0.0	10.3	0.4	9.2	1.0	0.0
85th%Factor:	1.56	1.60	1.56	1.60	1.60	1.60	1.60	1.52	1.60	1.53	1.59	1.60
HCM2k85thQ:	6.2	0.0	6.6	0.0	0.0	0.0	0.0	13.3	0.6	11.9	1.3	0.0
90th%Factor:	1.73	1.80	1.72	1.80	1.80	1.80	1.80	1.66	1.79	1.67	1.78	1.80
HCM2k90thQ:	6.8	0.0	7.3	0.0	0.0	0.0	0.0	14.4	0.7	13.0	1.5	0.0
95th%Factor:	1.98	2.10	1.97	2.10	2.10	2.10	2.10	1.87	2.09	1.89	2.07	2.10
HCM2k95thQ:	7.9	0.0	8.3	0.0	0.0	0.0	0.0	16.3	0.8	14.7	1.7	0.0
98th%Factor:	2.44	2.70	2.42	2.70	2.70	2.70	2.70	2.21	2.67	2.25	2.64	2.70
HCM2k98thQ:	9.7	0.0	10.2	0.0	0.0	0.0	0.0	19.2	1.0	17.4	2.2	0.0

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #54 West Lane & Commercial DW #3

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[13.4]

Street Name:	West Lane								Commercial Site Driveway #3							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	3	1 0	0	0	2	0 0	0	0	0	0 0	0	0	0	0 1
Volume Module:	PM Peak Hour															
Base Vol:	0	1786	0	0	1469	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1786	0	0	1469	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	83	33	0	125	0	0	0	0	0	0	0	0	0	0	28
Pass-By Vol:	0	-30	30	0	0	0	0	0	0	0	0	0	0	0	0	31
Initial Fut:	0	1839	63	0	1594	0	0	0	0	0	0	0	0	0	0	59
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	1999	68	0	1733	0	0	0	0	0	0	0	0	0	0	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	1999	68	0	1733	0	0	0	0	0	0	0	0	0	0	64
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	534
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	491
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	491
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.13
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	11.2
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	13.4
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	B
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			13.4		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #54 West Lane & Commercial DW #3

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                        #99
Dist(miles):                       0.250
Speed (mph):                        1.00
SignalIndex:                       #8
Cycle Time:                          100 secs
InitVolume:                    319   756
Saturation:                   3432  3538
ArrivalType:                     4     4
G/C:                           0.09  0.20
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                            0.118 0.272
gq1:                           8.20 15.55
gq2:                           1.16  6.19
gq:                            8.84 20.42
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                             0.400
beta:                              0.714
ta (secs):                        900.000
F:                                  0.004
f:                            1.000 1.000
vcmax:                          116   270
vcg:                            116   270
vcmin:                         2000  2000
tp:                             0.0   0.0
p:                                 0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 2232  3800   866 2899  3766   534
AdjCnflVol:    0 xxxxx xxxxx    0 xxxxx xxxxx 2232  3800   866 2899  3766   534
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 2232  3800   866 2899  3766   534
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1622 xxxxx xxxxx 1622 xxxxx xxxxx   23     4   296   12     4   491
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1622 xxxxx xxxxx 1622 xxxxx xxxxx   23     4   296   12     4   491
```


Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #55 West Lane & Commercial DW #4

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[12.5]

```
Street Name:            West Lane                Commercial Site Driveway #4
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  3  1  0    0  0  4  0  0    0  0  0  0  0    0  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:PM Peak Hour
Base Vol:       0 1786     0     0 1469     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0 1786     0     0 1469     0     0    0     0     0    0     0
Added Vol:      0  106    33     0  125     0     0    0     0     0    0    10
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0 1892    33     0 1594     0     0    0     0     0    0    10
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0 2057    36     0 1733     0     0    0     0     0    0    11
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0 2057    36     0 1733     0     0    0     0     0    0    11
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.9
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   532
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   492
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   492
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.02
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   1.7
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  12.5
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     B
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             12.5
ApproachLOS:         *                *                *                B
```

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #55 West Lane & Commercial DW #4

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			12 feet			12 feet			12 feet	
Time Period: 0.25 hour												

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #56 West Lane & Road A

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[13.3]

Street Name:	West Lane									Road A								
Approach:	North Bound					South Bound				East Bound					West Bound			
Movement:	L	T	R			L	T	R		L	T	R			L	T	R	
Control:	Uncontrolled					Uncontrolled				Stop Sign					Stop Sign			
Rights:	Include					Include				Include					Include			
Lanes:	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	1
Volume Module:PM Peak Hour																		
Base Vol:	0	1786	0		0	1469	0		0	0	0	0		0	0	0		0
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	0	1786	0		0	1469	0		0	0	0	0		0	0	0		0
Added Vol:	0	102	87		0	125	0		0	0	0	0		0	0	0		36
PasserByVol:	0	0	0		0	0	0		0	0	0	0		0	0	0		0
Initial Fut:	0	1888	87		0	1594	0		0	0	0	0		0	0	0		36
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	0.92		0.92	0.92	0.92		0.92
PHF Volume:	0	2052	95		0	1733	0		0	0	0	0		0	0	0		39
Reduct Vol:	0	0	0		0	0	0		0	0	0	0		0	0	0		0
FinalVolume:	0	2052	95		0	1733	0		0	0	0	0		0	0	0		39
Critical Gap Module:																		
Critical Gp:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx		xxxx	xxxxx	xxxx		6.9
FollowUpTim:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx		xxxx	xxxxx	xxxx		3.3
Capacity Module:																		
Cnflict Vol:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	xxxx		xxxx	xxxx			560
Potent Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	xxxx		xxxx	xxxx			471
Move Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	xxxx		xxxx	xxxx			471
Volume/Cap:	xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx	xxxx		xxxx	xxxx			0.08
Level Of Service Module:																		
2Way95thQ:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	xxxx		xxxx	xxxx			6.8
Control Del:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx		xxxx	xxxx			13.3
LOS by Move:	*	*	*		*	*	*		*	*	*	*		*	*			B
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT					LT - LTR - RT				
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	xxxx		xxxx	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx		xxxx	xxxxx			
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx		xxxx	xxxxx			
Shared LOS:	*	*	*		*	*	*		*	*	*	*		*	*			
ApproachDel:	xxxxxx				xxxxxx				xxxxxx					13.3				
ApproachLOS:	*				*				*					B				

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

```
Intersection #56 West Lane & Road A
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:       #106             #99
Dist(miles):      0.250            0.250
Speed (mph):       1.00             1.00
SignalIndex:      #16              #8
Cycle Time:         100 secs         100 secs
InitVolume:   196  1783        319   756
Saturation:  1769  6296       3432  3538
ArrivalType:    4     4          4     4
G/C:         0.29  0.53       0.09  0.20
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:          0.382 0.703      0.118 0.272
gq1:         6.85  8.42       8.20 15.55
gq2:         1.19  5.11       1.16  6.19
gq:          8.04 13.53       8.84 20.42
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:            0.350            0.350
beta:             0.741            0.741
ta (secs):       900.000           900.000
F:                0.004            0.004
f:          1.000 1.000      1.000 1.000
vcmax:         60   354        127   296
vcg:           77   666        127   296
vcmin:       3000  3000       3000  3000
tp:           0.0   0.0        0.0   0.0
p:                0.000            0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 2246  3879   433 2533  3832   560
AdjCnflVol:    0 xxxxx xxxxx    0 xxxxx xxxxx 2246  3879   433 2533  3832   560
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 2246  3879   433 2533  3832   560
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1622 xxxxx xxxxx 1622 xxxxx xxxxx   23     3   571   22     4   471
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1622 xxxxx xxxxx 1622 xxxxx xxxxx   23     3   571   22     4   471
```


Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

```
Intersection #57 Eight Mile & Hi Dens Res DW #1
Average Delay (sec/veh):      0.3       Worst Case Level Of Service: C[ 16.5]
Street Name:  High Density Resid Driveway #1          Eight Mile Road
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  0    0  0  3  1  0    0  0  4  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:PM Peak Hour
Base Vol:       0    0     0     0    0     0     0 2184     0     0 2171     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0     0    0     0     0 2184     0     0 2171     0
Added Vol:      0    0    82     0    0     0     0  233    21     0  261     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0    82     0    0     0     0 2417    21     0 2432     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0    89     0    0     0     0 2627    23     0 2643     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0    89     0    0     0     0 2627    23     0 2643     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   668  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx   401  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx   401  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.22  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx  21.0  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx  16.5 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     C     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      16.5           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         C                *                *                *
Note: Queue reported is the distance per lane in feet.
```

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #57 Eight Mile & Hi Dens Res DW #1

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #58 Eight Mile & Hi Dens Res DW #2

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: C[16.9]

Street Name: High Density Resid Driveway #2 Eight Mile Road

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	T	R			L	T	R			L	T	R			L	T	R		
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0
Volume Module:PM Peak Hour																				
Base Vol:	0	0	0	0	0	0	0	0	0	0	2184	0	0	2171	0					
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
Initial Bse:	0	0	0	0	0	0	0	0	0	0	2184	0	0	2171	0					
Added Vol:	0	0	82	0	0	0	0	0	0	0	294	21	0	261	0					
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
Initial Fut:	0	0	82	0	0	0	0	0	0	0	2478	21	0	2432	0					
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92					
PHF Volume:	0	0	89	0	0	0	0	0	0	0	2693	23	0	2643	0					
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
FinalVolume:	0	0	89	0	0	0	0	0	0	0	2693	23	0	2643	0					
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	685	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	391	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	391	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	0.23	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	21.7	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	16.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	C	*	*	*	*	*	*	*	*	*								
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT								
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	16.9			xxxxxx			xxxxxx			xxxxxx										
ApproachLOS:	C			*			*			*										

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #58 Eight Mile & Hi Dens Res DW #2

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			12 feet			12 feet			12 feet	
Time Period: 0.25 hour												

Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #60 Eight Mile & Industrial DW #1

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[12.2]

Street Name:	Industrial Site Driveway #2									Eight Mile Road								
Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	T	R				L	T	R				L	T	R				L	T	R			
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Rights:	Include						Include						Include						Include					
Lanes:	0	0	0	0	1		0	0	0	0	0		0	0	4	1	0		0	0	4	0	0	
Volume Module: PM Peak Hour																								
Base Vol:	0	0	0		0	0		0	0		0	0		2025	0		0	2066		0				
Growth Adj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00				
Initial Bse:	0	0	0		0	0		0	0		0	0		2025	0		0	2066		0				
Added Vol:	0	0	2		0	0		0	0		0	0		375	1		0	243		0				
PasserByVol:	0	0	0		0	0		0	0		0	0		0	0		0	0		0				
Initial Fut:	0	0	2		0	0		0	0		0	0		2400	1		0	2309		0				
User Adj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00				
PHF Adj:	0.92	0.92	0.92		0.92	0.92		0.92	0.92		0.92	0.92		0.92	0.92		0.92	0.92		0.92				
PHF Volume:	0	0	2		0	0		0	0		0	0		2609	1		0	2510		0				
Reduct Vol:	0	0	0		0	0		0	0		0	0		0	0		0	0		0				
FinalVolume:	0	0	2		0	0		0	0		0	0		2609	1		0	2510		0				
Critical Gap Module:																								
Critical Gp:	xxxxx	xxxx	6.9		xxxxx	xxxx		xxxxx	xxxxx		xxxx	xxxxx		xxxxx	xxxxx		xxxx	xxxxx						
FollowUpTim:	xxxxx	xxxx	3.3		xxxxx	xxxx		xxxxx	xxxxx		xxxx	xxxxx		xxxxx	xxxxx		xxxx	xxxxx						
Capacity Module:																								
Cnflict Vol:	xxxx	xxxx	522		xxxx	xxxx		xxxxx	xxxx		xxxx	xxxxx		xxxx	xxxx		xxxxx	xxxx						
Potent Cap.:	xxxx	xxxx	499		xxxx	xxxx		xxxxx	xxxx		xxxx	xxxxx		xxxx	xxxx		xxxxx	xxxx						
Move Cap.:	xxxx	xxxx	499		xxxx	xxxx		xxxxx	xxxx		xxxx	xxxxx		xxxx	xxxx		xxxxx	xxxx						
Volume/Cap:	xxxx	xxxx	0.00		xxxx	xxxx		xxxx	xxxx		xxxx	xxxx		xxxx	xxxx		xxxx	xxxx						
Level Of Service Module:																								
2Way95thQ:	xxxx	xxxx	0.3		xxxx	xxxx		xxxxx	xxxx		xxxx	xxxxx		xxxx	xxxx		xxxxx	xxxx						
Control Del:	xxxxx	xxxx	12.2		xxxxx	xxxx		xxxxx	xxxxx		xxxx	xxxxx		xxxxx	xxxxx		xxxx	xxxxx						
LOS by Move:	*	*	B		*	*		*	*		*	*		*	*		*	*						
Movement:	LT -	LTR -	RT		LT -	LTR -		RT	LT -		LTR -	RT		LT -	LTR -		RT	LT -		LTR -		RT		
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx		xxxxx	xxxx		xxxx	xxxxx		xxxx	xxxx		xxxxx	xxxx						
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx		xxxxx	xxxxx		xxxx	xxxxx		xxxxx	xxxxx		xxxx	xxxxx						
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx		xxxxx	xxxxx		xxxx	xxxxx		xxxxx	xxxxx		xxxx	xxxxx						
Shared LOS:	*	*	*		*	*		*	*		*	*		*	*		*	*						
ApproachDel:	12.2				xxxxxx				xxxxxx					xxxxxx										
ApproachLOS:	B				*				*					*										

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #60 Eight Mile & Industrial DW #1

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			12 feet			12 feet			12 feet	
Time Period: 0.25 hour												

Cumul + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #61 Eight Mile & Industrial DW #2

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[12.2]

Street Name:	Industrial Site Driveway #2						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 1			0 0 0 0 0			0 0 4 1 0			0 0 4 0 0		
Volume Module:PM Peak Hour												
Base Vol:	0	0	0	0	0	0	0	2025	0	0	2066	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	2025	0	0	2066	0
Added Vol:	0	0	2	0	0	0	0	377	1	0	243	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	2	0	0	0	0	2402	1	0	2309	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	2	0	0	0	0	2611	1	0	2510	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	2	0	0	0	0	2611	1	0	2510	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	523	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	499	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	499	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.3	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	12.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	12.2			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the distance per lane in feet.

Cumul + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #61 Eight Mile & Industrial DW #2

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	2%	2%	2%	2%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0
LaneWidth:	12 feet	12 feet	12 feet	12 feet

Pedestrian Walk Speed: 4.00 feet/sec
Time Period: 0.25 hour

Cumul + Project PM Pk Hr

Future Queue Length Report (feet)

Node	Intersection	Northbound L	Northbound -- T	Northbound -- R	Southbound L	Southbound -- T	Southbound -- R	Eastbound L	Eastbound -- T	Eastbound -- R	Westbound L	Westbound -- T	Westbound -- R
#3	[HCM2k95thQ]:	333	1034	389	1312	412	317	507	673	109	253	1428	1428
#4	[HCM2k95thQ]:	590	549	493	465	477	228	191	615	196	396	746	746
#5	[HCM2k95thQ]:	165	712	1064	835	314	120	376	1241	110	756	1441	1441
#6	[HCM2k95thQ]:	94	1011	1382	1898	240	22	248	1006	38	1624	372	1310
#7	[HCM2k95thQ]:	231	231	231	159	159	159	130	244	244	125	252	252
#8	[HCM2k95thQ]:	910	596	208	268	970	840	771	1485	1485	418	1177	1177
#9	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	101	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#10	[HCM2k95thQ]:	58	0	65	716	0	31	327	682	682	219	1015	1015
#11	[HCM2k95thQ]:	720	106	47	65	145	605	502	541	936	71	655	28
#12	[HCM2k95thQ]:	3	407	407	647	6	6	15	723	1	129	1002	1002
#13	[HCM2k95thQ]:	31	28	28	28	24	24	17	15	0	27	17	17
#16	[HCM2k95thQ]:	313	433	433	82	394	100	248	0	224	273	0	9
#17	[HCM2k95thQ]:	71	331	648	1060	174	37	187	926	26	738	1910	1910
#18	[HCM2k95thQ]:	421	544	239	170	573	102	135	250	497	350	207	152
#19	[HCM2k95thQ]:	331	333	192	219	306	171	273	374	214	309	308	130
#22	[HCM2k95thQ]:	8	120	202	379	41	41	51	234	234	135	245	437
#24	[HCM2k95thQ]:	454	508	508	80	842	842	88	571	571	281	61	61
#25	[HCM2k95thQ]:	290	838	838	194	810	810	535	327	327	177	445	445
#26	[HCM2k95thQ]:	211	1399	1141	938	440	116	449	588	159	444	309	1340
#27	[HCM2k95thQ]:	662	445	445	173	295	621	502	784	784	300	1143	1143
#51	[2Way95thQ]:	xxxx	xxxx	7.4	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#52	[2Way95thQ]:	xxxx	xxxx	16.9	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#53	[HCM2k95thQ]:	196	0	208	0	0	0	0	407	19	366	42	0
#54	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	11.2
#55	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	1.7
#56	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	6.8
#57	[2Way95thQ]:	xxxx	xxxx	21.0	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#58	[2Way95thQ]:	xxxx	xxxx	21.7	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#60	[2Way95thQ]:	xxxx	xxxx	0.3	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#61	[2Way95thQ]:	xxxx	xxxx	0.3	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Cumul + Reduce Dens Alt AM Pk Hr

Scenario Report

Scenario:	Cumul + Red Dens Alt AM
Command:	Cumul + Red Dens Alt AM
Volume:	Cumul Proj AM
Geometry:	Cumul Proj
Impact Fee:	Default Impact Fee
Trip Generation:	AM Pk Hr
Trip Distribution:	Cumul No Bridge AM
Paths:	Cumul Proj
Routes:	Default Route
Configuration:	Default Configuration

Cumul + Reduce Dens Alt AM Pk Hr

Trip Generation Report

Forecast for AM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	725.00	ElemSchStudent	0.25	0.20	181	145	326	29.5
1	Village West	0.00	Tra Vigne SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	0.60	0.36	0	0	0	0.0
1	Village West	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
1	Village West	701.00	Red Dens SFDU	0.18	0.53	126	372	498	45.1
1	Village West	0.00	GP Alt MFDU	0.10	0.41	0	0	0	0.0
1	Village West	0.00	Tra V Internal	-6.00	-6.00	0	0	0	0.0
1	Village West	0.00	GP Alt Interna	-7.00	-7.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-11.00	-7.00	0	0	0	0.0
	Zone 1 Subtotal					307	517	824	74.6
2	Village East	0.00	Tra Vigne SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
2	Village East	396.00	Red Dens SFDU	0.18	0.53	71	210	281	25.4
	Zone 2 Subtotal					71	210	281	25.4
TOTAL						378	727	1105	100.0

Cumul + Reduce Dens Alt AM Pk Hr

Trip Distribution Report

Percent Of Trips Cumul No Bridge AM

Zone	To Gates 1	2	3	4	5	6	7	8	9	10	11
1	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	1.0
2	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	1.0

Zone	To Gates 14	15	16	18	19	20	21	22	23	24	25
1	1.0	2.0	5.0	2.0	26.0	9.0	1.0	2.0	12.0	4.0	2.0
2	1.0	2.0	5.0	2.0	26.0	9.0	1.0	2.0	12.0	4.0	2.0

Zone	To Gates 26
1	2.0
2	2.0

Cumul + Reduce Dens Alt AM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	D	36.3	0.824	D	36.9	0.839	+ 0.524 D/V
# 4 Eight Mile Rd & Davis Rd	C	32.7	0.674	C	32.8	0.684	+ 0.059 D/V
# 5 Eight Mile & Lower Sacto Rd	D	35.7	0.842	D	37.4	0.880	+ 1.679 D/V
# 6 West Lane & Armstrong Road	E	70.6	1.106	E	70.5	1.106	-0.131 D/V
# 7 West Lane & Ham Lane	B	11.7	0.385	B	11.8	0.401	+ 0.178 D/V
# 8 Eight Mile Rd & West Ln	D	42.6	0.916	D	48.2	0.968	+ 5.559 D/V
# 9 Eight Mile Road & Ham Lane	C	21.8	0.594	C	22.0	0.648	+ 0.223 D/V
# 10 Eight Mile & Leach Rd/St J	A	1.0	0.323	A	6.7	0.393	+ 5.718 D/V
# 11 Eight Mile & MickeGrove/Holman	C	29.0	0.667	C	30.0	0.757	+ 0.961 D/V
# 12 Eight Mile & SR 99 W Frontage	C	25.5	0.648	C	25.4	0.661	-0.015 D/V
# 13 Eight Mile & SR 99 E Frontage	A	3.9	0.172	A	4.7	0.179	+ 0.807 D/V
# 17 Holman & Lt Col Mark Taylor	D	41.6	0.848	D	41.5	0.848	-0.076 D/V
# 18 Morada Lane & West Lane	C	33.0	0.762	C	33.8	0.797	+ 0.778 D/V
# 19 Morada Lane & Holman Road	C	33.4	0.516	C	33.4	0.528	+ 0.015 D/V
# 22 Morada Ln & SR99 W Frontage Rd	C	24.3	0.412	C	24.3	0.412	-0.048 D/V
# 24 West Ln & West Ln Frontage Rd	C	25.0	0.739	C	24.8	0.774	-0.131 D/V
# 25 West Lane & Knickerbocker Dr	C	24.1	0.708	C	23.8	0.743	-0.230 D/V
# 26 West Lane & Hammer Lane	C	34.6	0.793	C	34.5	0.793	-0.057 D/V
# 27 Hammer Lane & Holman Road	C	33.6	0.768	C	33.6	0.768	+ 0.004 D/V

Cumul + Reduce Dens Alt AM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

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Intersection #3 Eight Mile Rd & Thornton Rd

****

Cycle (sec):	100	Critical Vol./Cap.(X):	0.839
Loss Time (sec):	12	Average Delay (sec/veh):	36.9
Optimal Cycle:	87	Level Of Service:	D

****

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	AM Peak Hour											
Base Vol:	125	350	114	445	600	207	241	1353	106	236	1406	228
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	125	350	114	445	600	207	241	1353	106	236	1406	228
Added Vol:	0	0	4	8	0	0	0	19	0	7	36	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	125	350	118	453	600	207	241	1372	106	243	1442	243
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	136	380	128	492	652	225	262	1491	115	264	1567	264
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	136	380	128	492	652	225	262	1491	115	264	1567	264
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	136	380	128	492	652	225	262	1491	115	264	1567	264
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	3.42	0.58
Final Sat.:	1769	3538	1583	1769	3538	1583	3432	6778	1583	3432	5673	956
Capacity Analysis Module:												
Vol/Sat:	0.08	0.11	0.08	0.28	0.18	0.14	0.08	0.22	0.07	0.08	0.28	0.28
Crit Moves:		****		****			****				****	
Green/Cycle:	0.14	0.13	0.13	0.33	0.32	0.32	0.09	0.31	0.31	0.11	0.33	0.33
Volume/Cap:	0.57	0.84	0.63	0.84	0.57	0.44	0.84	0.71	0.23	0.71	0.84	0.84
Delay/Veh:	43.7	55.6	47.7	41.3	28.6	27.2	62.7	31.5	25.8	49.1	34.2	34.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.7	55.6	47.7	41.3	28.6	27.2	62.7	31.5	25.8	49.1	34.2	34.2
LOS by Move:	D	E	D	D	C	C	E	C	C	D	C	C
HCM2k95thQ:	228	400	235	701	396	251	212	468	110	201	631	631

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Note: Queue reported is the distance per lane in feet.

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Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	2	0 1	1	0	2	0 1	2	0	4	0 1	2	0	3	1 0
Lane Group:	L		T	R	L		T	R	L		T	R	L		RT	RT
#LnsInGrps:	1		2	1	1		2	1	2		4	1	2		4	4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.98	0.98	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.96	0.96	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.90	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.14	0.13	0.13		0.33	0.32	0.32		0.09	0.31	0.31		0.11	0.33	0.33	
ArrivalType:		4				4				4				4		
ProgFactor:	0.97	0.99	0.98		0.96	0.91	0.89		0.99	0.94	0.87		0.99	0.96	0.96	
Q1:	3.4	5.4	3.3		12.1	7.2	4.4		3.7	9.4	2.1		3.6	12.4	12.4	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.74	0.74	0.74		0.62	0.62	0.62	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.60	0.60	0.60		0.75	0.75	0.75	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.15	0.32	0.29		0.21	0.41	0.41	
Q2:	1.2	3.2	1.5		3.9	1.3	0.8		0.6	0.7	0.1		0.5	1.8	1.8	
HCM2KQueue:	4.6	8.5	4.8		16.1	8.4	5.1		4.3	10.2	2.2		4.1	14.3	14.3	
70th%Factor:	1.19	1.18	1.19		1.17	1.18	1.19		1.19	1.18	1.19		1.19	1.17	1.17	
HCM2k70thQ:	5.5	10.1	5.7		18.7	10.0	6.1		5.1	12.0	2.6		4.8	16.7	16.7	
85th%Factor:	1.56	1.53	1.56		1.48	1.53	1.55		1.56	1.51	1.58		1.56	1.49	1.49	
HCM2k85thQ:	7.2	13.0	7.5		23.7	12.9	8.0		6.7	15.4	3.4		6.4	21.2	21.2	
90th%Factor:	1.72	1.66	1.71		1.58	1.66	1.71		1.72	1.64	1.76		1.73	1.60	1.60	
HCM2k90thQ:	8.0	14.2	8.2		25.3	14.0	8.8		7.4	16.7	3.8		7.0	22.8	22.8	
95th%Factor:	1.96	1.87	1.96		1.75	1.88	1.95		1.97	1.84	2.03		1.98	1.77	1.77	
HCM2k95thQ:	9.1	16.0	9.4		28.0	15.8	10.0		8.5	18.7	4.4		8.0	25.3	25.3	
98th%Factor:	2.40	2.22	2.39		1.99	2.22	2.37		2.42	2.16	2.55		2.43	2.03	2.03	
HCM2k98thQ:	11.2	18.9	11.5		32.0	18.8	12.2		10.4	21.9	5.5		9.9	29.0	29.0	

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.684
Loss Time (sec):	12	Average Delay (sec/veh):	32.8
Optimal Cycle:	57	Level Of Service:	C

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	AM Peak Hour											
Base Vol:	212	292	146	210	521	129	150	1297	186	298	1273	102
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	212	292	146	210	521	129	150	1297	186	298	1273	102
Added Vol:	0	0	8	4	0	0	0	30	0	15	58	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	212	292	154	214	521	129	150	1327	186	313	1331	109
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	230	317	167	233	566	140	163	1442	202	340	1447	118
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	230	317	167	233	566	140	163	1442	202	340	1447	118
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	230	317	167	233	566	140	163	1442	202	340	1447	118
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.88	0.88
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	3.70	0.30
Final Sat.:	1769	3538	1583	1769	3538	1583	3432	6778	1583	3432	6196	507
Capacity Analysis Module:												
Vol/Sat:	0.13	0.09	0.11	0.13	0.16	0.09	0.05	0.21	0.13	0.10	0.23	0.23
Crit Moves:	****				****			****		****		
Green/Cycle:	0.19	0.19	0.19	0.24	0.23	0.23	0.08	0.31	0.31	0.14	0.38	0.38
Volume/Cap:	0.68	0.47	0.56	0.56	0.68	0.38	0.62	0.68	0.41	0.68	0.62	0.62
Delay/Veh:	43.4	36.7	39.1	35.4	37.3	32.9	49.1	31.1	27.8	44.5	25.6	25.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.4	36.7	39.1	35.4	37.3	32.9	49.1	31.1	27.8	44.5	25.6	25.6
LOS by Move:	D	D	D	D	D	C	D	C	C	D	C	C
HCM2k95thQ:	363	236	255	315	427	181	124	449	206	306	466	466

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L - T - R				L - T - R				L - T - R				L - T - R			
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	2 0	1		1 0	2 0	1		2 0	4 0	1		2 0	3 1	0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	2	1		1	2	1		2	4	1		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12				
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.90	0.89	0.83		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.19	0.19	0.19	0.24	0.23	0.23	0.08	0.31	0.31	0.14	0.38	0.38
ArrivalType:		4			4			4			4	
ProgFactor:	0.97	0.95	0.96	0.95	0.96	0.93	0.99	0.93	0.89	0.98	0.89	0.89
Q1:	5.8	3.9	4.0	5.4	7.2	3.0	2.2	9.0	4.0	4.5	8.6	8.6
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.71	0.71	0.71	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.64	0.64	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.14	0.34	0.31	1.00	1.00	1.00
Q2:	1.9	0.9	1.2	1.2	1.9	0.6	0.2	0.7	0.2	1.8	1.5	1.5
HCM2KQueue:	7.7	4.8	5.2	6.6	9.2	3.6	2.5	9.7	4.2	6.4	10.1	10.1
70th%Factor:	1.18	1.19	1.19	1.18	1.18	1.19	1.19	1.18	1.19	1.19	1.18	1.18
HCM2k70thQ:	9.1	5.7	6.2	7.8	10.8	4.3	2.9	11.4	5.0	7.5	11.9	11.9
85th%Factor:	1.53	1.56	1.55	1.54	1.52	1.57	1.58	1.52	1.56	1.54	1.51	1.51
HCM2k85thQ:	11.8	7.5	8.1	10.1	14.0	5.7	3.9	14.7	6.5	9.8	15.3	15.3
90th%Factor:	1.67	1.71	1.71	1.69	1.65	1.73	1.75	1.65	1.72	1.69	1.64	1.64
HCM2k90thQ:	12.8	8.2	8.9	11.1	15.2	6.3	4.3	16.0	7.2	10.8	16.6	16.6
95th%Factor:	1.89	1.96	1.95	1.92	1.86	1.99	2.02	1.85	1.98	1.92	1.84	1.84
HCM2k95thQ:	14.5	9.4	10.2	12.6	17.1	7.2	5.0	18.0	8.3	12.2	18.6	18.6
98th%Factor:	2.25	2.39	2.37	2.30	2.19	2.46	2.53	2.17	2.43	2.31	2.16	2.16
HCM2k98thQ:	17.3	11.5	12.4	15.2	20.2	8.9	6.2	21.1	10.1	14.7	21.9	21.9

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.880
Loss Time (sec):	12	Average Delay (sec/veh):	37.4
Optimal Cycle:	101	Level Of Service:	D

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	AM Peak Hour											
Base Vol:	115	394	261	543	611	101	125	1432	93	504	1440	286
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	115	394	261	543	611	101	125	1432	93	504	1440	286
Added Vol:	0	0	19	8	0	0	0	42	0	36	80	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	115	394	280	551	611	101	125	1474	93	540	1520	301
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	125	428	304	599	664	110	136	1602	101	587	1652	327
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	125	428	304	599	664	110	136	1602	101	587	1652	327
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	125	428	304	599	664	110	136	1602	101	587	1652	327
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.87	0.87
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	4.00	1.00	2.00	3.34	0.66
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	6778	1583	3432	5516	1092
Capacity Analysis Module:												
Vol/Sat:	0.04	0.12	0.19	0.17	0.19	0.07	0.04	0.24	0.06	0.17	0.30	0.30
Crit Moves:			****	****				****		****		
Green/Cycle:	0.07	0.22	0.22	0.20	0.35	0.35	0.05	0.27	0.27	0.19	0.41	0.41
Volume/Cap:	0.54	0.55	0.88	0.88	0.54	0.20	0.73	0.88	0.24	0.88	0.73	0.73
Delay/Veh:	47.6	35.6	59.7	51.6	26.5	22.9	60.5	40.3	28.9	52.0	26.0	26.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.6	35.6	59.7	51.6	26.5	22.9	60.5	40.3	28.9	52.0	26.0	26.0
LOS by Move:	D	D	E	D	C	C	E	D	C	D	C	C
HCM2k95thQ:	137	310	548	556	379	104	182	699	116	549	618	618

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	0 1		2	0 2	0 1		2	0 4	0 1		2	0 3	1 0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	2	2	1		2	2	1		2	4	1		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.98	0.98	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.96	0.96	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.07	0.22	0.22		0.20	0.35	0.35		0.05	0.27	0.27		0.19	0.41	0.41	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.95	0.98		0.99	0.89	0.84		0.99	0.98	0.90		0.99	0.90	0.90	
Q1:	1.7	5.3	8.1		8.2	6.9	1.8		1.9	11.5	2.0		8.1	11.4	11.4	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	1.0	1.2	4.1		4.1	1.1	0.2		1.8	4.6	0.3		4.1	2.5	2.5	
HCM2KQueue:	2.7	6.5	12.2		12.3	8.1	2.0		3.7	16.0	2.3		12.2	13.9	13.9	
70th%Factor:	1.19	1.19	1.17		1.17	1.18	1.20		1.19	1.17	1.19		1.17	1.17	1.17	
HCM2k70thQ:	3.3	7.7	14.3		14.5	9.5	2.4		4.4	18.7	2.7		14.3	16.3	16.3	
85th%Factor:	1.57	1.54	1.50		1.50	1.53	1.58		1.57	1.48	1.58		1.50	1.49	1.49	
HCM2k85thQ:	4.3	10.0	18.2		18.5	12.3	3.2		5.7	23.6	3.6		18.2	20.7	20.7	
90th%Factor:	1.75	1.69	1.62		1.62	1.67	1.76		1.73	1.58	1.76		1.62	1.60	1.60	
HCM2k90thQ:	4.8	10.9	19.7		19.9	13.4	3.6		6.4	25.3	4.0		19.7	22.3	22.3	
95th%Factor:	2.02	1.92	1.81		1.80	1.88	2.04		1.99	1.75	2.03		1.81	1.78	1.78	
HCM2k95thQ:	5.5	12.4	21.9		22.2	15.2	4.2		7.3	28.0	4.6		21.9	24.7	24.7	
98th%Factor:	2.51	2.31	2.09		2.09	2.24	2.55		2.45	1.99	2.54		2.09	2.04	2.04	
HCM2k98thQ:	6.8	14.9	25.4		25.7	18.0	5.2		9.0	31.9	5.8		25.4	28.4	28.4	

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec):	100	Critical Vol./Cap.(X):	1.106
Loss Time (sec):	12	Average Delay (sec/veh):	70.5
Optimal Cycle:	180	Level Of Service:	E

Street Name:	West Lane								Armstrong Road			
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 2	0 1		1	0 2	0 1		1	0 2	0 1		1	0 2	0 1	
Volume Module:AM Peak Hour																
Base Vol:	29	371	257		587	528	28		37	442	23		488	451	332	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	29	371	257		587	528	28		37	442	23		488	451	332	
Added Vol:	0	51	0		0	26	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	29	422	257		587	554	28		37	442	23		488	451	332	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	32	459	279		638	602	30		40	480	25		530	490	361	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	32	459	279		638	602	30		40	480	25		530	490	361	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	32	459	279		638	602	30		40	480	25		530	490	361	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Lanes:	1.00	2.00	1.00		1.00	2.00	1.00		1.00	2.00	1.00		1.00	2.00	1.00	
Final Sat.:	1769	3538	1583		1769	3538	1583		1769	3538	1583		1769	3538	1583	
Capacity Analysis Module:																
Vol/Sat:	0.02	0.13	0.18		0.36	0.17	0.02		0.02	0.14	0.02		0.30	0.14	0.23	
Crit Moves:			****		****					****			****			
Green/Cycle:	0.05	0.16	0.16		0.33	0.44	0.44		0.04	0.12	0.12		0.27	0.36	0.36	
Volume/Cap:	0.39	0.81	1.11		1.11	0.39	0.04		0.64	1.11	0.13		1.11	0.39	0.64	
Delay/Veh:	49.4	49.3	129.9		103.4	19.1	16.0		67.1	119	39.4		109.5	24.1	29.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	49.4	49.3	129.9		103.4	19.1	16.0		67.1	119	39.4		109.5	24.1	29.1	
LOS by Move:	D	D	F		F	B	B		E	F	D		F	C	C	
HCM2k95thQ:	73	436	682		1254	260	21		118	635	38		1090	254	426	

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 2	0 1		1	0 2	0 1		1	0 2	0 1		1	0 2	0 1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	2	1		1	2	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.05	0.16	0.16	0.33	0.44	0.44	0.04	0.12	0.12	0.27	0.36	0.36
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.99	1.00	1.00	0.79	0.74	1.00	1.00	0.96	1.00	0.86	0.90
Q1:	0.8	6.4	7.8	17.7	4.7	0.4	1.1	7.0	0.6	14.7	4.6	7.5
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.6	3.0	7.8	13.5	0.6	0.0	1.2	7.3	0.1	11.9	0.6	1.6
HCM2KQueue:	1.4	9.4	15.6	31.2	5.3	0.4	2.3	14.4	0.7	26.6	5.2	9.2
70th%Factor:	1.20	1.18	1.17	1.15	1.19	1.20	1.19	1.17	1.20	1.15	1.19	1.18
HCM2k70thQ:	1.7	11.1	18.2	35.8	6.3	0.5	2.8	16.8	0.9	30.7	6.2	10.8
85th%Factor:	1.59	1.52	1.48	1.41	1.55	1.60	1.58	1.49	1.59	1.42	1.55	1.52
HCM2k85thQ:	2.3	14.3	23.0	43.9	8.3	0.6	3.7	21.3	1.2	37.9	8.1	13.9
90th%Factor:	1.77	1.65	1.58	1.48	1.71	1.79	1.76	1.60	1.79	1.51	1.71	1.65
HCM2k90thQ:	2.5	15.5	24.7	46.4	9.1	0.7	4.1	22.9	1.3	40.1	8.9	15.2
95th%Factor:	2.05	1.86	1.75	1.61	1.95	2.09	2.03	1.77	2.08	1.64	1.95	1.86
HCM2k95thQ:	2.9	17.4	27.3	50.2	10.4	0.8	4.7	25.4	1.5	43.6	10.2	17.1
98th%Factor:	2.60	2.19	2.00	1.79	2.36	2.67	2.54	2.03	2.64	1.83	2.37	2.19
HCM2k98thQ:	3.7	20.5	31.2	55.9	12.6	1.1	5.9	29.2	2.0	48.7	12.4	20.1

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.401
Loss Time (sec):	9	Average Delay (sec/veh):	11.8
Optimal Cycle:	29	Level Of Service:	B

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0	1	1	0
Volume Module:	AM Peak Hour											
Base Vol:	32	13	19	42	28	30	32	791	30	42	791	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	32	13	19	42	28	30	32	791	30	42	791	19
Added Vol:	0	0	15	0	0	0	0	36	0	7	20	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	32	13	34	42	28	30	32	827	30	49	811	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	35	14	37	46	30	33	35	899	33	53	882	21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	14	37	46	30	33	35	899	33	53	882	21
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	35	14	37	46	30	33	35	899	33	53	882	21
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	0.81	0.81	0.81	0.81	0.93	0.93	0.93	0.93	0.93	0.93
Lanes:	0.41	0.16	0.43	0.42	0.28	0.30	1.00	1.93	0.07	1.00	1.95	0.05
Final Sat.:	621	252	660	647	431	462	1769	3397	123	1769	3446	81
Capacity Analysis Module:												
Vol/Sat:	0.06	0.06	0.06	0.07	0.07	0.07	0.02	0.26	0.26	0.03	0.26	0.26
Crit Moves:					****			****		****		
Green/Cycle:	0.18	0.18	0.18	0.18	0.18	0.18	0.05	0.66	0.66	0.08	0.68	0.68
Volume/Cap:	0.32	0.32	0.32	0.40	0.40	0.40	0.38	0.40	0.40	0.40	0.38	0.38
Delay/Veh:	36.7	36.7	36.7	37.5	37.5	37.5	48.3	8.0	8.0	46.1	6.9	6.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.7	36.7	36.7	37.5	37.5	37.5	48.3	8.0	8.0	46.1	6.9	6.9
LOS by Move:	D	D	D	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	123	123	123	160	160	160	76	161	161	103	122	122

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	0	0	1!	0	0	0	0	1!	0	0	1	0	1	1	0	1
Lane Group:	LTR	LTR	LTR		LTR	LTR	LTR		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	2	2		1	2	2	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	5	5	5		5	5	5		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	1.00	1.00	1.00		1.00	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	1.00	1.00	1.00		1.00	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	0.94	0.94	0.94		0.96	0.96	0.96		xxxx	1.00	1.00		xxxx	1.00	1.00	
LT Adj:	0.87	0.87	0.87		0.86	0.86	0.86		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.81	0.81	0.81		0.81	0.81	0.81		0.93	0.98	0.98		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	0.95		1.00	0.95	0.95	
Fnl Sat Adj:	0.81	0.81	0.81		0.81	0.81	0.81		0.93	0.93	0.93		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	100	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	16.57	16.57	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	17.57	17.57	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	17.57	17.57	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	1	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	1	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	35	46	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	0.41	0.42	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	0.42	0.41	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	0.97	1.27	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	109	86	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	3.03	2.39	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	1.33	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	3.00	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	4.14	3.11	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	0.77	0.77	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	5.66	4.23	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	11.91	13.34	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	0.76	0.56	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	0.58	0.60	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	1.56	1.53	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	1.00	1.00	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	0.16	0.16	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	0.87	0.86	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	0.87	0.86	xxxxxx	xxxxxx

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.18	0.18	0.18	0.18	0.18	0.18	0.05	0.66	0.66	0.08	0.68	0.68
ArrivalType:		4			4			4			4	
ProgFactor:	0.95	0.95	0.95	0.95	0.95	0.95	0.99	0.40	0.40	0.98	0.32	0.32
Q1:	2.0	2.0	2.0	2.6	2.6	2.6	0.9	2.6	2.6	1.4	1.8	1.8
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.6	0.6	0.6
HCM2KQueue:	2.4	2.4	2.4	3.2	3.2	3.2	1.5	3.2	3.2	2.0	2.4	2.4
70th%Factor:	1.19	1.19	1.19	1.19	1.19	1.19	1.20	1.19	1.19	1.20	1.19	1.19
HCM2k70thQ:	2.9	2.9	2.9	3.8	3.8	3.8	1.8	3.8	3.8	2.4	2.9	2.9
85th%Factor:	1.58	1.58	1.58	1.57	1.57	1.57	1.59	1.57	1.57	1.58	1.58	1.58
HCM2k85thQ:	3.8	3.8	3.8	5.0	5.0	5.0	2.3	5.0	5.0	3.2	3.8	3.8
90th%Factor:	1.75	1.75	1.75	1.74	1.74	1.74	1.77	1.74	1.74	1.76	1.75	1.75
HCM2k90thQ:	4.3	4.3	4.3	5.6	5.6	5.6	2.6	5.6	5.6	3.6	4.2	4.2
95th%Factor:	2.02	2.02	2.02	2.00	2.00	2.00	2.05	2.00	2.00	2.04	2.02	2.02
HCM2k95thQ:	4.9	4.9	4.9	6.4	6.4	6.4	3.0	6.4	6.4	4.1	4.9	4.9
98th%Factor:	2.53	2.53	2.53	2.48	2.48	2.48	2.59	2.48	2.48	2.56	2.53	2.53
HCM2k98thQ:	6.2	6.2	6.2	7.9	7.9	7.9	3.8	8.0	8.0	5.2	6.1	6.1

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.968
Loss Time (sec): 12 Average Delay (sec/veh): 48.2
Optimal Cycle: 154 Level Of Service: D

Street Name:	West Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	3 1	0	2 0	3 1	0
Volume Module:	AM Peak Hour											
Base Vol:	465	336	59	129	751	427	442	1345	455	137	1344	56
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	465	336	59	129	751	427	442	1345	455	137	1344	56
Added Vol:	56	14	62	12	7	0	0	37	31	81	75	23
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	521	350	121	141	758	427	442	1382	486	218	1419	79
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	566	380	132	153	824	464	480	1502	528	237	1542	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	566	380	132	153	824	464	480	1502	528	237	1542	86
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	566	380	132	153	824	464	480	1502	528	237	1542	86
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.86	0.86	0.90	0.88	0.88
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.79	0.21
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	4885	1628	3432	6369	355
Capacity Analysis Module:												
Vol/Sat:	0.17	0.11	0.08	0.04	0.23	0.29	0.14	0.31	0.32	0.07	0.24	0.24
Crit Moves:	****					****			****	****		
Green/Cycle:	0.17	0.33	0.33	0.14	0.30	0.30	0.15	0.34	0.34	0.07	0.26	0.26
Volume/Cap:	0.97	0.32	0.25	0.32	0.77	0.97	0.94	0.92	0.97	0.97	0.94	0.94
Delay/Veh:	70.4	25.0	24.4	39.2	35.1	67.2	67.7	38.6	45.7	94.7	47.0	47.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	70.4	25.0	24.4	39.2	35.1	67.2	67.7	38.6	45.7	94.7	47.0	47.0
LOS by Move:	E	C	C	D	D	E	E	D	D	F	D	D
HCM2k95thQ:	503	191	123	120	592	824	520	852	963	239	681	681

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	3	1	0	2
Lane Group:	L	T	R		L	T	R		L	RT	RT		L	RT	RT	
#LnsInGrps:	2	2	1		2	2	1		2	4	4		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.96	0.96		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.94	0.94		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.86	0.86		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.17	0.33	0.33		0.14	0.30	0.30		0.15	0.34	0.34		0.07	0.26	0.26	
ArrivalType:	4				4				4				4			
ProgFactor:	1.00	0.87	0.86		0.96	0.95	0.99		1.00	0.98	0.99		1.00	0.99	0.99	
Q1:	8.0	3.6	2.3		1.9	10.4	12.6		6.8	14.3	15.7		3.4	12.0	12.0	
UpstreamVC:	0.32	0.32	0.32		0.00	0.00	0.00		0.00	0.00	0.00		0.38	0.38	0.38	
UpstreamAdj:	0.96	0.96	0.96		0.00	0.00	0.00		0.00	0.00	0.00		0.93	0.93	0.93	
EarlyArrAdj:	0.34	0.53	0.48		1.00	1.00	1.00		1.00	1.00	1.00		0.20	0.44	0.44	
Q2:	3.0	0.2	0.2		0.5	2.8	6.7		4.7	5.8	7.4		1.5	3.5	3.5	
HCM2KQueue:	11.0	3.8	2.4		2.4	13.2	19.3		11.4	20.1	23.1		4.9	15.5	15.5	
70th%Factor:	1.18	1.19	1.19		1.19	1.17	1.16		1.18	1.16	1.16		1.19	1.17	1.17	
HCM2k70thQ:	12.9	4.6	2.9		2.8	15.5	22.5		13.4	23.3	26.7		5.8	18.1	18.1	
85th%Factor:	1.51	1.56	1.58		1.58	1.49	1.46		1.50	1.45	1.44		1.55	1.48	1.48	
HCM2k85thQ:	16.6	6.0	3.8		3.7	19.8	28.2		17.2	29.2	33.3		7.6	23.0	23.0	
90th%Factor:	1.63	1.73	1.75		1.76	1.61	1.55		1.63	1.55	1.53		1.71	1.58	1.58	
HCM2k90thQ:	18.0	6.7	4.3		4.2	21.3	30.0		18.6	31.1	35.3		8.4	24.6	24.6	
95th%Factor:	1.83	1.98	2.02		2.03	1.79	1.70		1.82	1.70	1.67		1.96	1.75	1.75	
HCM2k95thQ:	20.1	7.6	4.9		4.8	23.7	33.0		20.8	34.1	38.5		9.6	27.2	27.2	
98th%Factor:	2.13	2.44	2.53		2.53	2.06	1.93		2.11	1.91	1.87		2.39	2.00	2.00	
HCM2k98thQ:	23.4	9.4	6.2		6.0	27.3	37.2		24.2	38.4	43.2		11.7	31.1	31.1	

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.648
Loss Time (sec):	9	Average Delay (sec/veh):	22.0
Optimal Cycle:	45	Level Of Service:	C

Street Name:	Ham Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	0	0	1	0	0	0	1	1	0
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	407	0	73	92	1369	0	0	1460	231
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	407	0	73	92	1369	0	0	1460	231
Added Vol:	0	0	0	5	0	21	36	166	0	0	149	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	412	0	94	128	1535	0	0	1609	246
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	448	0	102	139	1668	0	0	1749	267
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	448	0	102	139	1668	0	0	1749	267
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	448	0	102	139	1668	0	0	1749	267
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.93	1.00	0.83	0.93	0.89	1.00	1.00	0.89	0.83
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	4.00	0.00	0.00	4.00	1.00
Final Sat.:	0	0	0	1769	0	1583	1769	6778	0	0	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.25	0.00	0.06	0.08	0.25	0.00	0.00	0.26	0.17
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.39	0.00	0.39	0.12	0.52	0.00	0.00	0.40	0.40
Volume/Cap:	0.00	0.00	0.00	0.65	0.00	0.17	0.65	0.47	0.00	0.00	0.65	0.42
Delay/Veh:	0.0	0.0	0.0	27.0	0.0	20.0	48.7	15.4	0.0	0.0	25.0	22.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	27.0	0.0	20.0	48.7	15.4	0.0	0.0	25.0	22.3
LOS by Move:	A	A	A	C	A	B	D	B	A	A	C	C
HCM2k95thQ:	0	0	0	492	0	86	202	307	0	0	484	239

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	0	0	0	0	0		1	0	0	0	1		1	0	4	0	0		0	0	4	0	1	
Lane Group:	xxxx	xxxx		xxxx			L	xxxx		R			L		T		xxxx		xxxx		T		R	
#LnsInGrps:	0	0		0			1	0		1			1		4		0		0		4		1	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12	12		12			12	12		12			12		12		12		12		12		12	
CrsswalkWid:		8						8							8						8			
% Hev Veh:		2						2							2						2			
Grade:		0%						0%							0%						0%			
Parking/Hr:		No						No							No						No			
Bus Stp/Hr:		0						0							0						0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:		0						0							0						0			
ExclusiveRT:		Include						Include							Include						Include			
% RT Prtct:		0						0							0						0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	xxxx	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx			xxxx	xxxx		xxxx		
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	xxxx	xxxx		xxxxx			1.00	xxxx		1.00			1.00	1.00		xxxxx			xxxx	1.00		1.00		
Hev Veh Adj:	xxxx	xxxx		xxxxx			0.98	xxxx		0.98			0.98	0.98		xxxxx			xxxx	0.98		0.98		
Grade Adj:	xxxx	xxxx		xxxxx			1.00	xxxx		1.00			1.00	1.00		xxxxx			xxxx	1.00		1.00		
Parking Adj:	xxxx	xxxx		xxxxx			xxxx	xxxx		1.00			xxxx	1.00		xxxxx			xxxx	xxxx		1.00		
Bus Stp Adj:	xxxx	xxxx		xxxxx			xxxx	xxxx		1.00			xxxx	1.00		xxxxx			xxxx	xxxx		1.00		
Area Adj:	xxxx	xxxx		xxxxx			1.00	xxxx		1.00			1.00	1.00		xxxxx			xxxx	1.00		1.00		
RT Adj:	xxxx	xxxx		xxxxx			xxxx	xxxx		0.85			xxxx	xxxx		xxxxx			xxxx	xxxx		0.85		
LT Adj:	xxxx	xxxx		xxxxx			0.95	xxxx		xxxxx			0.95	xxxx		xxxxx			xxxx	xxxx		xxxxx		
PedBike Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
HCM Sat Adj:	1.00	1.00		1.00			0.93	1.00		0.83			0.93	0.98		1.00			1.00	0.98		0.83		
Usr Sat Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
MLF Sat Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	0.91		1.00			1.00	0.91		1.00		
Fnl Sat Adj:	1.00	1.00		1.00			0.93	1.00		0.83			0.93	0.89		1.00			1.00	0.89		0.83		
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	0.00	0.00		0.00			1.00	0.00		1.00			1.00	1.00		0.00			0.00	1.00		1.00		

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.00	0.00	0.00	0.39	0.00	0.39	0.12	0.52	0.00	0.00	0.40	0.40
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	1.00	1.00	0.89	1.00	0.81	0.98	0.72	1.00	1.00	0.88	0.84
Q1:	0.0	0.0	0.0	9.0	0.0	1.5	3.6	5.8	0.0	0.0	9.5	4.5
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.45	0.00	0.00	0.39	0.39
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.89	0.89	0.00	0.00	0.93	0.93
EarlyArrAdj:	0.00	0.00	0.00	1.00	0.00	1.00	0.26	0.64	0.00	0.00	0.57	0.52
Q2:	0.0	0.0	0.0	1.7	0.0	0.2	0.5	0.6	0.0	0.0	1.0	0.4
HCM2KQueue:	0.0	0.0	0.0	10.7	0.0	1.7	4.1	6.4	0.0	0.0	10.6	4.9
70th%Factor:	1.20	1.20	1.20	1.18	1.20	1.20	1.19	1.19	1.20	1.20	1.18	1.19
HCM2k70thQ:	0.0	0.0	0.0	12.6	0.0	2.0	4.9	7.6	0.0	0.0	12.4	5.8
85th%Factor:	1.60	1.60	1.60	1.51	1.60	1.58	1.56	1.54	1.60	1.60	1.51	1.55
HCM2k85thQ:	0.0	0.0	0.0	16.2	0.0	2.7	6.4	9.9	0.0	0.0	16.0	7.6
90th%Factor:	1.80	1.80	1.80	1.63	1.80	1.77	1.73	1.69	1.80	1.80	1.64	1.71
HCM2k90thQ:	0.0	0.0	0.0	17.6	0.0	3.0	7.0	10.8	0.0	0.0	17.3	8.4
95th%Factor:	2.10	2.10	2.10	1.83	2.10	2.05	1.98	1.92	2.10	2.10	1.83	1.96
HCM2k95thQ:	0.0	0.0	0.0	19.7	0.0	3.5	8.1	12.3	0.0	0.0	19.4	9.5
98th%Factor:	2.70	2.70	2.70	2.14	2.70	2.58	2.43	2.31	2.70	2.70	2.14	2.39
HCM2k98thQ:	0.0	0.0	0.0	23.0	0.0	4.3	9.9	14.8	0.0	0.0	22.6	11.6

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St J

Cycle (sec): 100 Critical Vol./Cap.(X): 0.393
Loss Time (sec): 12 Average Delay (sec/veh): 6.7
Optimal Cycle: 35 Level Of Service: A

Street Name:	Leach Road/Street J						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	3 1	0	1 0	3 1	0
Volume Module:	AM Peak Hour											
Base Vol:	0	0	0	0	0	4	0	1421	0	0	1772	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	4	0	1421	0	0	1772	2
Added Vol:	78	0	76	0	0	0	0	145	26	26	86	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	78	0	76	0	0	4	0	1566	26	26	1858	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	85	0	83	0	0	4	0	1702	28	28	2020	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	85	0	83	0	0	4	0	1702	28	28	2020	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	85	0	83	0	0	4	0	1702	28	28	2020	2
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	1.00	1.00	0.83	1.00	0.89	0.89	0.93	0.89	0.89
Lanes:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	3.93	0.07	1.00	3.99	0.01
Final Sat.:	1769	1900	1583	1900	0	1583	1900	6654	110	1769	6770	7
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.05	0.00	0.00	0.00	0.00	0.26	0.26	0.02	0.30	0.30
Crit Moves:	****				****		****				****	
Green/Cycle:	0.12	0.00	0.12	0.00	0.00	0.00	0.00	0.71	0.71	0.04	0.76	0.76
Volume/Cap:	0.39	0.00	0.43	0.00	0.00	xxxx	0.00	0.36	0.36	0.36	0.39	0.39
Delay/Veh:	41.7	0.0	42.2	0.0	0.0	0.0	0.0	5.6	5.6	49.2	4.2	4.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.7	0.0	42.2	0.0	0.0	0.0	0.0	5.6	5.6	49.2	4.2	4.2
LOS by Move:	D	A	D	A	A	A	A	A	A	D	A	A
HCM2k95thQ:	138	0	140	0	0	6	0	72	72	65	34	34

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	1	0	1	1	0	0	1	0	1	0	3	1	0	
Lane Group:	L	T	R		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	4	4		1	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	xxxx	0.98		xxxx	xxxx	0.98		xxxx	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	1.00	1.00		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	1.00	0.83		1.00	1.00	0.83		1.00	0.98	0.98		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.91	0.91		1.00	0.91	0.91	
Fnl Sat Adj:	0.93	1.00	0.83		1.00	1.00	0.83		1.00	0.89	0.89		0.93	0.89	0.89	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	1.00		0.00	0.00	0.00		0.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.12	0.00	0.12		0.00	0.00	0.00		0.00	0.71	0.71		0.04	0.76	0.76	
ArrivalType:		4				4				4				4		
ProgFactor:	0.97	1.00	0.97		1.00	1.00	1.00		1.00	0.19	0.19		0.99	0.00	0.00	
Q1:	2.1	0.0	2.1		0.0	0.0	0.1		0.0	1.0	1.0		0.8	0.0	0.0	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.47	0.47		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.88	0.88		0.00	0.00	0.00	
EarlyArrAdj:	1.00	0.00	1.00		0.00	0.00	0.00		0.00	0.76	0.76		1.00	1.00	1.00	
Q2:	0.6	0.0	0.7		0.0	0.0	0.0		0.0	0.4	0.4		0.5	0.6	0.6	
HCM2KQueue:	2.7	0.0	2.8		0.0	0.0	0.1		0.0	1.4	1.4		1.3	0.6	0.6	
70th%Factor:	1.19	1.20	1.19		1.20	1.20	1.20		1.20	1.20	1.20		1.20	1.20	1.20	
HCM2k70thQ:	3.3	0.0	3.3		0.0	0.0	0.1		0.0	1.7	1.7		1.5	0.8	0.8	
85th%Factor:	1.57	1.60	1.57		1.60	1.60	1.60		1.60	1.59	1.59		1.59	1.59	1.59	
HCM2k85thQ:	4.3	0.0	4.4		0.0	0.0	0.2		0.0	2.2	2.2		2.0	1.0	1.0	
90th%Factor:	1.75	1.80	1.75		1.80	1.80	1.80		1.80	1.77	1.77		1.78	1.79	1.79	
HCM2k90thQ:	4.8	0.0	4.9		0.0	0.0	0.2		0.0	2.5	2.5		2.3	1.2	1.2	
95th%Factor:	2.02	2.10	2.01		2.10	2.10	2.10		2.10	2.06	2.06		2.06	2.08	2.08	
HCM2k95thQ:	5.5	0.0	5.6		0.0	0.0	0.3		0.0	2.9	2.9		2.6	1.3	1.3	
98th%Factor:	2.51	2.70	2.51		2.70	2.70	2.69		2.70	2.60	2.60		2.61	2.65	2.65	
HCM2k98thQ:	6.9	0.0	7.0		0.0	0.0	0.3		0.0	3.6	3.6		3.3	1.7	1.7	

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Cycle (sec):	100	Critical Vol./Cap.(X):	0.757
Loss Time (sec):	12	Average Delay (sec/veh):	30.0
Optimal Cycle:	68	Level Of Service:	C

Street Name:	Micke Grove Road/Holman Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	4 0	1
Volume Module:	AM Peak Hour											
Base Vol:	358	77	22	36	226	248	229	1137	414	60	1143	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	358	77	22	36	226	248	229	1137	414	60	1143	14
Added Vol:	39	0	0	0	0	19	36	107	78	0	53	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	397	77	22	36	226	267	265	1244	492	60	1196	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	432	84	24	39	246	290	288	1352	535	65	1300	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	432	84	24	39	246	290	288	1352	535	65	1300	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	432	84	24	39	246	290	288	1352	535	65	1300	15
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	3538	1583	1769	3538	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.13	0.02	0.02	0.02	0.07	0.18	0.08	0.20	0.34	0.02	0.19	0.01
Crit Moves:	****					****			****	****		
Green/Cycle:	0.17	0.21	0.21	0.20	0.24	0.24	0.14	0.45	0.45	0.03	0.33	0.33
Volume/Cap:	0.76	0.11	0.07	0.11	0.29	0.76	0.58	0.45	0.76	0.76	0.58	0.03
Delay/Veh:	45.5	31.9	31.7	33.1	31.0	43.6	41.8	19.2	27.8	79.8	28.3	22.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.5	31.9	31.7	33.1	31.0	43.6	41.8	19.2	27.8	79.8	28.3	22.8
LOS by Move:	D	C	C	C	C	D	D	B	C	E	C	C
HCM2k95thQ:	386	53	29	49	154	452	246	311	610	59	378	13

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	4 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	2	1	1	2	1	2	4	1	2	4	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Fnl Sat Adj:	0.90	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.17	0.21	0.21	0.20	0.24	0.24	0.14	0.45	0.45	0.03	0.33	0.33
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.92	0.92	0.93	0.92	0.97	0.97	0.80	0.88	1.00	0.91	0.84
Q1:	5.8	0.9	0.5	0.8	2.7	7.2	3.8	5.7	10.9	0.9	7.5	0.2
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.66	0.66
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.70	0.70
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.08	0.38	0.35
Q2:	2.4	0.1	0.1	0.1	0.4	2.6	1.3	0.8	2.8	0.2	0.5	0.0
HCM2KQueue:	8.2	1.0	0.6	1.0	3.1	9.8	5.0	6.5	13.7	1.1	8.0	0.3
70th%Factor:	1.18	1.20	1.20	1.20	1.19	1.18	1.19	1.19	1.17	1.20	1.18	1.20
HCM2k70thQ:	9.7	1.2	0.7	1.1	3.7	11.5	6.0	7.7	16.0	1.4	9.5	0.3
85th%Factor:	1.53	1.59	1.59	1.59	1.57	1.52	1.55	1.54	1.49	1.59	1.53	1.60
HCM2k85thQ:	12.6	1.6	0.9	1.5	4.8	14.8	7.8	10.0	20.4	1.8	12.3	0.4
90th%Factor:	1.67	1.78	1.79	1.78	1.74	1.65	1.71	1.69	1.60	1.78	1.67	1.80
HCM2k90thQ:	13.7	1.8	1.0	1.7	5.4	16.1	8.6	11.0	21.9	2.0	13.4	0.5
95th%Factor:	1.88	2.07	2.08	2.07	2.01	1.85	1.95	1.92	1.78	2.06	1.88	2.09
HCM2k95thQ:	15.5	2.1	1.2	2.0	6.2	18.1	9.8	12.4	24.4	2.4	15.1	0.5
98th%Factor:	2.23	2.62	2.66	2.63	2.49	2.17	2.38	2.31	2.05	2.62	2.24	2.68
HCM2k98thQ:	18.3	2.7	1.5	2.5	7.7	21.2	12.0	15.0	28.1	3.0	18.0	0.7

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Eight Mile & SR 99 W Frontage

Cycle (sec):	100	Critical Vol./Cap.(X):	0.661
Loss Time (sec):	12	Average Delay (sec/veh):	25.4
Optimal Cycle:	55	Level Of Service:	C

Street Name:	SR 99 West Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1	0	1 0	0	1	0	1	0	2 0	2 1 0
Volume Module:AM Peak Hour												
Base Vol:	1	4	81	331	5	2	4	1176	1	133	1192	211
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	4	81	331	5	2	4	1176	1	133	1192	211
Added Vol:	0	0	0	0	0	0	0	107	0	0	53	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	4	81	331	5	2	4	1283	1	133	1245	211
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	1	4	88	360	5	2	4	1395	1	145	1353	229
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	4	88	360	5	2	4	1395	1	145	1353	229
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	4	88	360	5	2	4	1395	1	145	1353	229
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.84	0.84	0.93	0.94	0.94	0.93	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	0.05	0.95	1.00	0.71	0.29	1.00	3.00	1.00	2.00	2.57	0.43
Final Sat.:	1769	75	1521	1769	1273	509	1769	5083	1583	3432	4251	720
Capacity Analysis Module:												
Vol/Sat:	0.00	0.06	0.06	0.20	0.00	0.00	0.00	0.27	0.00	0.04	0.32	0.32
Crit Moves:		****		****			****				****	
Green/Cycle:	0.05	0.09	0.09	0.31	0.35	0.35	0.00	0.42	0.42	0.06	0.48	0.48
Volume/Cap:	0.01	0.66	0.66	0.66	0.01	0.01	0.66	0.65	0.00	0.65	0.66	0.66
Delay/Veh:	45.2	55.4	55.4	33.1	21.5	21.5	185.2	23.9	16.8	52.5	20.4	20.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.2	55.4	55.4	33.1	21.5	21.5	185.2	23.9	16.8	52.5	20.4	20.4
LOS by Move:	D	E	E	C	C	C	F	C	B	D	C	C
HCM2k95thQ:	2	198	198	457	7	7	9	497	1	119	512	512

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0	1	2	0	2	1	0
Lane Group:	L	RT		RT	L	RT		RT	L	T	R		L	RT		RT
#LnsInGrps:	1	1		1	1	1		1	1	3	1		2	3		3
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12	12		12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.86	0.86		xxxx	0.96	0.96		xxxx	xxxx	0.85		xxxx	0.98	0.98	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.84	0.84		0.93	0.94	0.94		0.93	0.98	0.83		0.93	0.96	0.96	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.84	0.84		0.93	0.94	0.94		0.93	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.05	0.09	0.09		0.31	0.35	0.35		0.00	0.42	0.42		0.06	0.48	0.48	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.99	0.99		0.93	0.83	0.83		1.00	0.87	0.76		0.99	0.82	0.82	
Q1:	0.0	2.5	2.5		8.1	0.1	0.1		0.1	9.8	0.0		2.0	10.0	10.0	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.45	0.45	0.45		0.33	0.33	0.33	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.89	0.89	0.89		0.95	0.95	0.95	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.03	0.57	0.52		0.19	0.65	0.65	
Q2:	0.0	1.5	1.5		1.8	0.0	0.0		0.1	1.0	0.0		0.3	1.2	1.2	
HCM2KQueue:	0.0	4.0	4.0		9.9	0.1	0.1		0.2	10.9	0.0		2.3	11.2	11.2	
70th%Factor:	1.20	1.19	1.19		1.18	1.20	1.20		1.20	1.18	1.20		1.19	1.18	1.18	
HCM2k70thQ:	0.0	4.8	4.8		11.7	0.2	0.2		0.2	12.8	0.0		2.8	13.2	13.2	
85th%Factor:	1.60	1.56	1.56		1.52	1.60	1.60		1.60	1.51	1.60		1.58	1.51	1.51	
HCM2k85thQ:	0.1	6.3	6.3		15.0	0.2	0.2		0.3	16.4	0.0		3.7	16.9	16.9	
90th%Factor:	1.80	1.73	1.73		1.64	1.80	1.80		1.80	1.63	1.80		1.76	1.63	1.63	
HCM2k90thQ:	0.1	6.9	6.9		16.3	0.2	0.2		0.3	17.7	0.0		4.1	18.3	18.3	
95th%Factor:	2.10	1.98	1.98		1.85	2.10	2.10		2.09	1.83	2.10		2.03	1.82	1.82	
HCM2k95thQ:	0.1	7.9	7.9		18.3	0.3	0.3		0.4	19.9	0.0		4.7	20.5	20.5	
98th%Factor:	2.70	2.43	2.43		2.17	2.69	2.69		2.69	2.13	2.70		2.54	2.12	2.12	
HCM2k98thQ:	0.1	9.8	9.8		21.5	0.3	0.3		0.5	23.2	0.0		5.9	23.9	23.9	

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Eight Mile & SR 99 E Frontage

Cycle (sec):	100	Critical Vol./Cap.(X):	0.179
Loss Time (sec):	12	Average Delay (sec/veh):	4.7
Optimal Cycle:	27	Level Of Service:	A

Street Name:	SR 99 East Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0
	2	0	1	1	0	1	0	1	1	0		
Volume Module:AM Peak Hour												
Base Vol:	5	1	3	8	2	5	5	454	5	8	454	3
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	1	3	8	2	5	5	454	5	8	454	3
Added Vol:	8	0	0	0	0	0	0	7	15	0	4	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	13	1	3	8	2	5	5	461	20	8	458	3
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	14	1	3	9	2	5	5	501	22	9	498	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	14	1	3	9	2	5	5	501	22	9	498	3
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	14	1	3	9	2	5	5	501	22	9	498	3
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.87	0.87	0.93	0.88	0.88	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	1.00	0.25	0.75	1.00	0.29	0.71	1.00	2.00	1.00	1.00	1.99	0.01
Final Sat.:	1769	413	1240	1769	475	1188	1769	3538	1583	1769	3511	23
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.01	0.00	0.14	0.14
Crit Moves:	****				****		****				****	
Green/Cycle:	0.04	0.02	0.02	0.05	0.03	0.03	0.02	0.78	0.78	0.03	0.79	0.79
Volume/Cap:	0.18	0.11	0.11	0.11	0.18	0.18	0.18	0.18	0.02	0.18	0.18	0.18
Delay/Veh:	47.1	48.9	48.9	46.3	49.7	49.7	51.3	2.8	2.4	49.4	2.5	2.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.1	48.9	48.9	46.3	49.7	49.7	51.3	2.8	2.4	49.4	2.5	2.5
LOS by Move:	D	D	D	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	30	12	12	18	22	22	9	11	1	23	11	11

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	1 0	1	0	0	1 0	1	0	2	0 1	1	0	1	1 0
Lane Group:	L		RT	RT	L		RT	RT	L		T	R	L		RT	RT
#LnsInGrps:	1		1	1	1		1	1	1		2	1	1		2	2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1		xxxx	xxxx	1		xxxx	xxxx	1		xxxx	xxxx	1		xxxx	xxxx
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Hev Veh Adj:	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98
Grade Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Parking Adj:	xxxx	1.00		1.00	xxxx	1.00		1.00	xxxx	xxxx		1.00	xxxx	1.00		1.00
Bus Stp Adj:	xxxx	1.00		1.00	xxxx	1.00		1.00	xxxx	xxxx		1.00	xxxx	1.00		1.00
Area Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
RT Adj:	xxxx	0.89		0.89	xxxx	0.89		0.89	xxxx	xxxx		0.85	xxxx	1.00		1.00
LT Adj:	0.95	xxxx		xxxxx	0.95	xxxx		xxxxx	0.95	xxxx		xxxxx	0.95	xxxx		xxxxx
PedBike Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
HCM Sat Adj:	0.93	0.87		0.87	0.93	0.88		0.88	0.93	0.98		0.83	0.93	0.98		0.98
Usr Sat Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Sat Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.95		1.00	1.00	0.95		0.95
Fnl Sat Adj:	0.93	0.87		0.87	0.93	0.88		0.88	0.93	0.93		0.83	0.93	0.93		0.93
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.04	0.02	0.02	0.05	0.03	0.03	0.02	0.78	0.78	0.03	0.79	0.79
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.99	0.99	0.99	0.99	0.99	1.00	0.00	0.00	0.99	0.00	0.00
Q1:	0.4	0.1	0.1	0.2	0.2	0.2	0.1	0.0	0.0	0.2	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.20	0.20	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.99	0.99	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.09	0.91	0.83	1.00	1.00	1.00
Q2:	0.2	0.1	0.1	0.1	0.2	0.2	0.0	0.2	0.0	0.2	0.2	0.2
HCM2KQueue:	0.6	0.2	0.2	0.3	0.4	0.4	0.2	0.2	0.0	0.4	0.2	0.2
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	0.7	0.3	0.3	0.4	0.5	0.5	0.2	0.2	0.0	0.5	0.3	0.3
85th%Factor:	1.59	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
HCM2k85thQ:	0.9	0.4	0.4	0.6	0.7	0.7	0.3	0.3	0.0	0.7	0.3	0.3
90th%Factor:	1.79	1.80	1.80	1.79	1.79	1.79	1.80	1.80	1.80	1.79	1.80	1.80
HCM2k90thQ:	1.0	0.4	0.4	0.6	0.7	0.7	0.3	0.4	0.0	0.8	0.4	0.4
95th%Factor:	2.08	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.10	2.09	2.09	2.09
HCM2k95thQ:	1.2	0.5	0.5	0.7	0.9	0.9	0.4	0.4	0.0	0.9	0.5	0.5
98th%Factor:	2.66	2.68	2.68	2.67	2.67	2.67	2.69	2.68	2.70	2.67	2.68	2.68
HCM2k98thQ:	1.6	0.6	0.6	0.9	1.1	1.1	0.4	0.5	0.0	1.2	0.6	0.6

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

Cycle (sec): 100 Critical Vol./Cap.(X): 0.848
Loss Time (sec): 12 Average Delay (sec/veh): 41.5
Optimal Cycle: 90 Level Of Service: D

Street Name:	Holman Road						Lt. Col. Mark Taylor Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	1 0	1	1 0	0 1	0
Volume Module:	AM Peak Hour											
Base Vol:	31	273	160	361	400	30	38	386	25	308	393	200
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	31	273	160	361	400	30	38	386	25	308	393	200
Added Vol:	0	5	0	0	12	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	31	278	160	361	412	30	38	386	25	308	393	200
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	34	302	174	392	448	33	41	420	27	335	427	217
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	302	174	392	448	33	41	420	27	335	427	217
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	34	302	174	392	448	33	41	420	27	335	427	217
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.98	0.83	0.93	0.93	0.93
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.00	1.00	1.00	0.66	0.34
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	1862	1583	1769	1171	596
Capacity Analysis Module:												
Vol/Sat:	0.02	0.06	0.11	0.22	0.09	0.02	0.02	0.23	0.02	0.19	0.36	0.36
Crit Moves:			****	****				****		****		
Green/Cycle:	0.07	0.13	0.13	0.26	0.32	0.32	0.03	0.27	0.27	0.22	0.46	0.46
Volume/Cap:	0.27	0.46	0.85	0.85	0.27	0.06	0.79	0.85	0.06	0.85	0.79	0.79
Delay/Veh:	45.3	40.8	69.2	48.7	25.3	23.5	104.1	47.7	27.5	52.9	28.4	28.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.3	40.8	69.2	48.7	25.3	23.5	104.1	47.7	27.5	52.9	28.4	28.4
LOS by Move:	D	D	E	D	C	C	F	D	C	D	C	C
HCM2k95thQ:	49	151	282	620	166	31	78	580	28	561	730	730

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 3	0 1		1	0 3	0 1		1	0 1	0 1		1	0 0	1 0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	3	1		1	3	1		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.95	0.95	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.93	0.93	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.98	0.83		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.07	0.13	0.13		0.26	0.32	0.32		0.03	0.27	0.27		0.22	0.46	0.46	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.97	0.99		0.97	0.87	0.85		1.00	0.97	0.88		0.98	0.89	0.89	
Q1:	0.9	2.8	4.7		10.1	2.9	0.5		1.1	10.8	0.5		8.7	13.5	13.5	
UpstreamVC:	0.36	0.36	0.36		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.94	0.94	0.94		0.00	0.00	0.00		1.00	1.00	1.00		0.00	0.00	0.00	
EarlyArrAdj:	0.20	0.29	0.27		1.00	1.00	1.00		0.12	0.48	0.44		1.00	1.00	1.00	
Q2:	0.1	0.2	1.2		3.9	0.4	0.1		0.4	2.2	0.0		3.7	3.3	3.3	
HCM2KQueue:	0.9	3.0	5.8		14.0	3.3	0.6		1.5	12.9	0.5		12.5	16.8	16.8	
70th%Factor:	1.20	1.19	1.19		1.17	1.19	1.20		1.20	1.17	1.20		1.17	1.17	1.17	
HCM2k70thQ:	1.1	3.6	6.9		16.3	4.0	0.7		1.8	15.2	0.6		14.6	19.6	19.6	
85th%Factor:	1.59	1.57	1.55		1.49	1.57	1.59		1.59	1.49	1.59		1.50	1.47	1.47	
HCM2k85thQ:	1.5	4.7	9.0		20.8	5.2	1.0		2.4	19.3	0.8		18.7	24.8	24.8	
90th%Factor:	1.78	1.74	1.70		1.60	1.74	1.79		1.77	1.61	1.79		1.61	1.57	1.57	
HCM2k90thQ:	1.7	5.2	9.9		22.3	5.8	1.1		2.7	20.8	0.9		20.1	26.5	26.5	
95th%Factor:	2.07	2.01	1.93		1.78	2.00	2.08		2.05	1.79	2.08		1.80	1.74	1.74	
HCM2k95thQ:	2.0	6.0	11.3		24.8	6.6	1.2		3.1	23.2	1.1		22.4	29.2	29.2	
98th%Factor:	2.63	2.49	2.34		2.04	2.47	2.65		2.59	2.07	2.66		2.08	1.97	1.97	
HCM2k98thQ:	2.5	7.5	13.6		28.5	8.2	1.6		3.9	26.8	1.4		26.0	33.2	33.2	

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.797
Loss Time (sec):	12	Average Delay (sec/veh):	33.8
Optimal Cycle:	76	Level Of Service:	C

Street Name:	West Lane						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	2	0	1	2	0	2	0	1
Volume Module:	AM Peak Hour											
Base Vol:	392	794	144	77	1369	89	110	345	355	263	294	34
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	392	794	144	77	1369	89	110	345	355	263	294	34
Added Vol:	0	98	0	55	189	15	8	0	0	0	0	32
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	392	892	144	132	1558	104	118	345	355	263	294	66
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	426	970	157	143	1693	113	128	375	386	286	320	72
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	426	970	157	143	1693	113	128	375	386	286	320	72
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	426	970	157	143	1693	113	128	375	386	286	320	72
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.93	0.83	0.90	0.93	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	3538	1583	3432	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.12	0.14	0.10	0.04	0.25	0.07	0.04	0.11	0.24	0.08	0.09	0.05
Crit Moves:	****				****				****	****		
Green/Cycle:	0.16	0.36	0.36	0.11	0.31	0.31	0.12	0.31	0.31	0.10	0.29	0.29
Volume/Cap:	0.80	0.39	0.27	0.39	0.80	0.23	0.31	0.35	0.80	0.80	0.31	0.16
Delay/Veh:	48.9	23.8	22.8	42.4	33.6	25.6	40.6	27.1	40.8	55.5	27.9	26.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.9	23.8	22.8	42.4	33.6	25.6	40.6	27.1	40.8	55.5	27.9	26.5
LOS by Move:	D	C	C	D	C	C	D	C	D	E	C	C
HCM2k95thQ:	402	261	148	126	641	117	105	212	563	312	184	76

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	2	0	1	2	0	2	0	1				
Lane Group:	L		T		R	L		T		R	L		T		R	L		T		R				
#LnsInGrps:	2		4		1	2		4		1	2		2		1	2		2		1				
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12				
CrsswalkWid:	8					8					8					8								
% Hev Veh:	2					2					2					2								
Grade:	0%					0%					0%					0%								
Parking/Hr:	No					No					No					No								
Bus Stp/Hr:	0					0					0					0								
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:	0					0					0					0								
ExclusiveRT:	Include					Include					Include					Include								
% RT Prtct:	0					0					0					0								
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx		xxxx		1	xxxx		xxxx		1	xxxx		xxxx		1	xxxx		xxxx					
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00					
Hev Veh Adj:	0.98	0.98		0.98		0.98	0.98		0.98		0.98	0.98		0.98		0.98	0.98		0.98					
Grade Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00					
Parking Adj:	xxxx	xxxx		1.00		xxxx	xxxx		1.00		xxxx	xxxx		1.00		xxxx	xxxx		1.00					
Bus Stp Adj:	xxxx	xxxx		1.00		xxxx	xxxx		1.00		xxxx	xxxx		1.00		xxxx	xxxx		1.00					
Area Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00					
RT Adj:	xxxx	xxxx		0.85		xxxx	xxxx		0.85		xxxx	xxxx		0.85		xxxx	xxxx		0.85					
LT Adj:	0.95	xxxx		xxxxx		0.95	xxxx		xxxxx		0.95	xxxx		xxxxx		0.95	xxxx		xxxxx					
PedBike Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00					
HCM Sat Adj:	0.93	0.98		0.83		0.93	0.98		0.83		0.93	0.98		0.83		0.93	0.98		0.83					
Usr Sat Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00					
MLF Sat Adj:	0.97	0.91		1.00		0.97	0.91		1.00		0.97	0.95		1.00		0.97	0.95		1.00					
Fnl Sat Adj:	0.90	0.89		0.83		0.90	0.89		0.83		0.90	0.93		0.83		0.90	0.93		0.83					
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00					

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.16	0.36	0.36	0.11	0.31	0.31	0.12	0.31	0.31	0.10	0.29	0.29
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.86	0.84	0.97	0.95	0.87	0.97	0.89	0.96	0.99	0.89	0.88
Q1:	5.8	4.7	2.6	1.9	11.3	2.0	1.6	3.8	9.4	4.0	3.3	1.3
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	2.8	0.6	0.4	0.6	3.2	0.3	0.4	0.5	3.1	2.5	0.4	0.2
HCM2KQueue:	8.6	5.4	3.0	2.5	14.5	2.3	2.1	4.3	12.5	6.5	3.7	1.5
70th%Factor:	1.18	1.19	1.19	1.19	1.17	1.19	1.19	1.19	1.17	1.18	1.19	1.20
HCM2k70thQ:	10.1	6.4	3.5	3.0	17.0	2.8	2.5	5.1	14.7	7.7	4.4	1.8
85th%Factor:	1.53	1.55	1.57	1.58	1.49	1.58	1.58	1.56	1.50	1.54	1.57	1.59
HCM2k85thQ:	13.1	8.3	4.6	3.9	21.5	3.6	3.3	6.7	18.8	10.0	5.8	2.4
90th%Factor:	1.66	1.71	1.75	1.75	1.59	1.76	1.76	1.72	1.61	1.69	1.73	1.77
HCM2k90thQ:	14.3	9.1	5.2	4.4	23.1	4.1	3.6	7.4	20.2	11.0	6.4	2.6
95th%Factor:	1.87	1.95	2.01	2.02	1.77	2.03	2.03	1.97	1.80	1.92	1.99	2.05
HCM2k95thQ:	16.1	10.4	5.9	5.0	25.6	4.7	4.2	8.5	22.5	12.5	7.4	3.0
98th%Factor:	2.22	2.36	2.50	2.53	2.03	2.54	2.55	2.42	2.08	2.31	2.45	2.59
HCM2k98thQ:	19.0	12.7	7.4	6.3	29.4	5.9	5.3	10.4	26.1	15.0	9.1	3.8

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.528
Loss Time (sec):	12	Average Delay (sec/veh):	33.4
Optimal Cycle:	43	Level Of Service:	C

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:	AM Peak Hour											
Base Vol:	158	364	94	135	629	96	114	505	136	186	491	66
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	158	364	94	135	629	96	114	505	136	186	491	66
Added Vol:	3	4	0	0	9	3	1	31	5	0	18	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	161	368	94	135	638	99	115	536	141	186	509	66
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	175	400	102	147	693	108	125	583	153	202	553	72
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	175	400	102	147	693	108	125	583	153	202	553	72
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	175	400	102	147	693	108	125	583	153	202	553	72
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.10	0.08	0.06	0.08	0.14	0.07	0.07	0.11	0.10	0.11	0.11	0.05
Crit Moves:	****				****			****		****		
Green/Cycle:	0.19	0.22	0.22	0.23	0.26	0.26	0.17	0.22	0.22	0.22	0.26	0.26
Volume/Cap:	0.53	0.36	0.30	0.36	0.53	0.26	0.41	0.53	0.45	0.53	0.41	0.17
Delay/Veh:	38.2	33.5	33.2	33.0	32.2	29.8	37.9	35.1	34.8	36.0	30.7	28.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.2	33.5	33.2	33.0	32.2	29.8	37.9	35.1	34.8	36.0	30.7	28.6
LOS by Move:	D	C	C	C	C	C	D	D	C	D	C	C
HCM2k95thQ:	225	172	120	171	296	117	181	291	210	251	226	75

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	3	0	1	1	0	3	0	1	1	0	3	0	1	1
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	3	1		1	3	1		1	3	1		1	3	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.19	0.22	0.22		0.23	0.26	0.26		0.17	0.22	0.22		0.22	0.26	0.26	
ArrivalType:		4				4				4				4		
ProgFactor:	0.96	0.93	0.93		0.93	0.93	0.91		0.96	0.95	0.94		0.95	0.92	0.90	
Q1:	4.2	3.2	2.2		3.2	5.7	2.2		3.0	5.0	3.5		4.7	4.3	1.4	
UpstreamVC:	0.36	0.36	0.36		0.27	0.27	0.27		0.00	0.00	0.00		0.36	0.36	0.36	
UpstreamAdj:	0.94	0.94	0.94		0.97	0.97	0.97		0.00	0.00	0.00		0.94	0.94	0.94	
EarlyArrAdj:	0.36	0.40	0.36		0.42	0.46	0.42		1.00	1.00	1.00		0.39	0.45	0.41	
Q2:	0.4	0.2	0.2		0.2	0.5	0.1		0.7	1.1	0.8		0.4	0.3	0.1	
HCM2KQueue:	4.6	3.5	2.4		3.4	6.2	2.3		3.6	6.0	4.3		5.1	4.6	1.5	
70th%Factor:	1.19	1.19	1.19		1.19	1.19	1.19		1.19	1.19	1.19		1.19	1.19	1.20	
HCM2k70thQ:	5.5	4.1	2.8		4.1	7.3	2.8		4.3	7.2	5.1		6.1	5.5	1.7	
85th%Factor:	1.56	1.57	1.58		1.57	1.54	1.58		1.57	1.55	1.56		1.55	1.56	1.59	
HCM2k85thQ:	7.1	5.4	3.7		5.4	9.5	3.6		5.7	9.3	6.6		8.0	7.1	2.3	
90th%Factor:	1.72	1.74	1.76		1.74	1.69	1.76		1.73	1.70	1.72		1.71	1.72	1.77	
HCM2k90thQ:	7.9	6.0	4.1		5.9	10.4	4.0		6.3	10.2	7.3		8.8	7.9	2.6	
95th%Factor:	1.96	2.00	2.03		2.00	1.93	2.03		1.99	1.93	1.97		1.95	1.96	2.05	
HCM2k95thQ:	9.0	6.9	4.8		6.8	11.9	4.7		7.3	11.7	8.4		10.0	9.0	3.0	
98th%Factor:	2.40	2.47	2.53		2.47	2.32	2.54		2.46	2.33	2.42		2.37	2.40	2.59	
HCM2k98thQ:	11.0	8.5	6.0		8.4	14.3	5.8		9.0	14.1	10.3		12.2	11.0	3.8	

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 Morada Ln & SR99 W Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.412
Loss Time (sec):	12	Average Delay (sec/veh):	24.3
Optimal Cycle:	36	Level Of Service:	C

Street Name:	SR 99 West Frontage Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1	0	1	2	0	0	1	0	1	0	2	1	0	1	0	2	0	1
Volume Module:AM Peak Hour												
Base Vol:	3	27	45	419	35	12	17	479	2	90	518	274
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	27	45	419	35	12	17	479	2	90	518	274
Added Vol:	0	0	0	0	0	0	0	31	0	0	18	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	27	45	419	35	12	17	510	2	90	536	274
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	3	29	49	455	38	13	18	554	2	98	583	298
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	29	49	455	38	13	18	554	2	98	583	298
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	29	49	455	38	13	18	554	2	98	583	298
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.90	0.94	0.94	0.93	0.89	0.89	0.93	0.93	0.83
Lanes:	2.00	1.00	1.00	2.00	0.74	0.26	1.00	2.99	0.01	1.00	2.00	1.00
Final Sat.:	3432	1862	1583	3432	1334	457	1769	5058	20	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.02	0.03	0.13	0.03	0.03	0.01	0.11	0.11	0.06	0.16	0.19
Crit Moves:			****	****			****					****
Green/Cycle:	0.01	0.08	0.08	0.32	0.38	0.38	0.03	0.32	0.32	0.16	0.46	0.46
Volume/Cap:	0.07	0.21	0.41	0.41	0.07	0.07	0.41	0.34	0.34	0.34	0.36	0.41
Delay/Veh:	49.5	44.2	46.4	26.7	19.5	19.5	54.0	26.0	26.0	37.9	17.8	18.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.5	44.2	46.4	26.7	19.5	19.5	54.0	26.0	26.0	37.9	17.8	18.5
LOS by Move:	D	D	D	C	B	B	D	C	C	D	B	B
HCM2k95thQ:	6	52	98	254	41	41	30	199	199	125	227	232

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #22 Morada Ln & SR99 W Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2	0	1	0	1	2	0	0	1	0	1	0	2	1	0	1	0	2	0	1
Lane Group:	L	T	R	L	RT	RT	L	RT	RT	L	T	R
#LnsInGrps:	2	1	1	2	1	1	1	3	3	1	2	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	0.96	0.96	xxxx	1.00	1.00	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.94	0.94	0.93	0.98	0.98	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	1.00	1.00	0.97	1.00	1.00	1.00	0.91	0.91	1.00	0.95	1.00
Fnl Sat Adj:	0.90	0.98	0.83	0.90	0.94	0.94	0.93	0.89	0.89	0.93	0.93	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #22 Morada Ln & SR99 W Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.01	0.08	0.08	0.32	0.38	0.38	0.03	0.32	0.32	0.16	0.46	0.46
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.98	0.98	0.89	0.80	0.80	0.99	0.88	0.88	0.95	0.77	0.78
Q1:	0.0	0.7	1.3	4.5	0.7	0.7	0.5	3.8	3.8	2.3	4.3	4.3
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.53	0.23	0.23	0.23
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.84	0.84	0.98	0.98	0.98
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.10	0.45	0.45	0.34	0.66	0.59
Q2:	0.1	0.3	0.7	0.7	0.1	0.1	0.1	0.2	0.2	0.2	0.4	0.4
HCM2KQueue:	0.1	1.0	1.9	5.2	0.8	0.8	0.6	4.0	4.0	2.5	4.6	4.7
70th%Factor:	1.20	1.20	1.20	1.19	1.20	1.20	1.20	1.19	1.19	1.19	1.19	1.19
HCM2k70thQ:	0.1	1.2	2.3	6.2	1.0	1.0	0.7	4.8	4.8	3.0	5.5	5.6
85th%Factor:	1.60	1.59	1.58	1.55	1.59	1.59	1.59	1.56	1.56	1.58	1.56	1.56
HCM2k85thQ:	0.2	1.6	3.0	8.1	1.3	1.3	0.9	6.3	6.3	3.9	7.2	7.4
90th%Factor:	1.80	1.78	1.76	1.71	1.78	1.78	1.79	1.73	1.73	1.75	1.72	1.72
HCM2k90thQ:	0.2	1.8	3.4	8.9	1.4	1.4	1.0	7.0	7.0	4.3	8.0	8.1
95th%Factor:	2.10	2.07	2.04	1.95	2.07	2.07	2.08	1.98	1.98	2.02	1.96	1.96
HCM2k95thQ:	0.3	2.1	3.9	10.1	1.7	1.7	1.2	8.0	8.0	5.0	9.1	9.3
98th%Factor:	2.69	2.63	2.56	2.37	2.64	2.64	2.66	2.43	2.43	2.53	2.40	2.40
HCM2k98thQ:	0.3	2.7	4.9	12.3	2.1	2.1	1.5	9.8	9.8	6.3	11.1	11.3

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 West Ln & West Ln Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.774
Loss Time (sec):	12	Average Delay (sec/veh):	24.8
Optimal Cycle:	71	Level Of Service:	C

Street Name:	West Lane						West Lane Frontage Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3	1 0	1 0	3	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:	AM Peak Hour											
Base Vol:	222	1147	53	17	1875	29	40	32	208	77	21	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	222	1147	53	17	1875	29	40	32	208	77	21	6
Added Vol:	0	98	0	0	189	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	222	1245	53	17	2064	29	40	32	208	77	21	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	241	1353	58	18	2243	32	43	35	226	84	23	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	241	1353	58	18	2243	32	43	35	226	84	23	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	241	1353	58	18	2243	32	43	35	226	84	23	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.89	0.89	0.93	0.85	0.85	0.93	0.95	0.95
Lanes:	1.00	3.84	0.16	1.00	3.94	0.06	1.00	0.13	0.87	1.00	0.78	0.22
Final Sat.:	1769	6462	275	1769	6670	94	1769	216	1404	1769	1400	400
Capacity Analysis Module:												
Vol/Sat:	0.14	0.21	0.21	0.01	0.34	0.34	0.02	0.16	0.16	0.05	0.02	0.02
Crit Moves:	****				****			****		****		
Green/Cycle:	0.18	0.58	0.58	0.03	0.43	0.43	0.16	0.21	0.21	0.06	0.11	0.11
Volume/Cap:	0.77	0.36	0.36	0.36	0.77	0.77	0.15	0.77	0.77	0.77	0.15	0.15
Delay/Veh:	50.7	11.1	11.1	51.9	25.4	25.4	36.3	48.0	48.0	74.9	40.9	40.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.7	11.1	11.1	51.9	25.4	25.4	36.3	48.0	48.0	74.9	40.9	40.9
LOS by Move:	D	B	B	D	C	C	D	D	D	E	D	D
HCM2k95thQ:	345	186	186	52	709	709	60	434	434	213	46	46

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 3	1	0	1	0 3	1	0	1	0 0	1	0	1	0 0	1	0
Lane Group:	L	RT		RT	L	RT		RT	L	RT		RT	L	RT		RT
#LnsInGrps:	1	4		4	1	4		4	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.99	0.99		xxxx	1.00	1.00		xxxx	0.87	0.87		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.97	0.97		0.93	0.98	0.98		0.93	0.85	0.85		0.93	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	0.91		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.89		0.93	0.89	0.89		0.93	0.85	0.85		0.93	0.95	0.95	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.18	0.58	0.58		0.03	0.43	0.43		0.16	0.21	0.21		0.06	0.11	0.11	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.59	0.59		0.99	0.90	0.90		0.94	0.97	0.97		0.99	0.97	0.97	
Q1:	6.3	3.4	3.4		0.5	13.2	13.2		1.0	6.7	6.7		2.3	0.7	0.7	
UpstreamVC:	0.45	0.45	0.45		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.89	0.89	0.89		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	0.33	0.69	0.69		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	1.0	0.4	0.4		0.5	3.0	3.0		0.2	2.7	2.7		2.0	0.2	0.2	
HCM2KQueue:	7.3	3.7	3.7		1.0	16.3	16.3		1.2	9.3	9.3		4.3	0.9	0.9	
70th%Factor:	1.18	1.19	1.19		1.20	1.17	1.17		1.20	1.18	1.18		1.19	1.20	1.20	
HCM2k70thQ:	8.6	4.5	4.5		1.2	19.0	19.0		1.4	11.0	11.0		5.1	1.1	1.1	
85th%Factor:	1.54	1.56	1.56		1.59	1.47	1.47		1.59	1.52	1.52		1.56	1.59	1.59	
HCM2k85thQ:	11.2	5.8	5.8		1.6	24.0	24.0		1.8	14.2	14.2		6.8	1.4	1.4	
90th%Factor:	1.68	1.73	1.73		1.78	1.58	1.58		1.78	1.65	1.65		1.72	1.78	1.78	
HCM2k90thQ:	12.2	6.5	6.5		1.8	25.7	25.7		2.1	15.4	15.4		7.5	1.6	1.6	
95th%Factor:	1.90	1.99	1.99		2.07	1.74	1.74		2.06	1.86	1.86		1.97	2.07	2.07	
HCM2k95thQ:	13.8	7.4	7.4		2.1	28.4	28.4		2.4	17.3	17.3		8.5	1.8	1.8	
98th%Factor:	2.27	2.45	2.45		2.63	1.99	1.99		2.61	2.19	2.19		2.42	2.63	2.63	
HCM2k98thQ:	16.5	9.2	9.2		2.6	32.3	32.3		3.0	20.4	20.4		10.5	2.3	2.3	

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 West Lane & Knickerbocker Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.743
Loss Time (sec):	12	Average Delay (sec/veh):	23.8
Optimal Cycle:	66	Level Of Service:	C

Street Name:	West Lane						Knickerbocker Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3	1 0	1 0	3	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:	AM Peak Hour											
Base Vol:	125	1262	34	94	2066	144	170	80	102	71	86	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	125	1262	34	94	2066	144	170	80	102	71	86	50
Added Vol:	0	98	0	0	189	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	125	1360	34	94	2255	144	170	80	102	71	86	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	136	1478	37	102	2451	157	185	87	111	77	93	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	136	1478	37	102	2451	157	185	87	111	77	93	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	136	1478	37	102	2451	157	185	87	111	77	93	54
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.88	0.88	0.93	0.90	0.90	0.93	0.93	0.93
Lanes:	1.00	3.90	0.10	1.00	3.76	0.24	1.00	0.44	0.56	1.00	0.63	0.37
Final Sat.:	1769	6586	165	1769	6314	403	1769	750	956	1769	1113	647
Capacity Analysis Module:												
Vol/Sat:	0.08	0.22	0.22	0.06	0.39	0.39	0.10	0.12	0.12	0.04	0.08	0.08
Crit Moves:	****				****		****				****	
Green/Cycle:	0.10	0.50	0.50	0.13	0.52	0.52	0.14	0.18	0.18	0.07	0.11	0.11
Volume/Cap:	0.74	0.45	0.45	0.45	0.74	0.74	0.74	0.63	0.63	0.63	0.74	0.74
Delay/Veh:	58.6	16.3	16.3	41.8	19.5	19.5	52.6	41.7	41.7	55.3	56.9	56.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	58.6	16.3	16.3	41.8	19.5	19.5	52.6	41.7	41.7	55.3	56.9	56.9
LOS by Move:	E	B	B	D	B	B	D	D	D	E	E	E
HCM2k95thQ:	202	286	286	135	605	605	338	309	309	171	293	293

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	3	1 0		1 0	3	1 0		1 0	0	1 0		1 0	0	1 0	
Lane Group:	L	RT	RT		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	4	4		1	4	4		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	1.00	1.00		xxxx	0.99	0.99		xxxx	0.92	0.92		xxxx	0.95	0.95	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.98		0.93	0.97	0.97		0.93	0.90	0.90		0.93	0.93	0.93	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	0.91		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.89		0.93	0.88	0.88		0.93	0.90	0.90		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.10	0.50	0.50	0.13	0.52	0.52	0.14	0.18	0.18	0.07	0.11	0.11
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.74	0.74	0.97	0.81	0.81	0.98	0.97	0.97	0.99	0.99	0.99
Q1:	3.6	5.5	5.5	2.5	12.5	12.5	4.8	4.9	4.9	2.1	3.9	3.9
UpstreamVC:	0.69	0.69	0.69	0.77	0.77	0.77	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.66	0.66	0.66	0.54	0.54	0.54	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.18	0.46	0.46	0.16	0.39	0.39	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.5	0.4	0.4	0.1	1.1	1.1	2.3	1.5	1.5	1.4	2.2	2.2
HCM2KQueue:	4.1	5.9	5.9	2.7	13.6	13.6	7.1	6.4	6.4	3.4	6.1	6.1
70th%Factor:	1.19	1.19	1.19	1.19	1.17	1.17	1.18	1.19	1.19	1.19	1.19	1.19
HCM2k70thQ:	4.9	7.0	7.0	3.2	15.9	15.9	8.4	7.6	7.6	4.1	7.2	7.2
85th%Factor:	1.56	1.55	1.55	1.57	1.49	1.49	1.54	1.54	1.54	1.57	1.54	1.54
HCM2k85thQ:	6.4	9.2	9.2	4.2	20.3	20.3	10.9	9.9	9.9	5.4	9.4	9.4
90th%Factor:	1.73	1.70	1.70	1.75	1.60	1.60	1.68	1.69	1.69	1.74	1.70	1.70
HCM2k90thQ:	7.1	10.1	10.1	4.7	21.8	21.8	11.9	10.9	10.9	6.0	10.3	10.3
95th%Factor:	1.98	1.93	1.93	2.02	1.78	1.78	1.90	1.92	1.92	2.00	1.93	1.93
HCM2k95thQ:	8.1	11.4	11.4	5.4	24.2	24.2	13.5	12.4	12.4	6.9	11.7	11.7
98th%Factor:	2.43	2.33	2.33	2.51	2.05	2.05	2.28	2.31	2.31	2.47	2.33	2.33
HCM2k98thQ:	9.9	13.8	13.8	6.7	27.9	27.9	16.2	14.9	14.9	8.5	14.2	14.2

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.793
Loss Time (sec):	12	Average Delay (sec/veh):	34.5
Optimal Cycle:	75	Level Of Service:	C

Street Name:	West Lane						Hammer Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4 0 1	2	0	4 0 1	2	0	4 0 1	2	0	4 0 1
Volume Module:	AM Peak Hour											
Base Vol:	119	912	271	672	1419	124	155	797	97	540	817	364
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	119	912	271	672	1419	124	155	797	97	540	817	364
Added Vol:	0	98	0	0	189	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	119	1010	271	672	1608	124	155	797	97	540	817	364
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	129	1098	295	730	1748	135	168	866	105	587	888	396
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	129	1098	295	730	1748	135	168	866	105	587	888	396
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	129	1098	295	730	1748	135	168	866	105	587	888	396
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.04	0.16	0.19	0.21	0.26	0.09	0.05	0.13	0.07	0.17	0.13	0.25
Crit Moves:			****	****				****		****		
Green/Cycle:	0.06	0.23	0.23	0.27	0.44	0.44	0.06	0.16	0.16	0.22	0.32	0.32
Volume/Cap:	0.59	0.69	0.79	0.79	0.59	0.19	0.79	0.79	0.41	0.79	0.42	0.79
Delay/Veh:	49.6	36.3	47.1	38.8	21.5	17.3	64.6	44.4	38.8	43.0	27.1	39.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.6	36.3	47.1	38.8	21.5	17.3	64.6	44.4	38.8	43.0	27.1	39.8
LOS by Move:	D	D	D	D	C	B	E	D	D	D	C	D
HCM2k95thQ:	149	433	478	476	418	94	223	422	160	401	243	482

Note: Queue reported is the distance per lane in feet.

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-------------------------------------------------------------------------------
                       Cumul + Reduce Dens Alt AM Pk Hr
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                Level Of Service Detailed Computation Report
                         2000 HCM Operations Method
                          Future Volume Alternative
*******************************************************************************
Intersection #26 West Lane & Hammer Lane
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Approach:      North Bound      South Bound       East Bound        West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:       2  0  4  0  1    2  0  4  0  1    2  0  4  0  1    2  0  4  0  1
Lane Group:    L    T     R     L    T     R     L    T     R     L    T     R
#LnsInGrps:    2    4     1     2    4     1     2    4     1     2    4     1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:        8                8                8                8
% Hev Veh:          2                2                2                2
Grade:             0%               0%               0%               0%
Parking/Hr:        No               No               No               No
Bus Stp/Hr:         0                0                0                0
Area Type:   < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:        0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:         0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Hev Veh Adj: 0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
Grade Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Parking Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00
Bus Stp Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00
Area Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
RT Adj:      xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx xxxx  0.85
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.93 0.98  0.83  0.93 0.98  0.83  0.93 0.98  0.83  0.93 0.98  0.83
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 0.97 0.91  1.00  0.97 0.91  1.00  0.97 0.91  1.00  0.97 0.91  1.00
Fnl Sat Adj: 0.90 0.89  0.83  0.90 0.89  0.83  0.90 0.89  0.83  0.90 0.89  0.83
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated: < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > > > >
>
Signal Type: < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
*******************************************************************************
```



```
-------------------------------------------------------------------------------
                       Cumul + Reduce Dens Alt AM Pk Hr
-------------------------------------------------------------------------------
      Level Of Service Detailed Computation Report (HCM2000 Queue Method)
                         2000 HCM Operations Method
                          Future Volume Alternative
*******************************************************************************
Intersection #26 West Lane & Hammer Lane
*******************************************************************************
Approach:      North Bound      South Bound       East Bound        West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Green/Cycle: 0.06 0.23  0.23  0.27 0.44  0.44  0.06 0.16  0.16  0.22 0.32  0.32
ArrivalType:        4                4                4                4
ProgFactor:  0.99 0.96  0.97  0.96 0.84  0.76  1.00 0.98  0.96  0.98 0.89  0.95
Q1:           1.8  7.3   7.5   9.4  8.4   1.8   2.4  6.3   2.5   7.8  4.8   9.6
UpstreamVC:  0.00 0.00  0.00  0.74 0.74  0.74  0.00 0.00  0.00  0.77 0.77  0.77
UpstreamAdj: 0.00 0.00  0.00  0.59 0.59  0.59  0.00 0.00  0.00  0.55 0.55  0.55
EarlyArrAdj: 1.00 1.00  1.00  0.28 0.38  0.35  1.00 1.00  1.00  0.23 0.29  0.27
Q2:           1.2  2.0   2.9   1.0  0.5   0.1   2.2  2.8   0.7   0.8  0.2   1.0
HCM2KQueue:   3.0  9.3  10.4  10.4  9.0   1.8   4.5  9.1   3.2   8.6  5.0  10.5
------------|---------------||---------------||---------------||---------------|
70th%Factor: 1.19 1.18  1.18  1.18 1.18  1.20  1.19 1.18  1.19  1.18 1.19  1.18
HCM2k70thQ:   3.5 11.0  12.3  12.2 10.6   2.2   5.4 10.7   3.8  10.1  5.9  12.4
------------|---------------||---------------||---------------||---------------|
85th%Factor: 1.57 1.52  1.51  1.51 1.52  1.58  1.56 1.52  1.57  1.53 1.55  1.51
HCM2k85thQ:   4.7 14.2  15.7  15.7 13.7   2.9   7.1 13.8   5.0  13.1  7.7  15.9
------------|---------------||---------------||---------------||---------------|
90th%Factor: 1.74 1.65  1.64  1.64 1.66  1.76  1.72 1.65  1.74  1.66 1.71  1.64
HCM2k90thQ:   5.2 15.4  17.1  17.0 14.9   3.2   7.8 15.0   5.6  14.2  8.5  17.2
------------|---------------||---------------||---------------||---------------|
95th%Factor: 2.01 1.86  1.84  1.84 1.86  2.04  1.97 1.86  2.00  1.87 1.96  1.83
HCM2k95thQ:   6.0 17.3  19.1  19.0 16.7   3.7   8.9 16.9   6.4  16.0  9.7  19.3
------------|---------------||---------------||---------------||---------------|
98th%Factor: 2.50 2.19  2.15  2.15 2.20  2.57  2.41 2.20  2.48  2.22 2.38  2.15
HCM2k98thQ:   7.4 20.4  22.4  22.3 19.8   4.7  10.9 19.9   7.9  19.0 11.8  22.6
```

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.768
Loss Time (sec):	12	Average Delay (sec/veh):	33.6
Optimal Cycle:	70	Level Of Service:	C

Street Name:	Hammer Lane						Holman Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2	1 0	2 0	3	0 1	2 0	3	1 0	2 0	3	1 0
Volume Module:AM Peak Hour												
Base Vol:	321	308	83	186	634	307	328	1518	299	182	1519	84
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	321	308	83	186	634	307	328	1518	299	182	1519	84
Added Vol:	0	8	0	0	15	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	321	316	83	186	649	307	328	1518	299	182	1519	84
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	349	343	90	202	705	334	357	1650	325	198	1651	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	349	343	90	202	705	334	357	1650	325	198	1651	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	349	343	90	202	705	334	357	1650	325	198	1651	91
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.86	0.86	0.90	0.89	0.83	0.90	0.87	0.87	0.90	0.88	0.88
Lanes:	2.00	2.38	0.62	2.00	3.00	1.00	2.00	3.34	0.66	2.00	3.79	0.21
Final Sat.:	3432	3901	1025	3432	5083	1583	3432	5521	1087	3432	6371	352
Capacity Analysis Module:												
Vol/Sat:	0.10	0.09	0.09	0.06	0.14	0.21	0.10	0.30	0.30	0.06	0.26	0.26
Crit Moves:	****					****	****				****	
Green/Cycle:	0.13	0.24	0.24	0.16	0.27	0.27	0.14	0.40	0.40	0.08	0.34	0.34
Volume/Cap:	0.77	0.36	0.36	0.36	0.51	0.77	0.77	0.75	0.75	0.75	0.77	0.77
Delay/Veh:	49.6	31.5	31.5	37.6	30.8	41.4	49.3	27.3	27.3	56.9	31.3	31.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.6	31.5	31.5	37.6	30.8	41.4	49.3	27.3	27.3	56.9	31.3	31.3
LOS by Move:	D	C	C	D	C	D	D	C	C	E	C	C
HCM2k95thQ:	342	195	195	132	289	432	260	571	571	235	623	623

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2 0	2	1	0	2 0	3	0	1	2 0	3	1	0	2 0	3	1	0
Lane Group:	L	RT		RT	L	T		R	L	RT		RT	L	RT		RT
#LnsInGrps:	2	3		3	2	3		1	2	4		4	2	4		4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.97	0.97		xxxx	xxxx	0.85		xxxx	0.98	0.98		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.95	0.95		0.93	0.98	0.83		0.93	0.96	0.96		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	0.91		0.97	0.91	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.86	0.86		0.90	0.89	0.83		0.90	0.87	0.87		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.13	0.24	0.24	0.16	0.27	0.27	0.14	0.40	0.40	0.08	0.34	0.34
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.92	0.92	0.95	0.92	0.96	0.99	0.91	0.91	0.99	0.94	0.94
Q1:	4.8	3.4	3.4	2.5	5.6	8.2	4.9	11.8	11.8	2.8	11.2	11.2
UpstreamVC:	0.00	0.00	0.00	0.53	0.53	0.53	0.79	0.79	0.79	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.84	0.84	0.84	0.51	0.51	0.51	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	0.29	0.41	0.37	0.16	0.31	0.31	1.00	1.00	1.00
Q2:	2.4	0.6	0.6	0.2	0.4	1.1	0.5	0.9	0.9	2.1	2.9	2.9
HCM2KQueue:	7.2	3.9	3.9	2.6	6.0	9.3	5.3	12.7	12.7	4.8	14.0	14.0
70th%Factor:	1.18	1.19	1.19	1.19	1.19	1.18	1.19	1.17	1.17	1.19	1.17	1.17
HCM2k70thQ:	8.5	4.7	4.7	3.1	7.1	11.0	6.4	14.9	14.9	5.7	16.4	16.4
85th%Factor:	1.54	1.56	1.56	1.57	1.55	1.52	1.55	1.50	1.50	1.56	1.49	1.49
HCM2k85thQ:	11.0	6.1	6.1	4.1	9.3	14.1	8.3	19.0	19.0	7.5	20.9	20.9
90th%Factor:	1.68	1.73	1.73	1.75	1.70	1.65	1.71	1.61	1.61	1.71	1.60	1.60
HCM2k90thQ:	12.1	6.8	6.8	4.6	10.2	15.4	9.1	20.5	20.5	8.2	22.4	22.4
95th%Factor:	1.90	1.98	1.98	2.02	1.93	1.86	1.95	1.80	1.80	1.96	1.78	1.78
HCM2k95thQ:	13.7	7.8	7.8	5.3	11.6	17.3	10.4	22.8	22.8	9.4	24.9	24.9
98th%Factor:	2.28	2.44	2.44	2.52	2.33	2.19	2.36	2.08	2.08	2.39	2.04	2.04
HCM2k98thQ:	16.4	9.6	9.6	6.6	14.0	20.4	12.6	26.4	26.4	11.5	28.6	28.6

Cumul + Reduce Dens Alt AM Pk Hr

Future Queue Length Report (feet)

Node	Intersection	Northbound L	T	R	Southbound L	T	R	Eastbound L	T	R	Westbound L	T	R
#3	[HCM2k95thQ]:	228	400	235	701	396	251	212	468	110	201	631	631
#4	[HCM2k95thQ]:	363	236	255	315	427	181	124	449	206	306	466	466
#5	[HCM2k95thQ]:	137	310	548	556	379	104	182	699	116	549	618	618
#6	[HCM2k95thQ]:	73	436	682	1254	260	21	118	635	38	1090	254	426
#7	[HCM2k95thQ]:	123	123	123	160	160	160	76	161	161	103	122	122
#8	[HCM2k95thQ]:	503	191	123	120	592	824	520	852	963	239	681	681
#9	[HCM2k95thQ]:	0	0	0	492	0	86	202	307	0	0	484	239
#10	[HCM2k95thQ]:	138	0	140	0	0	6	0	72	72	65	34	34
#11	[HCM2k95thQ]:	386	53	29	49	154	452	246	311	610	59	378	13
#12	[HCM2k95thQ]:	2	198	198	457	7	7	9	497	1	119	512	512
#13	[HCM2k95thQ]:	30	12	12	18	22	22	9	11	1	23	11	11
#17	[HCM2k95thQ]:	49	151	282	620	166	31	78	580	28	561	730	730
#18	[HCM2k95thQ]:	402	261	148	126	641	117	105	212	563	312	184	76
#19	[HCM2k95thQ]:	225	172	120	171	296	117	181	291	210	251	226	75
#22	[HCM2k95thQ]:	6	52	98	254	41	41	30	199	199	125	227	232
#24	[HCM2k95thQ]:	345	186	186	52	709	709	60	434	434	213	46	46
#25	[HCM2k95thQ]:	202	286	286	135	605	605	338	309	309	171	293	293
#26	[HCM2k95thQ]:	149	433	478	476	418	94	223	422	160	401	243	482
#27	[HCM2k95thQ]:	342	195	195	132	289	432	260	571	571	235	623	623

Cumul + Reduce Dens Alt AM Pk Hr Mitigated

Scenario Report

Scenario:	Cumul + Red Dens Alt AM
Command:	Cumul + Red Dens Alt AM
Volume:	Cumul Proj AM
Geometry:	Cumul Proj
Impact Fee:	Default Impact Fee
Trip Generation:	AM Pk Hr
Trip Distribution:	Cumul No Bridge AM
Paths:	Cumul Proj
Routes:	Default Route
Configuration:	Default Configuration

Cumul + Reduce Dens Alt AM Pk Hr Mitigated

Trip Generation Report

Forecast for AM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	725.00	ElemSchStudent	0.25	0.20	181	145	326	29.5
1	Village West	0.00	Tra Vigne SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	0.60	0.36	0	0	0	0.0
1	Village West	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
1	Village West	701.00	Red Dens SFDU	0.18	0.53	126	372	498	45.1
1	Village West	0.00	GP Alt MFDU	0.10	0.41	0	0	0	0.0
1	Village West	0.00	Tra V Internal	-6.00	-6.00	0	0	0	0.0
1	Village West	0.00	GP Alt Interna	-7.00	-7.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-11.00	-7.00	0	0	0	0.0
	Zone 1 Subtotal					307	517	824	74.6
2	Village East	0.00	Tra Vigne SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
2	Village East	396.00	Red Dens SFDU	0.18	0.53	71	210	281	25.4
	Zone 2 Subtotal					71	210	281	25.4
TOTAL						378	727	1105	100.0

Cumul + Reduce Dens Alt AM Pk Hr Mitigated

Trip Distribution Report

Percent Of Trips Cumul No Bridge AM

Zone	To Gates 1	2	3	4	5	6	7	8	9	10	11
1	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	1.0
2	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	1.0

Zone	To Gates 14	15	16	18	19	20	21	22	23	24	25
1	1.0	2.0	5.0	2.0	26.0	9.0	1.0	2.0	12.0	4.0	2.0
2	1.0	2.0	5.0	2.0	26.0	9.0	1.0	2.0	12.0	4.0	2.0

Zone	To Gates 26
1	2.0
2	2.0

Cumul + Reduce Dens Alt AM Pk Hr Mitigated

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 5 Eight Mile & Lower Sacto Rd	C	34.5	0.842	D	36.0	0.880	+ 1.536 D/V
# 8 Eight Mile Rd & West Ln	D	38.0	0.861	D	41.1	0.905	+ 3.140 D/V

Cumul + Reduce Dens Alt AM Pk Hr Mitigated

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]

Cumul + Reduce Dens Alt AM Pk Hr Mitigated

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.880
Loss Time (sec):	12	Average Delay (sec/veh):	36.0
Optimal Cycle:	101	Level Of Service:	D

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	4 0	1	2 0	4 0	1
Volume Module:	AM Peak Hour											
Base Vol:	115	394	261	543	611	101	125	1432	93	504	1440	286
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	115	394	261	543	611	101	125	1432	93	504	1440	286
Added Vol:	0	0	19	8	0	0	0	42	0	36	80	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	115	394	280	551	611	101	125	1474	93	540	1520	301
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	125	428	304	599	664	110	136	1602	101	587	1652	327
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	125	428	304	599	664	110	136	1602	101	587	1652	327
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	125	428	304	599	664	110	136	1602	101	587	1652	327
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.04	0.12	0.19	0.17	0.19	0.07	0.04	0.24	0.06	0.17	0.24	0.21
Crit Moves:			****	****				****		****		
Green/Cycle:	0.07	0.22	0.22	0.20	0.35	0.35	0.06	0.27	0.27	0.19	0.40	0.60
Volume/Cap:	0.54	0.55	0.88	0.88	0.54	0.20	0.61	0.88	0.24	0.88	0.61	0.35
Delay/Veh:	47.6	35.6	59.7	51.6	26.5	22.9	50.5	40.3	28.9	52.0	24.3	10.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.6	35.6	59.7	51.6	26.5	22.9	50.5	40.3	28.9	52.0	24.3	10.5
LOS by Move:	D	D	E	D	C	C	D	D	C	D	C	B
HCM2k95thQ:	137	310	548	556	379	104	158	699	116	549	472	155

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt AM Pk Hr Mitigated

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	4	0	1	2
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	2	1		2	2	1		2	4	1		2	4	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt AM Pk Hr Mitigated

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.07	0.22	0.22		0.20	0.35	0.35		0.06	0.27	0.27		0.19	0.40	0.60	
ArrivalType:	4				4				4				4			
ProgFactor:	0.99	0.95	0.98		0.99	0.89	0.84		0.99	0.98	0.90		0.99	0.87	0.56	
Q1:	1.7	5.3	8.1		8.2	6.9	1.8		1.9	11.5	2.0		8.1	8.8	2.6	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	1.0	1.2	4.1		4.1	1.1	0.2		1.3	4.6	0.3		4.1	1.5	0.5	
HCM2KQueue:	2.7	6.5	12.2		12.3	8.1	2.0		3.2	16.0	2.3		12.2	10.3	3.1	
70th%Factor:	1.19	1.19	1.17		1.17	1.18	1.20		1.19	1.17	1.19		1.17	1.18	1.19	
HCM2k70thQ:	3.3	7.7	14.3		14.5	9.5	2.4		3.8	18.7	2.7		14.3	12.1	3.7	
85th%Factor:	1.57	1.54	1.50		1.50	1.53	1.58		1.57	1.48	1.58		1.50	1.51	1.57	
HCM2k85thQ:	4.3	10.0	18.2		18.5	12.3	3.2		5.0	23.6	3.6		18.2	15.5	4.9	
90th%Factor:	1.75	1.69	1.62		1.62	1.67	1.76		1.74	1.58	1.76		1.62	1.64	1.74	
HCM2k90thQ:	4.8	10.9	19.7		19.9	13.4	3.6		5.5	25.3	4.0		19.7	16.8	5.4	
95th%Factor:	2.02	1.92	1.81		1.80	1.88	2.04		2.00	1.75	2.03		1.81	1.84	2.01	
HCM2k95thQ:	5.5	12.4	21.9		22.2	15.2	4.2		6.3	28.0	4.6		21.9	18.9	6.2	
98th%Factor:	2.51	2.31	2.09		2.09	2.24	2.55		2.48	1.99	2.54		2.09	2.15	2.49	
HCM2k98thQ:	6.8	14.9	25.4		25.7	18.0	5.2		7.8	31.9	5.8		25.4	22.1	7.7	

Cumul + Reduce Dens Alt AM Pk Hr Mitigated

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.905
Loss Time (sec): 12 | Average Delay (sec/veh): 41.1
Optimal Cycle: 112 | Level Of Service: D

Street Name:	West Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	3	0 2	0 1	2	0 2	0 1	2	0 3	1 0	2	0 3	1 0
Volume Module: AM Peak Hour												
Base Vol:	465	336	59	129	751	427	442	1345	455	137	1344	56
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	465	336	59	129	751	427	442	1345	455	137	1344	56
Added Vol:	56	14	62	12	7	0	0	37	31	81	75	23
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	521	350	121	141	758	427	442	1382	486	218	1419	79
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	566	380	132	153	824	464	480	1502	528	237	1542	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	566	380	132	153	824	464	480	1502	528	237	1542	86
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	566	380	132	153	824	464	480	1502	528	237	1542	86
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.86	0.86	0.90	0.88	0.88
Lanes:	3.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.79	0.21
Final Sat.:	5147	3538	1583	3432	3538	1583	3432	4885	1628	3432	6369	355
Capacity Analysis Module:												
Vol/Sat:	0.11	0.11	0.08	0.04	0.23	0.29	0.14	0.31	0.32	0.07	0.24	0.24
Crit Moves:	****					****			****	****		
Green/Cycle:	0.12	0.31	0.31	0.13	0.32	0.32	0.16	0.36	0.36	0.08	0.28	0.28
Volume/Cap:	0.91	0.34	0.26	0.34	0.72	0.91	0.88	0.86	0.91	0.91	0.88	0.88
Delay/Veh:	60.1	26.5	25.9	40.0	32.0	51.9	56.3	33.1	36.2	77.7	39.9	39.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.1	26.5	25.9	40.0	32.0	51.9	56.3	33.1	36.2	77.7	39.9	39.9
LOS by Move:	E	C	C	D	C	D	E	C	D	E	D	D
HCM2k95thQ:	331	200	129	123	552	744	481	771	863	222	626	626

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt AM Pk Hr Mitigated

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	3	0 2	0 1		2	0 2	0 1		2	0 3	1 0		2	0 3	1 0	
Lane Group:	L	T	R		L	T	R		L	RT	RT		L	RT	RT	
#LnsInGrps:	3	2	1		2	2	1		2	4	4		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.96	0.96		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.94	0.94		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.86	0.86		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt AM Pk Hr Mitigated

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.12	0.31	0.31	0.13	0.32	0.32	0.16	0.36	0.36	0.08	0.28	0.28
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.88	0.87	0.96	0.93	0.98	0.99	0.96	0.97	1.00	0.98	0.98
Q1:	5.3	3.8	2.4	1.9	9.9	12.0	6.7	13.5	14.8	3.4	11.6	11.6
UpstreamVC:	0.32	0.32	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.38	0.38
UpstreamAdj:	0.96	0.96	0.96	0.00	0.00	0.00	0.00	0.00	0.00	0.93	0.93	0.93
EarlyArrAdj:	0.28	0.51	0.46	1.00	1.00	1.00	1.00	1.00	1.00	0.21	0.46	0.46
Q2:	1.6	0.3	0.2	0.5	2.3	5.2	3.8	4.4	5.5	1.1	2.5	2.5
HCM2KQueue:	6.9	4.0	2.6	2.4	12.2	17.2	10.5	17.9	20.4	4.5	14.1	14.1
70th%Factor:	1.18	1.19	1.19	1.19	1.17	1.17	1.18	1.16	1.16	1.19	1.17	1.17
HCM2k70thQ:	8.2	4.8	3.0	2.9	14.4	20.0	12.4	20.8	23.6	5.4	16.5	16.5
85th%Factor:	1.54	1.56	1.58	1.58	1.50	1.47	1.51	1.47	1.45	1.56	1.49	1.49
HCM2k85thQ:	10.7	6.3	4.0	3.8	18.3	25.3	15.9	26.2	29.6	7.0	21.0	21.0
90th%Factor:	1.68	1.73	1.75	1.75	1.62	1.57	1.64	1.56	1.54	1.72	1.60	1.60
HCM2k90thQ:	11.7	7.0	4.5	4.3	19.8	27.0	17.2	28.0	31.5	7.7	22.6	22.6
95th%Factor:	1.91	1.98	2.02	2.02	1.80	1.73	1.83	1.72	1.69	1.97	1.77	1.77
HCM2k95thQ:	13.2	8.0	5.2	4.9	22.1	29.8	19.3	30.8	34.5	8.9	25.1	25.1
98th%Factor:	2.29	2.43	2.52	2.53	2.09	1.97	2.15	1.95	1.91	2.41	2.04	2.04
HCM2k98thQ:	15.9	9.8	6.4	6.2	25.6	33.8	22.5	34.9	38.9	10.8	28.8	28.8

Cumul + Reduce Dens Alt AM Pk Hr Mitigated

Future Queue Length Report (feet)

Node	Intersection	Northbound L	-- T	-- R	Southbound L	-- T	-- R	Eastbound L	-- T	-- R	Westbound L	-- T	-- R
#5	[HCM2k95thQ]:	137	310	548	556	379	104	158	699	116	549	472	155
#8	[HCM2k95thQ]:	331	200	129	123	552	744	481	771	863	222	626	626

Cumul + Reduce Dens Alt PM Pk Hr

Scenario Report

Scenario:	Cumul + Red Dens Alt PM
Command:	Cumul + Red Dens Alt PM
Volume:	Cumul Proj PM
Geometry:	Cumul Proj
Impact Fee:	Default Impact Fee
Trip Generation:	PM Pk Hr
Trip Distribution:	Cumul No Bridge PM
Paths:	Cumul Proj
Routes:	Default Route
Configuration:	Default Configuration

Cumul + Reduce Dens Alt PM Pk Hr

Trip Generation Report

Forecast for PM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	725.00	ElemSchStudent	0.07	0.08	51	58	109	10.7
1	Village West	0.00	Tra Vigne SFDU	0.51	0.30	0	0	0	0.0
1	Village West	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	2.63	2.85	0	0	0	0.0
1	Village West	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
1	Village West	701.00	Red Dens SFDU	0.52	0.31	365	217	582	57.1
1	Village West	0.00	GP Alt MFDU	0.41	0.22	0	0	0	0.0
1	Village West	0.00	Tra V Internal	-64.00	-64.00	0	0	0	0.0
1	Village West	0.00	GP Alt Interna	-76.00	-76.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-106.00	-111.00	0	0	0	0
	Zone 1 Subtotal					416	275	691	67.7
2	Village East	0.00	Tra Vigne SFDU	0.51	0.30	0	0	0	0.0
2	Village East	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
2	Village East	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
2	Village East	396.00	Red Dens SFDU	0.52	0.31	206	123	329	32.3
	Zone 2 Subtotal					206	123	329	32.3
TOTAL						622	398	1020	100.0

Cumul + Reduce Dens Alt PM Pk Hr

Trip Distribution Report

Percent Of Trips Cumul No Bridge PM

To Gates

Zone	1	2	3	4	5	6	7	8	9	10	11
1	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	2.0
2	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	2.0

To Gates

Zone	14	15	16	17	18	19	20	21	22	23
1	1.0	2.0	5.0	1.0	2.0	29.0	10.0	1.0	2.0	14.0
2	1.0	2.0	5.0	1.0	2.0	29.0	10.0	1.0	2.0	14.0

Cumul + Reduce Dens Alt PM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	F	89.7	1.189	F	93.4	1.204	+ 3.646 D/V
# 4 Eight Mile Rd & Davis Rd	D	38.5	0.830	D	39.1	0.842	+ 0.577 D/V
# 5 Eight Mile & Lower Sacto Rd	F	83.4	1.128	F	95.9	1.176	+12.461 D/V
# 6 West Lane & Armstrong Road	F	148.6	1.408	F	149.2	1.408	+ 0.656 D/V
# 7 West Lane & Ham Lane	B	12.4	0.502	B	13.2	0.515	+ 0.746 D/V
# 8 Eight Mile Rd & West Ln	F	94.1	1.224	F	106.2	1.245	+12.122 D/V
# 9 Eight Mile Road & Ham Lane	C	23.2	0.753	C	24.1	0.804	+ 0.821 D/V
# 10 Eight Mile & Leach Rd/St J	A	1.1	0.432	A	5.9	0.486	+ 4.703 D/V
# 11 Eight Mile & MickeGrove/Holman	C	34.2	0.817	D	38.4	0.892	+ 4.220 D/V
# 12 Eight Mile & SR 99 W Frontage	C	30.6	0.867	C	31.2	0.890	+ 0.630 D/V
# 13 Eight Mile & SR 99 E Frontage	A	4.0	0.231	A	3.9	0.235	-0.038 D/V
# 17 Holman & Lt Col Mark Taylor	F	92.2	1.159	F	92.0	1.159	-0.218 D/V
# 18 Morada Lane & West Lane	D	35.5	0.856	D	36.5	0.877	+ 0.992 D/V
# 19 Morada Lane & Holman Road	D	35.1	0.623	D	35.2	0.632	+ 0.096 D/V
# 22 Morada Ln & SR99 W Frontage Rd	C	24.6	0.654	C	24.4	0.654	-0.108 D/V
# 24 West Ln & West Ln Frontage Rd	C	28.6	0.839	C	29.0	0.860	+ 0.355 D/V
# 25 West Lane & Knickerbocker Dr	C	33.5	0.858	C	34.3	0.891	+ 0.779 D/V
# 26 West Lane & Hammer Lane	F	81.1	1.214	F	89.3	1.227	+ 8.273 D/V
# 27 Hammer Lane & Holman Road	D	51.5	1.029	D	51.4	1.029	-0.015 D/V

Cumul + Reduce Dens Alt PM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.204
Loss Time (sec):	12	Average Delay (sec/veh):	93.4
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	PM Peak Hour											
Base Vol:	202	742	201	513	541	218	393	1835	112	273	1898	404
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	202	742	201	513	541	218	393	1835	112	273	1898	404
Added Vol:	0	0	6	12	0	0	0	31	0	4	20	8
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	202	742	207	525	541	218	393	1866	112	277	1918	412
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	220	807	225	571	588	237	427	2028	122	301	2085	448
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	220	807	225	571	588	237	427	2028	122	301	2085	448
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	220	807	225	571	588	237	427	2028	122	301	2085	448
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	3.29	0.71
Final Sat.:	1769	3538	1583	1769	3538	1583	3432	6778	1583	3432	5429	1166
Capacity Analysis Module:												
Vol/Sat:	0.12	0.23	0.14	0.32	0.17	0.15	0.12	0.30	0.08	0.09	0.38	0.38
Crit Moves:		****		****			****				****	
Green/Cycle:	0.20	0.19	0.19	0.27	0.26	0.26	0.10	0.33	0.33	0.10	0.32	0.32
Volume/Cap:	0.63	1.20	0.75	1.20	0.63	0.57	1.20	0.92	0.24	0.92	1.20	1.20
Delay/Veh:	40.8	146	48.4	146.8	34.1	34.0	160.2	38.9	24.8	74.0	130	130.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.8	146	48.4	146.8	34.1	34.0	160.2	38.9	24.8	74.0	130	130.4
LOS by Move:	D	F	D	F	C	C	F	D	C	E	F	F
HCM2k95thQ:	333	1025	384	1290	411	317	500	666	109	250	1400	1400

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	2	0	1	1	0	2	0	1	2	0	4	0	1	2
Lane Group:	L		T		R	L		T		R	L		T		R	L
#LnsInGrps:	1		2		1	1		2		1	2		4		1	2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12		12	12		12		12	12		12		12	12
CrsswalkWid:	8					8					8					8
% Hev Veh:	2					2					2					2
Grade:	0%					0%					0%					0%
Parking/Hr:	No					No					No					No
Bus Stp/Hr:	0					0					0					0
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0					0					0					0
ExclusiveRT:	Include					Include					Include					Include
% RT Prtct:	0					0					0					0
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.90	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.20	0.19	0.19		0.27	0.26	0.26		0.10	0.33	0.33		0.10	0.32	0.32	
ArrivalType:	4				4				4				4			
ProgFactor:	0.96	1.00	0.98		1.00	0.94	0.94		1.00	0.98	0.86		1.00	1.00	1.00	
Q1:	5.4	11.8	5.8		15.9	7.2	5.4		6.1	14.5	2.1		4.3	19.3	19.3	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.99	0.99	0.99		0.82	0.82	0.82	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.11	0.11	0.11		0.46	0.46	0.46	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.03	0.06	0.06		0.12	0.24	0.24	
Q2:	1.6	13.0	2.4		16.4	1.6	1.3		4.8	0.6	0.0		0.9	16.0	16.0	
HCM2KQueue:	7.0	24.8	8.2		32.3	8.8	6.6		10.9	15.2	2.1		5.1	35.4	35.4	
70th%Factor:	1.18	1.15	1.18		1.14	1.18	1.18		1.18	1.17	1.19		1.19	1.14	1.14	
HCM2k70thQ:	8.3	28.7	9.6		36.9	10.4	7.8		12.9	17.7	2.6		6.1	40.3	40.3	
85th%Factor:	1.54	1.43	1.53		1.40	1.52	1.54		1.51	1.48	1.58		1.55	1.39	1.39	
HCM2k85thQ:	10.7	35.5	12.5		45.2	13.4	10.2		16.5	22.4	3.4		7.9	49.2	49.2	
90th%Factor:	1.68	1.52	1.67		1.48	1.66	1.69		1.63	1.59	1.76		1.71	1.47	1.47	
HCM2k90thQ:	11.7	37.6	13.6		47.7	14.6	11.2		17.9	24.1	3.8		8.7	51.9	51.9	
95th%Factor:	1.91	1.65	1.88		1.60	1.87	1.92		1.83	1.76	2.03		1.95	1.58	1.58	
HCM2k95thQ:	13.3	41.0	15.3		51.6	16.5	12.7		20.0	26.6	4.4		10.0	56.0	56.0	
98th%Factor:	2.28	1.85	2.23		1.78	2.21	2.30		2.13	2.01	2.55		2.37	1.77	1.77	
HCM2k98thQ:	16.0	45.9	18.2		57.5	19.4	15.2		23.3	30.5	5.5		12.1	62.4	62.4	

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.842
Loss Time (sec):	12	Average Delay (sec/veh):	39.1
Optimal Cycle:	88	Level Of Service:	D

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	PM Peak Hour											
Base Vol:	338	610	255	238	461	133	237	1712	192	336	1681	176
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	338	610	255	238	461	133	237	1712	192	336	1681	176
Added Vol:	0	0	12	6	0	0	0	50	0	8	32	4
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	338	610	267	244	461	133	237	1762	192	344	1713	180
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	367	663	290	265	501	145	258	1915	209	374	1862	196
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	367	663	290	265	501	145	258	1915	209	374	1862	196
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	367	663	290	265	501	145	258	1915	209	374	1862	196
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.88	0.88
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	3.62	0.38
Final Sat.:	1769	3538	1583	1769	3538	1583	3432	6778	1583	3432	6047	635
Capacity Analysis Module:												
Vol/Sat:	0.21	0.19	0.18	0.15	0.14	0.09	0.08	0.28	0.13	0.11	0.31	0.31
Crit Moves:	****				****			****		****		
Green/Cycle:	0.25	0.23	0.23	0.18	0.17	0.17	0.09	0.34	0.34	0.13	0.37	0.37
Volume/Cap:	0.84	0.81	0.80	0.81	0.84	0.54	0.82	0.84	0.39	0.84	0.82	0.82
Delay/Veh:	49.6	42.7	47.7	53.5	50.8	40.4	60.7	33.8	25.9	56.1	30.7	30.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.6	42.7	47.7	53.5	50.8	40.4	60.7	33.8	25.9	56.1	30.7	30.7
LOS by Move:	D	D	D	D	D	D	E	C	C	E	C	C
HCM2k95thQ:	590	552	475	463	479	228	193	611	197	391	740	740

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Lane Group:	L	T	R	L	T	R	L	T	R	L	RT	RT
#LnsInGrps:	1	2	1	1	2	1	2	4	1	2	4	4
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	0.99	0.99
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.97	0.97
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	0.91
Fnl Sat Adj:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.88	0.88
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.25	0.23	0.23	0.18	0.17	0.17	0.09	0.34	0.34	0.13	0.37	0.37
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.98	0.97	0.98	0.99	0.96	0.99	0.96	0.88	0.99	0.94	0.94
Q1:	9.5	9.0	7.4	6.9	7.0	3.5	3.6	13.0	3.9	5.2	13.4	13.4
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.92	0.92	0.92	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.28	0.28	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.07	0.16	0.14	1.00	1.00	1.00
Q2:	3.7	3.3	3.0	3.1	3.4	1.1	0.3	0.8	0.1	3.1	3.7	3.7
HCM2KQueue:	13.2	12.2	10.3	10.0	10.4	4.7	3.9	13.7	4.0	8.3	17.1	17.1
70th%Factor:	1.17	1.17	1.18	1.18	1.18	1.19	1.19	1.17	1.19	1.18	1.17	1.17
HCM2k70thQ:	15.5	14.4	12.2	11.8	12.3	5.5	4.6	16.1	4.7	9.8	19.9	19.9
85th%Factor:	1.49	1.50	1.51	1.51	1.51	1.56	1.56	1.49	1.56	1.53	1.47	1.47
HCM2k85thQ:	19.7	18.3	15.6	15.2	15.8	7.2	6.1	20.5	6.2	12.7	25.1	25.1
90th%Factor:	1.61	1.62	1.64	1.64	1.64	1.72	1.73	1.60	1.73	1.66	1.57	1.57
HCM2k90thQ:	21.2	19.8	16.9	16.5	17.1	8.0	6.7	22.0	6.9	13.9	26.8	26.8
95th%Factor:	1.79	1.80	1.84	1.84	1.84	1.96	1.98	1.78	1.98	1.88	1.73	1.73
HCM2k95thQ:	23.6	22.1	19.0	18.5	19.2	9.1	7.7	24.4	7.9	15.6	29.6	29.6
98th%Factor:	2.06	2.09	2.15	2.16	2.15	2.40	2.44	2.05	2.44	2.23	1.97	1.97
HCM2k98thQ:	27.2	25.6	22.3	21.7	22.4	11.2	9.5	28.1	9.7	18.5	33.7	33.7

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.176
Loss Time (sec):	12	Average Delay (sec/veh):	95.9
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 2	0 1	2	0 2	0 1	2	0 4	0 1	2	0 3	1 0
Volume Module:	PM Peak Hour											
Base Vol:	183	817	455	610	526	103	199	1916	96	567	1922	498
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	183	817	455	610	526	103	199	1916	96	567	1922	498
Added Vol:	0	0	31	12	0	0	0	68	0	20	44	8
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	183	817	486	622	526	103	199	1984	96	587	1966	506
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	199	888	528	676	572	112	216	2157	104	638	2137	550
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	199	888	528	676	572	112	216	2157	104	638	2137	550
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	199	888	528	676	572	112	216	2157	104	638	2137	550
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.86	0.86
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	4.00	1.00	2.00	3.18	0.82
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	6778	1583	3432	5223	1344
Capacity Analysis Module:												
Vol/Sat:	0.06	0.25	0.33	0.20	0.16	0.07	0.06	0.32	0.07	0.19	0.41	0.41
Crit Moves:			****	****				****		****		
Green/Cycle:	0.12	0.28	0.28	0.17	0.33	0.33	0.06	0.27	0.27	0.16	0.37	0.37
Volume/Cap:	0.49	0.88	1.18	1.18	0.49	0.21	1.10	1.18	0.24	1.18	1.10	1.10
Delay/Veh:	42.1	43.7	136.2	138.0	26.9	24.2	141.1	122	28.8	139.4	84.0	84.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.1	43.7	136.2	138.0	26.9	24.2	141.1	122	28.8	139.4	84.0	84.0
LOS by Move:	D	D	F	F	C	C	F	F	C	F	F	F
HCM2k95thQ:	174	731	1179	860	328	111	357	1289	119	824	1397	1397

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	0 1		2	0 2	0 1		2	0 4	0 1		2	0 3	1 0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	2	2	1		2	2	1		2	4	1		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.86	0.86	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.12	0.28	0.28		0.17	0.33	0.33		0.06	0.27	0.27		0.16	0.37	0.37	
ArrivalType:		4				4				4				4		
ProgFactor:	0.97	0.98	1.00		1.00	0.89	0.86		1.00	1.00	0.90		1.00	1.00	1.00	
Q1:		2.6	12.1	14.7		9.7	5.9	1.9		3.1	16.5	2.0		9.1	20.5	20.5
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:		0.9	4.7	14.5		10.6	0.9	0.3		4.4	15.8	0.3		10.2	14.8	14.8
HCM2KQueue:		3.5	16.9	29.1		20.3	6.9	2.2		7.5	32.2	2.4		19.3	35.3	35.3
70th%Factor:	1.19	1.17	1.15		1.16	1.18	1.19		1.18	1.14	1.19		1.16	1.14	1.14	
HCM2k70thQ:		4.2	19.6	33.4		23.6	8.1	2.6		8.9	36.9	2.8		22.4	40.2	40.2
85th%Factor:	1.57	1.47	1.41		1.45	1.54	1.58		1.53	1.40	1.58		1.46	1.39	1.39	
HCM2k85thQ:		5.5	24.8	41.2		29.5	10.6	3.4		11.5	45.2	3.7		28.2	49.1	49.1
90th%Factor:	1.74	1.57	1.49		1.54	1.68	1.76		1.67	1.48	1.76		1.55	1.47	1.47	
HCM2k90thQ:		6.1	26.5	43.5		31.4	11.6	3.8		12.6	47.7	4.1		30.0	51.8	51.8
95th%Factor:	1.99	1.74	1.62		1.69	1.91	2.03		1.89	1.60	2.03		1.71	1.58	1.58	
HCM2k95thQ:		7.0	29.2	47.2		34.4	13.1	4.4		14.3	51.6	4.8		32.9	55.9	55.9
98th%Factor:	2.46	1.97	1.81		1.91	2.29	2.55		2.26	1.78	2.53		1.93	1.77	1.77	
HCM2k98thQ:		8.6	33.3	52.6		38.8	15.7	5.6		17.0	57.5	6.0		37.2	62.3	62.3

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec):	100	Critical Vol./Cap.(X):	1.408
Loss Time (sec):	12	Average Delay (sec/veh):	149.2
Optimal Cycle:	180	Level Of Service:	F

Street Name:	West Lane								Armstrong Road			
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 2	0 1		1	0 2	0 1		1	0 2	0 1		1	0 2	0 1	
Volume Module:	PM Peak Hour															
Base Vol:	46	759	451		665	451	29		58	599	24		548	603	574	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	46	759	451		665	451	29		58	599	24		548	603	574	
Added Vol:	0	28	0		0	44	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	46	787	451		665	495	29		58	599	24		548	603	574	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	50	855	490		723	538	32		63	651	26		596	655	624	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	50	855	490		723	538	32		63	651	26		596	655	624	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	50	855	490		723	538	32		63	651	26		596	655	624	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Lanes:	1.00	2.00	1.00		1.00	2.00	1.00		1.00	2.00	1.00		1.00	2.00	1.00	
Final Sat.:	1769	3538	1583		1769	3538	1583		1769	3538	1583		1769	3538	1583	
Capacity Analysis Module:																
Vol/Sat:	0.03	0.24	0.31		0.41	0.15	0.02		0.04	0.18	0.02		0.34	0.19	0.39	
Crit Moves:			****		****					****			****			
Green/Cycle:	0.08	0.22	0.22		0.29	0.43	0.43		0.03	0.13	0.13		0.24	0.34	0.34	
Volume/Cap:	0.35	1.10	1.41		1.41	0.35	0.05		1.16	1.41	0.13		1.41	0.55	1.16	
Delay/Veh:	45.1	102	239.0		230.5	19.3	16.6		221.7	240	38.7		235.4	27.3	125.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	45.1	102	239.0		230.5	19.3	16.6		221.7	240	38.7		235.4	27.3	125.1	
LOS by Move:	D	F	F		F	B	B		F	F	D		F	C	F	
HCM2k95thQ:	93	957	1364		1898	233	23		252	1022	39		1606	383	1322	

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 2	0 1		1	0 2	0 1		1	0 2	0 1		1	0 2	0 1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	2	1		1	2	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.08	0.22	0.22	0.29	0.43	0.43	0.03	0.13	0.13	0.24	0.34	0.34
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	1.00	1.00	1.00	0.80	0.75	1.00	1.00	0.96	1.00	0.90	1.00
Q1:	1.3	12.5	13.6	20.1	4.2	0.4	1.8	9.5	0.6	16.5	7.0	17.3
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.5	10.5	20.7	29.3	0.5	0.0	3.4	15.2	0.1	24.6	1.2	15.8
HCM2KQueue:	1.8	23.0	34.3	49.4	4.8	0.4	5.2	24.7	0.8	41.2	8.1	33.1
70th%Factor:	1.20	1.16	1.14	1.13	1.19	1.20	1.19	1.15	1.20	1.14	1.18	1.14
HCM2k70thQ:	2.2	26.6	39.2	55.7	5.6	0.5	6.1	28.6	0.9	46.7	9.6	37.9
85th%Factor:	1.58	1.44	1.40	1.36	1.56	1.60	1.55	1.43	1.59	1.38	1.53	1.40
HCM2k85thQ:	2.9	33.1	47.9	67.0	7.4	0.7	8.0	35.4	1.2	56.6	12.4	46.4
90th%Factor:	1.77	1.53	1.47	1.43	1.72	1.79	1.71	1.52	1.79	1.45	1.67	1.48
HCM2k90thQ:	3.2	35.1	50.5	70.8	8.1	0.8	8.8	37.5	1.3	59.7	13.6	48.9
95th%Factor:	2.04	1.67	1.59	1.54	1.96	2.09	1.95	1.65	2.08	1.56	1.88	1.60
HCM2k95thQ:	3.7	38.3	54.6	75.9	9.3	0.9	10.1	40.9	1.6	64.2	15.3	52.9
98th%Factor:	2.57	1.87	1.77	1.72	2.39	2.67	2.37	1.85	2.64	1.74	2.23	1.78
HCM2k98thQ:	4.7	43.0	60.8	85.0	11.4	1.2	12.2	45.8	2.0	71.7	18.2	58.9

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.515
Loss Time (sec): 9 Average Delay (sec/veh): 13.2
Optimal Cycle: 35 Level Of Service: B

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Volume Module:	PM Peak Hour											
Base Vol:	53	31	35	47	22	30	54	1054	29	46	1054	36
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	31	35	47	22	30	54	1054	29	46	1054	36
Added Vol:	0	0	8	0	0	0	0	20	0	13	31	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	53	31	43	47	22	30	54	1074	29	59	1085	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	58	34	47	51	24	33	59	1167	32	64	1179	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	58	34	47	51	24	33	59	1167	32	64	1179	39
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	58	34	47	51	24	33	59	1167	32	64	1179	39
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.79	0.79	0.76	0.76	0.76	0.93	0.93	0.93	0.93	0.93	0.93
Lanes:	0.42	0.24	0.34	0.48	0.22	0.30	1.00	1.95	0.05	1.00	1.94	0.06
Final Sat.:	626	366	508	682	319	436	1769	3431	93	1769	3407	113
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.07	0.07	0.07	0.03	0.34	0.34	0.04	0.35	0.35
Crit Moves:		****						****		****		
Green/Cycle:	0.18	0.18	0.18	0.18	0.18	0.18	0.06	0.66	0.66	0.07	0.67	0.67
Volume/Cap:	0.51	0.51	0.51	0.42	0.42	0.42	0.52	0.51	0.51	0.51	0.52	0.52
Delay/Veh:	38.9	38.9	38.9	37.6	37.6	37.6	49.5	8.9	8.9	48.5	8.7	8.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.9	38.9	38.9	37.6	37.6	37.6	49.5	8.9	8.9	48.5	8.7	8.7
LOS by Move:	D	D	D	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	213	213	213	161	161	161	127	238	238	133	231	231

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	0	0	1!	0	0	0	0	1!	0	0	1	0	1	1	0	1
Lane Group:	LTR	LTR	LTR		LTR	LTR	LTR		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	2	2		1	2	2	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	5	5	5		5	5	5		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	1.00	1.00	1.00		1.00	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	1.00	1.00	1.00		1.00	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	0.95	0.95	0.95		0.96	0.96	0.96		xxxx	1.00	1.00		xxxx	1.00	1.00	
LT Adj:	0.85	0.85	0.85		0.81	0.81	0.81		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.79	0.79	0.79		0.76	0.76	0.76		0.93	0.98	0.98		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	0.95		1.00	0.95	0.95	
Fnl Sat Adj:	0.79	0.79	0.79		0.76	0.76	0.76		0.93	0.93	0.93		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	100	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	16.86	16.86	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	17.86	17.86	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	17.86	17.86	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	1	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	1	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	58	51	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	0.42	0.48	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	0.48	0.42	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	1.60	1.42	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	108	138	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	3.00	3.83	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	1.33	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	3.00	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	2.31	2.77	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	0.76	0.76	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	5.56	7.31	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	12.30	10.55	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	1.62	2.27	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	0.53	0.58	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	1.56	1.61	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	1.37	1.69	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	0.16	0.17	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	0.85	0.80	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	0.85	0.80	xxxxxx	xxxxxx

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.18	0.18	0.18	0.18	0.18	0.18	0.06	0.66	0.66	0.07	0.67	0.67
ArrivalType:		4			4			4			4	
ProgFactor:	0.96	0.96	0.96	0.95	0.95	0.95	0.99	0.42	0.42	0.99	0.40	0.40
Q1:	3.3	3.3	3.3	2.5	2.5	2.5	1.6	3.8	3.8	1.7	3.7	3.7
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	1.0	1.0	1.0	0.7	0.7	0.7	0.9	1.0	1.0	0.9	1.1	1.1
HCM2KQueue:	4.3	4.3	4.3	3.2	3.2	3.2	2.5	4.9	4.9	2.6	4.7	4.7
70th%Factor:	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19
HCM2k70thQ:	5.2	5.2	5.2	3.8	3.8	3.8	3.0	5.8	5.8	3.2	5.6	5.6
85th%Factor:	1.56	1.56	1.56	1.57	1.57	1.57	1.58	1.56	1.56	1.57	1.56	1.56
HCM2k85thQ:	6.8	6.8	6.8	5.1	5.1	5.1	4.0	7.6	7.6	4.2	7.3	7.3
90th%Factor:	1.72	1.72	1.72	1.74	1.74	1.74	1.75	1.71	1.71	1.75	1.72	1.72
HCM2k90thQ:	7.5	7.5	7.5	5.6	5.6	5.6	4.4	8.3	8.3	4.6	8.1	8.1
95th%Factor:	1.97	1.97	1.97	2.00	2.00	2.00	2.02	1.96	1.96	2.02	1.96	1.96
HCM2k95thQ:	8.5	8.5	8.5	6.5	6.5	6.5	5.1	9.5	9.5	5.3	9.2	9.2
98th%Factor:	2.42	2.42	2.42	2.48	2.48	2.48	2.52	2.39	2.39	2.52	2.40	2.40
HCM2k98thQ:	10.5	10.5	10.5	8.0	8.0	8.0	6.3	11.6	11.6	6.6	11.3	11.3

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 1.245
Loss Time (sec): 12 Average Delay (sec/veh): 106.2
Optimal Cycle: 180 Level Of Service: F

Street Name:	West Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	3 1	0	2 0	3 1	0
Volume Module:	PM Peak Hour											
Base Vol:	757	748	108	150	687	445	718	1787	474	159	1781	102
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	757	748	108	150	687	445	718	1787	474	159	1781	102
Added Vol:	30	7	77	19	12	0	0	65	47	65	41	12
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	787	755	185	169	699	445	718	1852	521	224	1822	114
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	855	821	201	184	760	484	780	2013	566	243	1980	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	855	821	201	184	760	484	780	2013	566	243	1980	124
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	855	821	201	184	760	484	780	2013	566	243	1980	124
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.86	0.86	0.90	0.88	0.88
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.12	0.88	2.00	3.76	0.24
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	5115	1439	3432	6321	396
Capacity Analysis Module:												
Vol/Sat:	0.25	0.23	0.13	0.05	0.21	0.31	0.23	0.39	0.39	0.07	0.31	0.31
Crit Moves:	****					****	****				****	
Green/Cycle:	0.20	0.36	0.36	0.08	0.25	0.25	0.18	0.37	0.37	0.07	0.25	0.25
Volume/Cap:	1.25	0.64	0.35	0.64	0.87	1.25	1.25	1.07	1.07	1.07	1.25	1.25
Delay/Veh:	162.3	27.6	23.7	49.2	46.1	167.9	164.2	71.8	71.8	126.0	153	152.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	162.3	27.6	23.7	49.2	46.1	167.9	164.2	71.8	71.8	126.0	153	152.8
LOS by Move:	F	C	C	D	D	F	F	E	E	F	F	F
HCM2k95thQ:	1018	456	185	197	653	1181	1023	1295	1295	279	1287	1287

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	3	1	0	2
Lane Group:	L	T	R		L	T	R		L	RT	RT		L	RT	RT	
#LnsInGrps:	2	2	1		2	2	1		2	4	4		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.97	0.97		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.95	0.95		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.86	0.86		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.20	0.36	0.36		0.08	0.25	0.25		0.18	0.37	0.37		0.07	0.25	0.25	
ArrivalType:	4				4				4				4			
ProgFactor:	1.00	0.90	0.85		0.99	0.98	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q1:	12.2	9.0	3.5		2.5	10.5	13.4		11.2	19.7	19.7		3.5	16.1	16.1	
UpstreamVC:	0.46	0.46	0.46		0.00	0.00	0.00		0.00	0.00	0.00		0.42	0.42	0.42	
UpstreamAdj:	0.89	0.89	0.89		0.00	0.00	0.00		0.00	0.00	0.00		0.91	0.91	0.91	
EarlyArrAdj:	0.35	0.52	0.47		1.00	1.00	1.00		1.00	1.00	1.00		0.19	0.42	0.42	
Q2:	12.4	0.9	0.3		1.5	4.3	15.7		13.6	12.7	12.7		2.3	16.1	16.1	
HCM2KQueue:	24.7	9.9	3.7		4.0	14.8	29.2		24.8	32.4	32.4		5.8	32.2	32.2	
70th%Factor:	1.15	1.18	1.19		1.19	1.17	1.15		1.15	1.14	1.14		1.19	1.14	1.14	
HCM2k70thQ:	28.4	11.6	4.4		4.7	17.3	33.5		28.6	37.1	37.1		6.9	36.8	36.8	
85th%Factor:	1.43	1.52	1.56		1.56	1.48	1.41		1.43	1.40	1.40		1.55	1.40	1.40	
HCM2k85thQ:	35.3	15.0	5.8		6.2	22.0	41.2		35.5	45.4	45.4		8.9	45.1	45.1	
90th%Factor:	1.52	1.64	1.73		1.73	1.59	1.49		1.52	1.48	1.48		1.70	1.48	1.48	
HCM2k90thQ:	37.4	16.2	6.5		6.9	23.6	43.6		37.5	47.9	47.9		9.8	47.6	47.6	
95th%Factor:	1.65	1.85	1.99		1.98	1.76	1.62		1.65	1.60	1.60		1.94	1.60	1.60	
HCM2k95thQ:	40.7	18.2	7.4		7.9	26.1	47.2		40.9	51.8	51.8		11.2	51.5	51.5	
98th%Factor:	1.85	2.17	2.45		2.44	2.02	1.81		1.85	1.78	1.78		2.34	1.78	1.78	
HCM2k98thQ:	45.6	21.4	9.1		9.7	29.9	52.7		45.8	57.8	57.8		13.5	57.4	57.4	

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.804
Loss Time (sec): 9 | Average Delay (sec/veh): 24.1
Optimal Cycle: 69 | Level Of Service: C

Street Name:	Ham Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	0	0	1	0	0	0	1	1	0
	4	0	0	0	0	1						
Volume Module:	PM Peak Hour											
Base Vol:	0	0	0	438	0	69	161	1929	0	0	1976	445
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	438	0	69	161	1929	0	0	1976	445
Added Vol:	0	0	0	15	0	29	19	143	0	0	159	9
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	453	0	98	180	2072	0	0	2135	454
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	492	0	107	196	2252	0	0	2321	493
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	492	0	107	196	2252	0	0	2321	493
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	492	0	107	196	2252	0	0	2321	493
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.93	1.00	0.83	0.93	0.89	1.00	1.00	0.89	0.83
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	4.00	0.00	0.00	4.00	1.00
Final Sat.:	0	0	0	1769	0	1583	1769	6778	0	0	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.28	0.00	0.07	0.11	0.33	0.00	0.00	0.34	0.31
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.35	0.00	0.35	0.14	0.56	0.00	0.00	0.43	0.43
Volume/Cap:	0.00	0.00	0.00	0.80	0.00	0.19	0.80	0.59	0.00	0.00	0.80	0.73
Delay/Veh:	0.0	0.0	0.0	37.2	0.0	23.1	59.2	14.5	0.0	0.0	26.8	28.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	37.2	0.0	23.1	59.2	14.5	0.0	0.0	26.8	28.1
LOS by Move:	A	A	A	D	A	C	E	B	A	A	C	C
HCM2k95thQ:	0	0	0	662	0	101	296	401	0	0	704	520

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	0	0	0	0 0	1	0	0	0 1	1	0	4	0 0	0	0	4	0 1
Lane Group:	xxxx	xxxx	xxxx		L	xxxx		R	L		T	xxxx	xxxx		T	R
#LnsInGrps:	0	0	0		1	0		1	1		4	0	0		4	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	xxxx	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		xxxx	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx		xxxx	1.00	1.00			
Hev Veh Adj:	xxxx	xxxx	xxxxx	0.98	xxxx	0.98	0.98	0.98	xxxxx		xxxx	0.98	0.98			
Grade Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx		xxxx	1.00	1.00			
Parking Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	1.00	xxxxx		xxxx	xxxx	1.00			
Bus Stp Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	1.00	xxxxx		xxxx	xxxx	1.00			
Area Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx		xxxx	1.00	1.00			
RT Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.85	xxxx	xxxx	xxxxx		xxxx	xxxx	0.85			
LT Adj:	xxxx	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx		xxxx	xxxx	xxxxx			
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00			
HCM Sat Adj:	1.00	1.00	1.00	0.93	1.00	0.83	0.93	0.98	1.00		1.00	0.98	0.83			
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00			
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00		1.00	0.91	1.00			
Fnl Sat Adj:	1.00	1.00	1.00	0.93	1.00	0.83	0.93	0.89	1.00		1.00	0.89	0.83			
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00		0.00	1.00	1.00			

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.00	0.00	0.00	0.35	0.00	0.35	0.14	0.56	0.00	0.00	0.43	0.43
ArrivalType:	4				4				4				4			
ProgFactor:	1.00	1.00	1.00	0.94	1.00	0.84	0.99	0.68	1.00	1.00	0.91	0.89
Q1:	0.0	0.0	0.0	11.7	0.0	1.7	5.2	7.7	0.0	0.0	14.1	10.1
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.00	0.00	0.49	0.49
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.83	0.00	0.00	0.87	0.87
EarlyArrAdj:	0.00	0.00	0.00	1.00	0.00	1.00	0.26	0.63	0.00	0.00	0.56	0.50
Q2:	0.0	0.0	0.0	3.3	0.0	0.2	0.9	0.9	0.0	0.0	2.1	1.3
HCM2KQueue:	0.0	0.0	0.0	15.1	0.0	2.0	6.1	8.6	0.0	0.0	16.1	11.4
70th%Factor:	1.20	1.20	1.20	1.17	1.20	1.20	1.19	1.18	1.20	1.20	1.17	1.18
HCM2k70thQ:	0.0	0.0	0.0	17.6	0.0	2.4	7.3	10.1	0.0	0.0	18.8	13.4
85th%Factor:	1.60	1.60	1.60	1.48	1.60	1.58	1.54	1.53	1.60	1.60	1.48	1.50
HCM2k85thQ:	0.0	0.0	0.0	22.3	0.0	3.1	9.5	13.1	0.0	0.0	23.8	17.2
90th%Factor:	1.80	1.80	1.80	1.59	1.80	1.76	1.69	1.66	1.80	1.80	1.58	1.63
HCM2k90thQ:	0.0	0.0	0.0	23.9	0.0	3.5	10.4	14.2	0.0	0.0	25.5	18.6
95th%Factor:	2.10	2.10	2.10	1.76	2.10	2.04	1.93	1.87	2.10	2.10	1.74	1.82
HCM2k95thQ:	0.0	0.0	0.0	26.5	0.0	4.1	11.8	16.0	0.0	0.0	28.2	20.8
98th%Factor:	2.70	2.70	2.70	2.01	2.70	2.56	2.32	2.22	2.70	2.70	1.99	2.11
HCM2k98thQ:	0.0	0.0	0.0	30.3	0.0	5.1	14.3	19.0	0.0	0.0	32.1	24.2

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St J

Cycle (sec): 100 Critical Vol./Cap.(X): 0.486
Loss Time (sec): 12 Average Delay (sec/veh): 5.9
Optimal Cycle: 40 Level Of Service: A

Street Name:	Leach Road/Street J								Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	1	0 1	1	0	0	1 0	1	0	3	1 0	1	0	3	1 0
Volume Module:	PM Peak Hour															
Base Vol:	0	0	0		0	0	4		0	1894	0		0	2364	4	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		0	0	4		0	1894	0		0	2364	4	
Added Vol:	47	0	47		0	0	0		0	80	79		79	121	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	47	0	47		0	0	4		0	1974	79		79	2485	4	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	51	0	51		0	0	4		0	2146	86		86	2701	4	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	51	0	51		0	0	4		0	2146	86		86	2701	4	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	51	0	51		0	0	4		0	2146	86		86	2701	4	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	1.00	0.83		1.00	1.00	0.83		1.00	0.89	0.89		0.93	0.89	0.89	
Lanes:	1.00	1.00	1.00		1.00	0.00	1.00		1.00	3.85	0.15		1.00	3.99	0.01	
Final Sat.:	1769	1900	1583		1900	0	1583		1900	6478	259		1769	6767	11	
Capacity Analysis Module:																
Vol/Sat:	0.03	0.00	0.03		0.00	0.00	0.00		0.00	0.33	0.33		0.05	0.40	0.40	
Crit Moves:	****					****			****					****		
Green/Cycle:	0.06	0.00	0.06		0.00	0.00	0.00		0.00	0.72	0.72		0.10	0.82	0.82	
Volume/Cap:	0.49	0.00	0.54		0.00	0.00	xxxx		0.00	0.46	0.46		0.46	0.49	0.49	
Delay/Veh:	49.1	0.0	52.1		0.0	0.0	0.0		0.0	6.1	6.1		43.9	2.7	2.7	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	49.1	0.0	52.1		0.0	0.0	0.0		0.0	6.1	6.1		43.9	2.7	2.7	
LOS by Move:	D	A	D		A	A	A		A	A	A		D	A	A	
HCM2k95thQ:	112	0	120		0	0	6		0	101	101		151	49	49	

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 1	0 1		1	0 0	1 0		1	0 3	1 0		1	0 3	1 0	
Lane Group:	L	T	R		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	4	4		1	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	xxxx	0.98		xxxx	xxxx	0.98		xxxx	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.99	0.99		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	1.00	0.83		1.00	1.00	0.83		1.00	0.97	0.97		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.91	0.91		1.00	0.91	0.91	
Fnl Sat Adj:	0.93	1.00	0.83		1.00	1.00	0.83		1.00	0.89	0.89		0.93	0.89	0.89	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	1.00		0.00	0.00	0.00		0.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.06	0.00	0.06		0.00	0.00	0.00		0.00	0.72	0.72		0.10	0.82	0.82	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	1.00	0.99		1.00	1.00	1.00		1.00	0.19	0.19		0.98	0.00	0.00	
Q1:	1.4	0.0	1.4		0.0	0.0	0.1		0.0	1.4	1.4		2.2	0.0	0.0	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.59	0.59		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.78	0.78		0.00	0.00	0.00	
EarlyArrAdj:	1.00	0.00	1.00		0.00	0.00	0.00		0.00	0.68	0.68		1.00	1.00	1.00	
Q2:	0.8	0.0	1.0		0.0	0.0	0.0		0.0	0.6	0.6		0.8	0.9	0.9	
HCM2KQueue:	2.2	0.0	2.4		0.0	0.0	0.1		0.0	2.0	2.0		3.0	0.9	0.9	
70th%Factor:	1.19	1.20	1.19		1.20	1.20	1.20		1.20	1.20	1.20		1.19	1.20	1.20	
HCM2k70thQ:	2.6	0.0	2.8		0.0	0.0	0.1		0.0	2.4	2.4		3.6	1.1	1.1	
85th%Factor:	1.58	1.60	1.58		1.60	1.60	1.60		1.60	1.58	1.58		1.57	1.59	1.59	
HCM2k85thQ:	3.5	0.0	3.7		0.0	0.0	0.2		0.0	3.1	3.1		4.7	1.5	1.5	
90th%Factor:	1.76	1.80	1.76		1.80	1.80	1.80		1.80	1.76	1.76		1.74	1.78	1.78	
HCM2k90thQ:	3.9	0.0	4.2		0.0	0.0	0.2		0.0	3.5	3.5		5.2	1.7	1.7	
95th%Factor:	2.03	2.10	2.03		2.10	2.10	2.10		2.10	2.04	2.04		2.01	2.07	2.07	
HCM2k95thQ:	4.5	0.0	4.8		0.0	0.0	0.3		0.0	4.0	4.0		6.0	1.9	1.9	
98th%Factor:	2.54	2.70	2.53		2.70	2.70	2.69		2.70	2.56	2.56		2.49	2.63	2.63	
HCM2k98thQ:	5.6	0.0	6.0		0.0	0.0	0.3		0.0	5.1	5.1		7.5	2.5	2.5	

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Cycle (sec):	100	Critical Vol./Cap.(X):	0.892
Loss Time (sec):	12	Average Delay (sec/veh):	38.4
Optimal Cycle:	106	Level Of Service:	D

Street Name:	Micke Grove Road/Holman Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	1	0	2	0	1	2	0	4	0	1	2	0	4	0	1
Volume Module:	PM Peak Hour											
Base Vol:	602	190	43	42	200	246	384	1509	418	70	1483	27
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	602	190	43	42	200	246	384	1509	418	70	1483	27
Added Vol:	73	0	0	0	0	31	20	60	47	0	95	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	675	190	43	42	200	277	404	1569	465	70	1578	27
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	734	207	47	46	217	301	439	1705	505	76	1715	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	734	207	47	46	217	301	439	1705	505	76	1715	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	734	207	47	46	217	301	439	1705	505	76	1715	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	3538	1583	1769	3538	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.21	0.06	0.03	0.03	0.06	0.19	0.13	0.25	0.32	0.02	0.25	0.02
Crit Moves:	****					****	****				****	
Green/Cycle:	0.24	0.31	0.31	0.14	0.21	0.21	0.14	0.40	0.40	0.03	0.28	0.28
Volume/Cap:	0.89	0.19	0.09	0.19	0.29	0.89	0.89	0.63	0.80	0.80	0.89	0.07
Delay/Veh:	48.8	25.1	24.3	38.4	33.2	62.5	60.3	24.6	33.7	84.8	40.1	26.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.8	25.1	24.3	38.4	33.2	62.5	60.3	24.6	33.7	84.8	40.1	26.2
LOS by Move:	D	C	C	D	C	E	E	C	C	F	D	C
HCM2k95thQ:	644	108	46	67	145	554	461	493	650	63	601	28

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																				
Lanes:	2	0	2	0	1	1	0	2	0	1	2	0	4	0	1	2	0	4	0	1
Lane Group:	L		T		R	L		T		R	L		T		R	L		T		R
#LnsInGrps:	2		2		1	1		2		1	2		4		1	2		4		1
HCM Ops Input Saturation Adj Module:																				
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12
CrsswalkWid:	8					8					8					8				
% Hev Veh:	2					2					2					2				
Grade:	0%					0%					0%					0%				
Parking/Hr:	No					No					No					No				
Bus Stp/Hr:	0					0					0					0				
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																			
Cnft Ped/Hr:	0					0					0					0				
ExclusiveRT:	Include					Include					Include					Include				
% RT Prtct:	0					0					0					0				
HCM Ops f(lt) Adj Case Module:																				
f(lt) Case:	1	xxxx		xxxx		1	xxxx		xxxx		1	xxxx		xxxx		1	xxxx		xxxx	
HCM Ops Saturation Adj Module:																				
Ln Wid Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Hev Veh Adj:	0.98	0.98		0.98		0.98	0.98		0.98		0.98	0.98		0.98		0.98	0.98		0.98	
Grade Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Parking Adj:	xxxx	xxxx		1.00		xxxx	xxxx		1.00		xxxx	xxxx		1.00		xxxx	xxxx		1.00	
Bus Stp Adj:	xxxx	xxxx		1.00		xxxx	xxxx		1.00		xxxx	xxxx		1.00		xxxx	xxxx		1.00	
Area Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
RT Adj:	xxxx	xxxx		0.85		xxxx	xxxx		0.85		xxxx	xxxx		0.85		xxxx	xxxx		0.85	
LT Adj:	0.95	xxxx		xxxxx		0.95	xxxx		xxxxx		0.95	xxxx		xxxxx		0.95	xxxx		xxxxx	
PedBike Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
HCM Sat Adj:	0.93	0.98		0.83		0.93	0.98		0.83		0.93	0.98		0.83		0.93	0.98		0.83	
Usr Sat Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Sat Adj:	0.97	0.95		1.00		1.00	0.95		1.00		0.97	0.91		1.00		0.97	0.91		1.00	
Fnl Sat Adj:	0.90	0.93		0.83		0.93	0.93		0.83		0.90	0.89		0.83		0.90	0.89		0.83	
Delay Adjustment Factor Module:																				
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																			
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																			
DelAdjFctr:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.24	0.31	0.31	0.14	0.21	0.21	0.14	0.40	0.40	0.03	0.28	0.28
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.87	0.86	0.95	0.93	0.99	0.99	0.88	0.92	1.00	0.98	0.87
Q1:	10.0	1.9	0.8	1.1	2.5	8.0	6.1	9.2	11.4	1.1	12.3	0.5
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.89	0.89	0.89
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.33	0.33
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.04	0.17	0.15
Q2:	4.6	0.2	0.1	0.2	0.4	4.3	3.9	1.6	3.3	0.1	1.2	0.0
HCM2KQueue:	14.6	2.1	0.9	1.3	2.9	12.3	10.0	10.8	14.7	1.2	13.5	0.5
70th%Factor:	1.17	1.19	1.20	1.20	1.19	1.17	1.18	1.18	1.17	1.20	1.17	1.20
HCM2k70thQ:	17.1	2.5	1.1	1.6	3.4	14.4	11.8	12.7	17.2	1.5	15.8	0.6
85th%Factor:	1.48	1.58	1.59	1.59	1.57	1.50	1.51	1.51	1.48	1.59	1.49	1.59
HCM2k85thQ:	21.7	3.4	1.4	2.1	4.5	18.4	15.2	16.3	21.9	1.9	20.1	0.8
90th%Factor:	1.59	1.76	1.78	1.77	1.75	1.62	1.64	1.63	1.59	1.78	1.60	1.79
HCM2k90thQ:	23.2	3.7	1.6	2.3	5.0	19.9	16.4	17.6	23.4	2.2	21.6	0.9
95th%Factor:	1.77	2.03	2.07	2.06	2.01	1.80	1.84	1.83	1.76	2.06	1.78	2.08
HCM2k95thQ:	25.8	4.3	1.8	2.7	5.8	22.2	18.5	19.7	26.0	2.5	24.0	1.1
98th%Factor:	2.03	2.55	2.63	2.61	2.50	2.09	2.16	2.14	2.02	2.61	2.05	2.66
HCM2k98thQ:	29.5	5.4	2.3	3.4	7.2	25.7	21.6	23.0	29.8	3.2	27.7	1.4

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Eight Mile & SR 99 W Frontage

Cycle (sec):	100	Critical Vol./Cap.(X):	0.890
Loss Time (sec):	12	Average Delay (sec/veh):	31.2
Optimal Cycle:	105	Level Of Service:	C

Street Name:	SR 99 West Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1 0	1 0	0	1 0	1 0	3	0 1	2 0	2	1 0
Volume Module:	PM Peak Hour											
Base Vol:	2	10	157	339	3	2	6	1622	1	132	1589	396
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	10	157	339	3	2	6	1622	1	132	1589	396
Added Vol:	0	0	0	0	0	0	0	60	0	0	95	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	2	10	157	339	3	2	6	1682	1	132	1684	396
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	2	11	171	368	3	2	7	1828	1	143	1830	430
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	11	171	368	3	2	7	1828	1	143	1830	430
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	2	11	171	368	3	2	7	1828	1	143	1830	430
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.84	0.84	0.93	0.92	0.92	0.93	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	0.06	0.94	1.00	0.60	0.40	1.00	3.00	1.00	2.00	2.43	0.57
Final Sat.:	1769	96	1504	1769	1050	700	1769	5083	1583	3432	4000	941
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.11	0.21	0.00	0.00	0.00	0.36	0.00	0.04	0.46	0.46
Crit Moves:		****		****			****				****	
Green/Cycle:	0.10	0.13	0.13	0.23	0.26	0.26	0.00	0.46	0.46	0.05	0.51	0.51
Volume/Cap:	0.01	0.89	0.89	0.89	0.01	0.01	0.89	0.77	0.00	0.77	0.89	0.89
Delay/Veh:	40.3	77.5	77.5	57.5	27.5	27.5	310.7	24.1	14.4	64.9	26.1	26.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.3	77.5	77.5	57.5	27.5	27.5	310.7	24.1	14.4	64.9	26.1	26.1
LOS by Move:	D	E	E	E	C	C	F	C	B	E	C	C
HCM2k95thQ:	3	398	398	632	6	6	15	668	1	126	938	938

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	1 0	1	0	0	1 0	1	0	3	0 1	2	0	2	1 0
Lane Group:	L		RT	RT	L		RT	RT	L		T	R	L		RT	RT
#LnsInGrps:	1		1	1	1		1	1	1		3	1	2		3	3
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.86	0.86		xxxx	0.94	0.94		xxxx	xxxx	0.85		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.84	0.84		0.93	0.92	0.92		0.93	0.98	0.83		0.93	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.84	0.84		0.93	0.92	0.92		0.93	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.10	0.13	0.13		0.23	0.26	0.26		0.00	0.46	0.46		0.05	0.51	0.51	
ArrivalType:		4				4				4				4		
ProgFactor:	0.96	0.99	0.99		0.98	0.88	0.88		1.00	0.87	0.71		1.00	0.90	0.90	
Q1:	0.1	4.9	4.9		9.7	0.1	0.1		0.2	13.6	0.0		2.0	18.6	18.6	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.63	0.63	0.63		0.46	0.46	0.46	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.74	0.74	0.74		0.89	0.89	0.89	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.03	0.50	0.45		0.16	0.63	0.63	
Q2:	0.0	3.6	3.6		4.5	0.0	0.0		0.1	1.6	0.0		0.5	3.9	3.9	
HCM2KQueue:	0.1	8.5	8.5		14.3	0.1	0.1		0.3	15.2	0.0		2.5	22.4	22.4	
70th%Factor:	1.20	1.18	1.18		1.17	1.20	1.20		1.20	1.17	1.20		1.19	1.16	1.16	
HCM2k70thQ:	0.1	10.0	10.0		16.7	0.1	0.1		0.3	17.8	0.0		3.0	26.0	26.0	
85th%Factor:	1.60	1.53	1.53		1.49	1.60	1.60		1.60	1.48	1.60		1.58	1.44	1.44	
HCM2k85thQ:	0.1	13.0	13.0		21.2	0.2	0.2		0.5	22.5	0.0		3.9	32.3	32.3	
90th%Factor:	1.80	1.66	1.66		1.60	1.80	1.80		1.79	1.59	1.80		1.75	1.53	1.53	
HCM2k90thQ:	0.1	14.1	14.1		22.8	0.2	0.2		0.5	24.1	0.0		4.4	34.3	34.3	
95th%Factor:	2.10	1.87	1.87		1.77	2.10	2.10		2.09	1.76	2.10		2.02	1.67	1.67	
HCM2k95thQ:	0.1	15.9	15.9		25.3	0.2	0.2		0.6	26.7	0.0		5.0	37.5	37.5	
98th%Factor:	2.70	2.22	2.22		2.03	2.69	2.69		2.68	2.01	2.70		2.53	1.88	1.88	
HCM2k98thQ:	0.2	18.9	18.9		29.0	0.3	0.3		0.8	30.6	0.0		6.3	42.1	42.1	

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Eight Mile & SR 99 E Frontage

Cycle (sec):	100	Critical Vol./Cap.(X):	0.235
Loss Time (sec):	12	Average Delay (sec/veh):	3.9
Optimal Cycle:	29	Level Of Service:	A

Street Name:	SR 99 East Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0
Volume Module:PM Peak Hour												
Base Vol:	9	2	6	8	1	5	9	605	5	8	605	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	2	6	8	1	5	9	605	5	8	605	6
Added Vol:	0	0	0	0	0	0	0	8	0	0	12	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	2	6	8	1	5	9	613	5	8	617	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	10	2	7	9	1	5	10	666	5	9	671	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	2	7	9	1	5	10	666	5	9	671	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	10	2	7	9	1	5	10	666	5	9	671	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.87	0.87	0.93	0.86	0.86	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	1.00	0.25	0.75	1.00	0.17	0.83	1.00	2.00	1.00	1.00	1.98	0.02
Final Sat.:	1769	413	1240	1769	272	1358	1769	3538	1583	1769	3500	34
Capacity Analysis Module:												
Vol/Sat:	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.19	0.00	0.00	0.19	0.19
Crit Moves:	****				****		****				****	
Green/Cycle:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.82	0.82	0.02	0.82	0.82
Volume/Cap:	0.23	0.25	0.25	0.25	0.23	0.23	0.23	0.23	0.00	0.23	0.23	0.23
Delay/Veh:	50.8	52.0	52.0	52.1	52.8	52.8	50.8	2.1	1.7	51.2	2.1	2.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.8	52.0	52.0	52.1	52.8	52.8	50.8	2.1	1.7	51.2	2.1	2.1
LOS by Move:	D	D	D	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	29	28	28	28	24	24	16	14	0	27	16	16

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	1 0	1	0	0	1 0	1	0	2	0 1	1	0	1	1 0
Lane Group:	L		RT	RT	L		RT	RT	L		T	R	L		RT	RT
#LnsInGrps:	1		1	1	1		1	1	1		2	1	1		2	2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.89	0.89		xxxx	0.88	0.88		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.87	0.87		0.93	0.86	0.86		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	0.95	
Fnl Sat Adj:	0.93	0.87	0.87		0.93	0.86	0.86		0.93	0.93	0.83		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.02	0.02	0.02		0.02	0.02	0.02		0.02	0.82	0.82		0.02	0.82	0.82	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.99	0.99		0.99	1.00	1.00		0.99	0.00	0.00		0.99	0.00	0.00	
Q1:	0.3	0.2	0.2		0.2	0.2	0.2		0.3	0.0	0.0		0.2	0.0	0.0	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.26	0.26	0.26		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.98	0.98	0.98		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.11	0.92	0.84		1.00	1.00	1.00	
Q2:	0.3	0.3	0.3		0.3	0.3	0.3		0.0	0.3	0.0		0.3	0.3	0.3	
HCM2KQueue:	0.6	0.5	0.5		0.5	0.5	0.5		0.3	0.3	0.0		0.5	0.3	0.3	
70th%Factor:	1.20	1.20	1.20		1.20	1.20	1.20		1.20	1.20	1.20		1.20	1.20	1.20	
HCM2k70thQ:	0.7	0.6	0.6		0.7	0.5	0.5		0.4	0.3	0.0		0.6	0.4	0.4	
85th%Factor:	1.59	1.59	1.59		1.59	1.60	1.60		1.60	1.60	1.60		1.59	1.60	1.60	
HCM2k85thQ:	0.9	0.9	0.9		0.9	0.7	0.7		0.5	0.4	0.0		0.8	0.5	0.5	
90th%Factor:	1.79	1.79	1.79		1.79	1.79	1.79		1.79	1.79	1.80		1.79	1.79	1.79	
HCM2k90thQ:	1.0	1.0	1.0		1.0	0.8	0.8		0.5	0.5	0.0		0.9	0.5	0.5	
95th%Factor:	2.08	2.08	2.08		2.08	2.08	2.08		2.09	2.09	2.10		2.08	2.09	2.09	
HCM2k95thQ:	1.1	1.1	1.1		1.1	1.0	1.0		0.6	0.6	0.0		1.1	0.6	0.6	
98th%Factor:	2.66	2.66	2.66		2.66	2.67	2.67		2.68	2.68	2.70		2.66	2.68	2.68	
HCM2k98thQ:	1.5	1.4	1.4		1.4	1.2	1.2		0.8	0.7	0.0		1.4	0.8	0.8	

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

Cycle (sec): 100 Critical Vol./Cap.(X): 1.159
Loss Time (sec): 12 Average Delay (sec/veh): 92.0
Optimal Cycle: 180 Level Of Service: F

Street Name:	Holman Road								Lt. Col. Mark Taylor Street							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	3	0 1	1	0	3	0 1	1	0	1	0 1	1	0	0	1 0
Volume Module:PM Peak Hour																
Base Vol:	49	556	279		410	348	30		60	521	26		347	525	344	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	49	556	279		410	348	30		60	521	26		347	525	344	
Added Vol:	0	11	0		0	7	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	49	567	279		410	355	30		60	521	26		347	525	344	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	53	616	303		446	386	33		65	566	28		377	571	374	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	53	616	303		446	386	33		65	566	28		377	571	374	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	53	616	303		446	386	33		65	566	28		377	571	374	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.98	0.83		0.93	0.92	0.92	
Lanes:	1.00	3.00	1.00		1.00	3.00	1.00		1.00	1.00	1.00		1.00	0.60	0.40	
Final Sat.:	1769	5083	1583		1769	5083	1583		1769	1862	1583		1769	1059	694	
Capacity Analysis Module:																
Vol/Sat:	0.03	0.12	0.19		0.25	0.08	0.02		0.04	0.30	0.02		0.21	0.54	0.54	
Crit Moves:			****		****				****					****		
Green/Cycle:	0.11	0.17	0.17		0.22	0.27	0.27		0.03	0.29	0.29		0.20	0.47	0.47	
Volume/Cap:	0.28	0.73	1.16		1.16	0.28	0.08		1.16	1.04	0.06		1.04	1.16	1.16	
Delay/Veh:	41.7	43.0	147.1		135.7	28.6	27.0		218.0	84.9	25.6		98.0	112	111.6	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	41.7	43.0	147.1		135.7	28.6	27.0		218.0	84.9	25.6		98.0	112	111.6	
LOS by Move:	D	D	F		F	C	C		F	F	C		F	F	F	
HCM2k95thQ:	72	315	664		1016	158	35		177	969	27		787	1845	1845	

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 3	0 1		1	0 3	0 1		1	0 1	0 1		1	0 0	1 0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	3	1		1	3	1		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.94	0.94	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.92	0.92	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.98	0.83		0.93	0.92	0.92	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.11	0.17	0.17		0.22	0.27	0.27		0.03	0.29	0.29		0.20	0.47	0.47	
ArrivalType:		4				4				4				4		
ProgFactor:	0.97	0.98	1.00		1.00	0.90	0.88		1.00	1.00	0.87		1.00	1.00	1.00	
Q1:	1.3	5.8	8.4		12.4	2.8	0.6		1.8	15.7	0.5		10.5	26.2	26.2	
UpstreamVC:	0.57	0.57	0.57		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.79	0.79	0.79		0.00	0.00	0.00		1.00	1.00	1.00		0.00	0.00	0.00	
EarlyArrAdj:	0.22	0.29	0.26		1.00	1.00	1.00		0.13	0.51	0.46		1.00	1.00	1.00	
Q2:	0.1	0.7	6.7		12.2	0.4	0.1		1.7	7.5	0.0		7.8	21.6	21.6	
HCM2KQueue:	1.4	6.6	15.1		24.6	3.2	0.7		3.5	23.3	0.5		18.3	47.9	47.9	
70th%Factor:	1.20	1.18	1.17		1.15	1.19	1.20		1.19	1.16	1.20		1.16	1.13	1.13	
HCM2k70thQ:	1.7	7.8	17.6		28.4	3.8	0.8		4.2	26.9	0.6		21.3	54.1	54.1	
85th%Factor:	1.59	1.54	1.48		1.43	1.57	1.59		1.57	1.44	1.59		1.46	1.36	1.36	
HCM2k85thQ:	2.2	10.1	22.4		35.2	4.9	1.1		5.6	33.5	0.8		26.8	65.1	65.1	
90th%Factor:	1.77	1.69	1.59		1.52	1.74	1.79		1.74	1.52	1.79		1.56	1.44	1.44	
HCM2k90thQ:	2.5	11.1	24.0		37.3	5.5	1.2		6.1	35.5	0.9		28.6	68.7	68.7	
95th%Factor:	2.06	1.92	1.76		1.65	2.00	2.08		1.99	1.66	2.08		1.72	1.54	1.54	
HCM2k95thQ:	2.9	12.6	26.6		40.6	6.3	1.4		7.1	38.8	1.1		31.5	73.8	73.8	
98th%Factor:	2.60	2.30	2.01		1.85	2.48	2.65		2.46	1.87	2.66		1.94	1.73	1.73	
HCM2k98thQ:	3.6	15.1	30.4		45.5	7.8	1.8		8.7	43.5	1.4		35.6	82.6	82.6	

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.877
Loss Time (sec):	12	Average Delay (sec/veh):	36.5
Optimal Cycle:	100	Level Of Service:	D

Street Name:	West Lane						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	2	0	1	2	0	2	0	1
Volume Module:	PM Peak Hour											
Base Vol:	576	1535	230	81	1247	86	172	444	396	312	370	57
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	576	1535	230	81	1247	86	172	444	396	312	370	57
Added Vol:	0	180	0	32	115	4	6	0	0	0	0	49
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	576	1715	230	113	1362	90	178	444	396	312	370	106
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	626	1864	250	123	1480	98	193	483	430	339	402	115
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	626	1864	250	123	1480	98	193	483	430	339	402	115
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	626	1864	250	123	1480	98	193	483	430	339	402	115
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.93	0.83	0.90	0.93	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	3538	1583	3432	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.18	0.28	0.16	0.04	0.22	0.06	0.06	0.14	0.27	0.10	0.11	0.07
Crit Moves:	****				****				****	****		
Green/Cycle:	0.21	0.40	0.40	0.05	0.25	0.25	0.14	0.31	0.31	0.11	0.28	0.28
Volume/Cap:	0.88	0.68	0.39	0.68	0.88	0.25	0.40	0.44	0.88	0.88	0.40	0.26
Delay/Veh:	50.2	25.2	21.5	56.6	41.6	30.4	39.7	27.8	48.9	63.3	29.3	28.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.2	25.2	21.5	56.6	41.6	30.4	39.7	27.8	48.9	63.3	29.3	28.1
LOS by Move:	D	C	C	E	D	C	D	C	D	E	C	C
HCM2k95thQ:	570	556	230	162	662	117	155	282	679	383	243	129

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	2	0	1	2	0	2	0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	4	1	2	4	1	2	2	1	2	2	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Fnl Sat Adj:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.93	0.83	0.90	0.93	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.21	0.40	0.40	0.05	0.25	0.25	0.14	0.31	0.31	0.11	0.28	0.28
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.89	0.83	0.99	0.98	0.91	0.96	0.90	0.97	0.99	0.91	0.89
Q1:	8.6	10.3	4.1	1.7	10.6	2.0	2.4	5.1	11.0	4.8	4.3	2.2
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	4.1	2.0	0.6	1.5	4.4	0.3	0.6	0.8	4.5	3.4	0.7	0.3
HCM2KQueue:	12.7	12.3	4.7	3.2	15.1	2.3	3.1	5.8	15.5	8.1	5.0	2.6
70th%Factor:	1.17	1.17	1.19	1.19	1.17	1.19	1.19	1.19	1.17	1.18	1.19	1.19
HCM2k70thQ:	14.9	14.5	5.6	3.8	17.6	2.8	3.7	6.9	18.1	9.6	5.9	3.0
85th%Factor:	1.50	1.50	1.56	1.57	1.48	1.58	1.57	1.55	1.48	1.53	1.55	1.58
HCM2k85thQ:	19.0	18.5	7.3	5.1	22.3	3.6	4.8	9.0	22.9	12.4	7.7	4.0
90th%Factor:	1.61	1.62	1.72	1.74	1.59	1.76	1.74	1.70	1.58	1.67	1.71	1.75
HCM2k90thQ:	20.4	19.9	8.0	5.6	23.9	4.0	5.4	9.9	24.5	13.6	8.5	4.5
95th%Factor:	1.80	1.80	1.96	2.00	1.76	2.03	2.01	1.93	1.75	1.88	1.95	2.02
HCM2k95thQ:	22.8	22.2	9.2	6.5	26.5	4.7	6.2	11.3	27.1	15.3	9.7	5.2
98th%Factor:	2.08	2.09	2.40	2.48	2.01	2.54	2.49	2.34	2.00	2.23	2.38	2.52
HCM2k98thQ:	26.3	25.8	11.2	8.0	30.3	5.8	7.7	13.6	31.0	18.2	11.9	6.4

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.632
Loss Time (sec):	12	Average Delay (sec/veh):	35.2
Optimal Cycle:	51	Level Of Service:	D

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:	PM Peak Hour											
Base Vol:	246	732	159	154	577	101	178	665	145	214	647	111
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	246	732	159	154	577	101	178	665	145	214	647	111
Added Vol:	4	8	0	0	5	2	3	19	3	0	29	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	250	740	159	154	582	103	181	684	148	214	676	111
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	272	804	173	167	633	112	197	743	161	233	735	121
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	272	804	173	167	633	112	197	743	161	233	735	121
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	272	804	173	167	633	112	197	743	161	233	735	121
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.15	0.16	0.11	0.09	0.12	0.07	0.11	0.15	0.10	0.13	0.14	0.08
Crit Moves:	****				****			****		****		
Green/Cycle:	0.24	0.28	0.28	0.16	0.20	0.20	0.19	0.23	0.23	0.21	0.25	0.25
Volume/Cap:	0.63	0.57	0.40	0.57	0.63	0.36	0.58	0.63	0.44	0.63	0.58	0.31
Delay/Veh:	36.9	31.8	30.1	41.3	38.1	35.4	39.4	35.7	33.7	39.6	33.7	31.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.9	31.8	30.1	41.3	38.1	35.4	39.4	35.7	33.7	39.6	33.7	31.0
LOS by Move:	D	C	C	D	D	D	D	D	C	D	C	C
HCM2k95thQ:	330	334	187	226	304	138	293	381	214	302	323	134

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	3	0	1	1	0	3	0	1	1	0	3	0	1	1
Lane Group:	L		T		R	L		T		R	L		T		R	L
#LnsInGrps:	1		3		1	1		3		1	1		3		1	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12		12	12		12		12	12		12		12	12
CrsswalkWid:			8					8					8			
% Hev Veh:			2					2					2			
Grade:			0%					0%					0%			
Parking/Hr:			No					No					No			
Bus Stp/Hr:			0					0					0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0					0					0			
ExclusiveRT:			Include					Include					Include			
% RT Prtct:			0					0					0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.24	0.28	0.28		0.16	0.20	0.20		0.19	0.23	0.23		0.21	0.25	0.25	
ArrivalType:		4				4				4				4		
ProgFactor:	0.95	0.93	0.91		0.97	0.96	0.94		0.96	0.95	0.93		0.96	0.94	0.92	
Q1:	6.4	6.6	3.6		4.2	5.7	2.5		4.8	6.5	3.6		5.7	6.2	2.5	
UpstreamVC:	0.67	0.67	0.67		0.28	0.28	0.28		0.00	0.00	0.00		0.42	0.42	0.42	
UpstreamAdj:	0.69	0.69	0.69		0.97	0.97	0.97		0.00	0.00	0.00		0.91	0.91	0.91	
EarlyArrAdj:	0.30	0.34	0.31		0.34	0.39	0.35		1.00	1.00	1.00		0.37	0.42	0.38	
Q2:	0.5	0.4	0.2		0.4	0.6	0.2		1.3	1.6	0.8		0.6	0.6	0.2	
HCM2KQueue:	6.9	7.0	3.8		4.6	6.3	2.7		6.1	8.1	4.3		6.3	6.8	2.7	
70th%Factor:	1.18	1.18	1.19		1.19	1.19	1.19		1.19	1.18	1.19		1.19	1.18	1.19	
HCM2k70thQ:	8.2	8.3	4.5		5.5	7.5	3.3		7.2	9.6	5.2		7.4	8.0	3.2	
85th%Factor:	1.54	1.54	1.56		1.56	1.54	1.57		1.54	1.53	1.56		1.54	1.54	1.57	
HCM2k85thQ:	10.7	10.8	5.9		7.2	9.8	4.3		9.4	12.4	6.8		9.7	10.4	4.2	
90th%Factor:	1.68	1.68	1.73		1.72	1.69	1.75		1.70	1.67	1.72		1.69	1.69	1.75	
HCM2k90thQ:	11.7	11.8	6.5		7.9	10.7	4.8		10.3	13.5	7.5		10.6	11.4	4.7	
95th%Factor:	1.91	1.91	1.99		1.96	1.92	2.02		1.93	1.88	1.97		1.92	1.91	2.02	
HCM2k95thQ:	13.2	13.4	7.5		9.0	12.2	5.5		11.7	15.2	8.5		12.1	12.9	5.4	
98th%Factor:	2.29	2.28	2.45		2.40	2.31	2.51		2.33	2.24	2.42		2.32	2.29	2.51	
HCM2k98thQ:	15.8	16.0	9.2		11.0	14.7	6.9		14.1	18.1	10.5		14.5	15.5	6.7	

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 Morada Ln & SR99 W Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.654
Loss Time (sec):	12	Average Delay (sec/veh):	24.4
Optimal Cycle:	54	Level Of Service:	C

Street Name:	SR 99 West Frontage Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1 0 1	2	0	0 1 0	1	0	2 1 0	1	0	2 0 1
Volume Module:PM Peak Hour												
Base Vol:	5	63	89	468	26	11	29	701	2	96	694	507
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	63	89	468	26	11	29	701	2	96	694	507
Added Vol:	0	0	0	0	0	0	0	19	0	0	29	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	63	89	468	26	11	29	720	2	96	723	507
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	5	68	97	509	28	12	32	783	2	104	786	551
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	68	97	509	28	12	32	783	2	104	786	551
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	5	68	97	509	28	12	32	783	2	104	786	551
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.90	0.94	0.94	0.93	0.89	0.89	0.93	0.93	0.83
Lanes:	2.00	1.00	1.00	2.00	0.70	0.30	1.00	2.99	0.01	1.00	2.00	1.00
Final Sat.:	3432	1862	1583	3432	1250	529	1769	5069	14	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.04	0.06	0.15	0.02	0.02	0.02	0.15	0.15	0.06	0.22	0.35
Crit Moves:			****	****			****					****
Green/Cycle:	0.02	0.09	0.09	0.23	0.30	0.30	0.03	0.41	0.41	0.15	0.53	0.53
Volume/Cap:	0.08	0.39	0.65	0.65	0.08	0.08	0.65	0.38	0.38	0.38	0.42	0.65
Delay/Veh:	48.5	44.1	53.8	37.1	25.2	25.2	76.1	21.0	21.0	38.8	14.2	18.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.5	44.1	53.8	37.1	25.2	25.2	76.1	21.0	21.0	38.8	14.2	18.6
LOS by Move:	D	D	D	D	C	C	E	C	C	D	B	B
HCM2k95thQ:	8	120	202	379	40	40	53	240	240	136	255	438

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #22 Morada Ln & SR99 W Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2	0	1 0 1	2	0	0 1 0	1	0	2 1 0	1	0	2 0 1
Lane Group:	L	T	R	L	RT	RT	L	RT	RT	L	T	R
#LnsInGrps:	2	1	1	2	1	1	1	3	3	1	2	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	0.96	0.96	xxxx	1.00	1.00	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.94	0.94	0.93	0.98	0.98	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	1.00	1.00	0.97	1.00	1.00	1.00	0.91	0.91	1.00	0.95	1.00
Fnl Sat Adj:	0.90	0.98	0.83	0.90	0.94	0.94	0.93	0.89	0.89	0.93	0.93	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #22 Morada Ln & SR99 W Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.02	0.09	0.09	0.23	0.30	0.30	0.03	0.41	0.41	0.15	0.53	0.53
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.98	0.99	0.96	0.86	0.86	1.00	0.82	0.82	0.96	0.69	0.75
Q1:	0.1	1.8	2.6	6.3	0.7	0.7	0.9	4.6	4.6	2.5	4.7	8.3
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.63	0.63	0.31	0.31	0.31
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.73	0.73	0.96	0.96	0.96
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.09	0.46	0.46	0.32	0.70	0.64
Q2:	0.1	0.6	1.5	1.7	0.1	0.1	0.2	0.3	0.3	0.2	0.5	1.2
HCM2KQueue:	0.2	2.4	4.1	8.1	0.8	0.8	1.0	4.9	4.9	2.7	5.2	9.5
70th%Factor:	1.20	1.19	1.19	1.18	1.20	1.20	1.20	1.19	1.19	1.19	1.19	1.18
HCM2k70thQ:	0.2	2.8	4.9	9.5	0.9	0.9	1.2	5.8	5.8	3.2	6.2	11.1
85th%Factor:	1.60	1.58	1.56	1.53	1.59	1.59	1.59	1.55	1.55	1.57	1.55	1.52
HCM2k85thQ:	0.2	3.7	6.4	12.3	1.2	1.2	1.6	7.6	7.6	4.2	8.1	14.4
90th%Factor:	1.80	1.76	1.73	1.67	1.78	1.78	1.78	1.71	1.71	1.75	1.71	1.65
HCM2k90thQ:	0.3	4.2	7.1	13.4	1.4	1.4	1.8	8.4	8.4	4.7	8.9	15.6
95th%Factor:	2.09	2.03	1.98	1.88	2.07	2.07	2.07	1.96	1.96	2.02	1.95	1.85
HCM2k95thQ:	0.3	4.8	8.1	15.2	1.6	1.6	2.1	9.6	9.6	5.4	10.2	17.5
98th%Factor:	2.69	2.53	2.43	2.24	2.64	2.64	2.62	2.39	2.39	2.51	2.37	2.18
HCM2k98thQ:	0.4	6.0	9.9	18.0	2.0	2.0	2.7	11.7	11.7	6.8	12.4	20.6

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 West Ln & West Ln Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.860
Loss Time (sec):	12	Average Delay (sec/veh):	29.0
Optimal Cycle:	94	Level Of Service:	C

Street Name:	West Lane						West Lane Frontage Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3	1 0	1 0	3	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:	PM Peak Hour											
Base Vol:	312	2171	80	16	1770	26	62	39	256	98	25	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	312	2171	80	16	1770	26	62	39	256	98	25	10
Added Vol:	0	180	0	0	115	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	312	2351	80	16	1885	26	62	39	256	98	25	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	339	2555	87	17	2049	28	67	42	278	107	27	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	339	2555	87	17	2049	28	67	42	278	107	27	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	339	2555	87	17	2049	28	67	42	278	107	27	11
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.89	0.89	0.93	0.85	0.85	0.93	0.94	0.94
Lanes:	1.00	3.87	0.13	1.00	3.95	0.05	1.00	0.13	0.87	1.00	0.71	0.29
Final Sat.:	1769	6522	222	1769	6672	92	1769	214	1406	1769	1273	509
Capacity Analysis Module:												
Vol/Sat:	0.19	0.39	0.39	0.01	0.31	0.31	0.04	0.20	0.20	0.06	0.02	0.02
Crit Moves:	****				****			****		****		
Green/Cycle:	0.22	0.57	0.57	0.01	0.36	0.36	0.19	0.23	0.23	0.07	0.11	0.11
Volume/Cap:	0.86	0.69	0.69	0.69	0.86	0.86	0.20	0.86	0.86	0.86	0.20	0.20
Delay/Veh:	54.5	16.1	16.1	108.7	33.2	33.2	34.2	54.9	54.9	87.8	41.2	41.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.5	16.1	16.1	108.7	33.2	33.2	34.2	54.9	54.9	87.8	41.2	41.2
LOS by Move:	D	B	B	F	C	C	C	D	D	F	D	D
HCM2k95thQ:	447	500	500	79	794	794	88	552	552	273	61	61

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 3	1	0	1	0 3	1	0	1	0 0	1	0	1	0 0	1	0
Lane Group:	L	RT		RT	L	RT		RT	L	RT		RT	L	RT		RT
#LnsInGrps:	1	4		4	1	4		4	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx		xxxx	1	xxxx		xxxx	1	xxxx		xxxx	1	xxxx		xxxx
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Hev Veh Adj:	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98
Grade Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Parking Adj:	xxxx	1.00		1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	xxxx	1.00		1.00
Bus Stp Adj:	xxxx	1.00		1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	xxxx	1.00		1.00
Area Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
RT Adj:	xxxx	1.00		1.00	xxxx	1.00		1.00	xxxx	0.87		0.87	xxxx	0.96		0.96
LT Adj:	0.95	xxxx		xxxxx	0.95	xxxx		xxxxx	0.95	xxxx		xxxxx	0.95	xxxx		xxxxx
PedBike Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
HCM Sat Adj:	0.93	0.98		0.98	0.93	0.98		0.98	0.93	0.85		0.85	0.93	0.94		0.94
Usr Sat Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Sat Adj:	1.00	0.91		0.91	1.00	0.91		0.91	1.00	1.00		1.00	1.00	1.00		1.00
Fnl Sat Adj:	0.93	0.89		0.89	0.93	0.89		0.89	0.93	0.85		0.85	0.93	0.94		0.94
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.22	0.57		0.57	0.01	0.36		0.36	0.19	0.23		0.23	0.07	0.11		0.11
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.72		0.72	1.00	0.96		0.96	0.93	0.98		0.98	1.00	0.97		0.97
Q1:	8.9	10.4		10.4	0.5	14.1		14.1	1.5	8.4		8.4	2.9	0.9		0.9
UpstreamVC:	0.89	0.89		0.89	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00
UpstreamAdj:	0.33	0.33		0.33	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00
EarlyArrAdj:	0.14	0.25		0.25	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Q2:	0.8	0.6		0.6	1.1	4.4		4.4	0.2	3.9		3.9	2.7	0.2		0.2
HCM2KQueue:	9.7	10.9		10.9	1.5	18.5		18.5	1.7	12.3		12.3	5.6	1.2		1.2
70th%Factor:	1.18	1.18		1.18	1.20	1.16		1.16	1.20	1.17		1.17	1.19	1.20		1.20
HCM2k70thQ:	11.4	12.9		12.9	1.9	21.5		21.5	2.0	14.4		14.4	6.7	1.4		1.4
85th%Factor:	1.52	1.51		1.51	1.58	1.46		1.46	1.58	1.50		1.50	1.55	1.59		1.59
HCM2k85thQ:	14.7	16.5		16.5	2.5	27.1		27.1	2.7	18.4		18.4	8.7	1.9		1.9
90th%Factor:	1.65	1.63		1.63	1.77	1.56		1.56	1.77	1.62		1.62	1.70	1.78		1.78
HCM2k90thQ:	15.9	17.9		17.9	2.7	28.9		28.9	3.0	19.8		19.8	9.6	2.1		2.1
95th%Factor:	1.85	1.83		1.83	2.05	1.71		1.71	2.05	1.80		1.80	1.94	2.06		2.06
HCM2k95thQ:	17.9	20.0		20.0	3.2	31.7		31.7	3.5	22.1		22.1	10.9	2.4		2.4
98th%Factor:	2.18	2.13		2.13	2.59	1.94		1.94	2.58	2.09		2.09	2.35	2.61		2.61
HCM2k98thQ:	21.0	23.3		23.3	4.0	35.9		35.9	4.4	25.6		25.6	13.2	3.1		3.1

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                      Cumul + Reduce Dens Alt PM Pk Hr
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                     Level Of Service Computation Report
           2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #25 West Lane & Knickerbocker Dr
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.891
Loss Time (sec):      12              Average Delay (sec/veh):        34.3
Optimal Cycle:       105              Level Of Service:                  C
********************************************************************************
Street Name:               West Lane                   Knickerbocker Drive
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  3  1  0   1  0  3  1  0   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:PM Peak Hour
Base Vol:     196 2446    58   114 2012   163   259  106   108    82  114    83
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  196 2446    58   114 2012   163   259  106   108    82  114    83
Added Vol:      0  180     0     0  115     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  196 2626    58   114 2127   163   259  106   108    82  114    83
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:   213 2854    63   124 2312   177   282  115   117    89  124    90
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  213 2854    63   124 2312   177   282  115   117    89  124    90
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  213 2854    63   124 2312   177   282  115   117    89  124    90
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.93 0.89  0.89  0.93 0.88  0.88  0.93 0.91  0.91  0.93 0.92  0.92
Lanes:       1.00 3.91  0.09  1.00 3.72  0.28  1.00 0.50  0.50  1.00 0.58  0.42
Final Sat.:  1769 6611   146  1769 6226   477  1769  852   868  1769 1010   735
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.12 0.43  0.43  0.07 0.37  0.37  0.16 0.14  0.14  0.05 0.12  0.12
Crit Moves:       ****        ****             ****                  ****
Green/Cycle: 0.14 0.48  0.48  0.08 0.43  0.43  0.18 0.23  0.23  0.09 0.14  0.14
Volume/Cap:  0.87 0.89  0.89  0.89 0.87  0.87  0.89 0.59  0.59  0.59 0.89  0.89
Delay/Veh:   69.5 26.8  26.8  90.9 29.5  29.5  65.4 36.5  36.5  49.8 73.2  73.2
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  69.5 26.8  26.8  90.9 29.5  29.5  65.4 36.5  36.5  49.8 73.2  73.2
LOS by Move:    E    C     C     F    C     C     E    D     D     D    E     E
HCM2k95thQ:   287  813   813   196  767   767   531  324   324   178  444   444
********************************************************************************
Note: Queue reported is the distance per lane in feet.
********************************************************************************
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                      Cumul + Reduce Dens Alt PM Pk Hr
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                 Level Of Service Detailed Computation Report
                        2000 HCM Operations Method
                         Future Volume Alternative
********************************************************************************
Intersection #25 West Lane & Knickerbocker Dr
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        1  0  3  1  0   1  0  3  1  0   1  0  0  1  0   1  0  0  1  0
Lane Group:     L   RT    RT    L   RT    RT    L   RT    RT    L   RT    RT
#LnsInGrps:     1    4     4    1    4     4    1    1     1    1    1     1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12   12   12    12   12   12    12   12   12    12
CrsswalkWid:         8                8                8                8
% Hev Veh:           2                2                2                2
Grade:              0%               0%               0%               0%
Parking/Hr:         No               No               No               No
Bus Stp/Hr:          0                0                0                0
Area Type:    < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:         0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:          0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx    1 xxxx  xxxx    1 xxxx  xxxx    1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Hev Veh Adj: 0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
Grade Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Parking Adj: xxxx 1.00  1.00  xxxx 1.00  1.00  xxxx 1.00  1.00  xxxx 1.00  1.00
Bus Stp Adj: xxxx 1.00  1.00  xxxx 1.00  1.00  xxxx 1.00  1.00  xxxx 1.00  1.00
Area Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
RT Adj:      xxxx 1.00  1.00  xxxx 0.99  0.99  xxxx 0.92  0.92  xxxx 0.94  0.94
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.93 0.98  0.98  0.93 0.97  0.97  0.93 0.91  0.91  0.93 0.92  0.92
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 0.91  0.91  1.00 0.91  0.91  1.00 1.00  1.00  1.00 1.00  1.00
Fnl Sat Adj: 0.93 0.89  0.89  0.93 0.88  0.88  0.93 0.91  0.91  0.93 0.92  0.92
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
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Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.14	0.48	0.48	0.08	0.43	0.43	0.18	0.23	0.23	0.09	0.14	0.14
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.92	0.92	1.00	0.94	0.94	0.99	0.95	0.95	0.99	0.99	0.99
Q1:	5.8	18.6	18.6	3.4	16.3	16.3	7.6	5.5	5.5	2.4	5.8	5.8
UpstreamVC:	1.23	1.23	1.23	0.86	0.86	0.86	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.09	0.09	0.09	0.39	0.39	0.39	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.03	0.06	0.06	0.09	0.25	0.25	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.2	0.5	0.5	0.6	1.5	1.5	4.2	1.3	1.3	1.2	3.8	3.8
HCM2KQueue:	5.9	19.0	19.0	4.0	17.8	17.8	11.7	6.8	6.8	3.6	9.6	9.6
70th%Factor:	1.19	1.16	1.16	1.19	1.16	1.16	1.17	1.18	1.18	1.19	1.18	1.18
HCM2k70thQ:	7.0	22.1	22.1	4.7	20.7	20.7	13.8	8.0	8.0	4.3	11.3	11.3
85th%Factor:	1.55	1.46	1.46	1.56	1.47	1.47	1.50	1.54	1.54	1.57	1.52	1.52
HCM2k85thQ:	9.2	27.8	27.8	6.2	26.1	26.1	17.6	10.5	10.5	5.6	14.6	14.6
90th%Factor:	1.70	1.55	1.55	1.73	1.56	1.56	1.62	1.68	1.68	1.73	1.65	1.65
HCM2k90thQ:	10.1	29.6	29.6	6.8	27.8	27.8	19.0	11.4	11.4	6.2	15.8	15.8
95th%Factor:	1.93	1.71	1.71	1.98	1.72	1.72	1.81	1.91	1.91	1.99	1.85	1.85
HCM2k95thQ:	11.5	32.5	32.5	7.8	30.7	30.7	21.2	13.0	13.0	7.1	17.8	17.8
98th%Factor:	2.33	1.93	1.93	2.44	1.95	1.95	2.11	2.29	2.29	2.46	2.18	2.18
HCM2k98thQ:	13.9	36.8	36.8	9.6	34.8	34.8	24.7	15.6	15.6	8.8	20.9	20.9

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 1.227
Loss Time (sec): 12 Average Delay (sec/veh): 89.3
Optimal Cycle: 180 Level Of Service: F

Street Name:	West Lane						Hammer Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4 0 1	2	0	4 0 1	2	0	4 0 1	2	0	4 0 1
Volume Module:	PM Peak Hour											
Base Vol:	188	1890	466	780	1300	133	244	1073	104	620	1093	617
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	188	1890	466	780	1300	133	244	1073	104	620	1093	617
Added Vol:	0	180	0	0	115	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	188	2070	466	780	1415	133	244	1073	104	620	1093	617
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	204	2250	507	848	1538	145	265	1166	113	674	1188	671
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	204	2250	507	848	1538	145	265	1166	113	674	1188	671
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	204	2250	507	848	1538	145	265	1166	113	674	1188	671
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.06	0.33	0.32	0.25	0.23	0.09	0.08	0.17	0.07	0.20	0.18	0.42
Crit Moves:		****		****			****					****
Green/Cycle:	0.10	0.27	0.27	0.20	0.37	0.37	0.06	0.19	0.19	0.22	0.35	0.35
Volume/Cap:	0.61	1.23	1.18	1.23	0.61	0.24	1.23	0.90	0.37	0.90	0.51	1.23
Delay/Veh:	46.4	144	140.5	154.8	25.8	21.8	183.0	48.6	36.1	52.3	26.2	150.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.4	144	140.5	154.8	25.8	21.8	183.0	48.6	36.1	52.3	26.2	150.5
LOS by Move:	D	F	F	F	C	C	F	D	D	D	C	F
HCM2k95thQ:	203	1411	1150	958	410	119	453	588	159	445	309	1366

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	4	0	1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	4	1		2	4	1		2	4	1		2	4	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.10	0.27	0.27		0.20	0.37	0.37		0.06	0.19	0.19		0.22	0.35	0.35	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	1.00	1.00		1.00	0.89	0.83		1.00	0.99	0.95		0.99	0.89	1.00	
Q1:	2.8	17.2	14.1		12.1	8.4	2.3		3.8	8.6	2.6		9.3	6.4	18.6	
UpstreamVC:	0.00	0.00	0.00		0.87	0.87	0.87		0.00	0.00	0.00		1.03	1.03	1.03	
UpstreamAdj:	0.00	0.00	0.00		0.37	0.37	0.37		0.00	0.00	0.00		0.09	0.09	0.09	
EarlyArrAdj:	1.00	1.00	1.00		0.15	0.22	0.20		1.00	1.00	1.00		0.04	0.05	0.05	
Q2:	1.3	18.5	14.2		10.9	0.3	0.1		6.0	4.5	0.6		0.3	0.1	15.8	
HCM2KQueue:	4.1	35.7	28.3		23.0	8.8	2.4		9.8	13.1	3.2		9.6	6.4	34.4	
70th%Factor:	1.19	1.14	1.15		1.16	1.18	1.19		1.18	1.17	1.19		1.18	1.19	1.14	
HCM2k70thQ:	4.9	40.7	32.5		26.6	10.4	2.8		11.6	15.4	3.8		11.3	7.6	39.3	
85th%Factor:	1.56	1.39	1.42		1.44	1.52	1.58		1.52	1.49	1.57		1.52	1.54	1.40	
HCM2k85thQ:	6.4	49.6	40.1		33.1	13.4	3.7		14.9	19.6	5.0		14.6	9.9	48.0	
90th%Factor:	1.73	1.47	1.50		1.53	1.66	1.76		1.64	1.61	1.74		1.65	1.69	1.47	
HCM2k90thQ:	7.1	52.3	42.4		35.1	14.6	4.1		16.1	21.1	5.5		15.8	10.9	50.6	
95th%Factor:	1.98	1.58	1.62		1.67	1.87	2.03		1.85	1.79	2.00		1.85	1.92	1.59	
HCM2k95thQ:	8.1	56.4	46.0		38.3	16.4	4.8		18.1	23.5	6.4		17.8	12.4	54.7	
98th%Factor:	2.43	1.76	1.81		1.87	2.21	2.53		2.17	2.06	2.48		2.18	2.31	1.77	
HCM2k98thQ:	10.0	62.9	51.3		43.0	19.4	6.0		21.3	27.1	7.9		20.9	14.9	60.9	

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	1.029
Loss Time (sec):	12	Average Delay (sec/veh):	51.4
Optimal Cycle:	180	Level Of Service:	D

Street Name:	Hammer Lane									Holman Road								
Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Y+R:	4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0		
Lanes:	2	0	2	1	0	2	0	3	0	1	2	0	3	1	0	2	0	3	1	0
Volume Module:	PM Peak Hour																			
Base Vol:	521	672	148			215	574	320			532	2019	312			210	2022	151		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	521	672	148			215	574	320			532	2019	312			210	2022	151		
Added Vol:	0	12	0			0	8	0			0	0	0			0	0	0		
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0		
Initial Fut:	521	684	148			215	582	320			532	2019	312			210	2022	151		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92		
PHF Volume:	566	743	161			234	633	348			578	2195	339			228	2198	164		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	566	743	161			234	633	348			578	2195	339			228	2198	164		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
FinalVolume:	566	743	161			234	633	348			578	2195	339			228	2198	164		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900		
Adjustment:	0.90	0.87	0.87			0.90	0.89	0.83			0.90	0.87	0.87			0.90	0.88	0.88		
Lanes:	2.00	2.47	0.53			2.00	3.00	1.00			2.00	3.46	0.54			2.00	3.72	0.28		
Final Sat.:	3432	4066	880			3432	5083	1583			3432	5753	889			3432	6244	466		
Capacity Analysis Module:																				
Vol/Sat:	0.17	0.18	0.18			0.07	0.12	0.22			0.17	0.38	0.38			0.07	0.35	0.35		
Crit Moves:	****							****			****						****			
Green/Cycle:	0.16	0.27	0.27			0.10	0.21	0.21			0.16	0.43	0.43			0.08	0.34	0.34		
Volume/Cap:	1.03	0.67	0.67			0.67	0.58	1.03			1.03	0.89	0.89			0.89	1.03	1.03		
Delay/Veh:	87.9	33.7	33.7			48.3	36.1	95.9			87.3	29.9	29.9			74.2	59.5	59.5		
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
AdjDel/Veh:	87.9	33.7	33.7			48.3	36.1	95.9			87.3	29.9	29.9			74.2	59.5	59.5		
LOS by Move:	F	C	C			D	D	F			F	C	C			E	E	E		
HCM2k95thQ:	648	445	445			177	287	614			497	778	778			300	1147	1147		

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																				
Lanes:	2	0	2	1	0	2	0	3	0	1	2	0	3	1	0	2	0	3	1	0
Lane Group:	L		RT			RT		L		T	R		L	RT		RT		L	RT	
#LnsInGrps:	2		3			3		2		3	1		2	4		4		2	4	
HCM Ops Input Saturation Adj Module:																				
Lane Width:	12		12			12		12		12	12		12	12		12		12	12	
CrsswalkWid:			8							8				8					8	
% Hev Veh:			2							2				2					2	
Grade:			0%							0%				0%					0%	
Parking/Hr:			No							No				No					No	
Bus Stp/Hr:			0							0				0					0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >																			
Cnft Ped/Hr:			0							0				0					0	
ExclusiveRT:			Include							Include				Include					Include	
% RT Prtct:			0							0				0					0	
HCM Ops f(lt) Adj Case Module:																				
f(lt) Case:	1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx		
HCM Ops Saturation Adj Module:																				
Ln Wid Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Hev Veh Adj:	0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98		
Grade Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Parking Adj:	xxxx	1.00	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00			xxxx	1.00	1.00		
Bus Stp Adj:	xxxx	1.00	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00			xxxx	1.00	1.00		
Area Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
RT Adj:	xxxx	0.97	0.97			xxxx	xxxx	0.85			xxxx	0.98	0.98			xxxx	0.99	0.99		
LT Adj:	0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx		
PedBike Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
HCM Sat Adj:	0.93	0.95	0.95			0.93	0.98	0.83			0.93	0.96	0.96			0.93	0.97	0.97		
Usr Sat Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Sat Adj:	0.97	0.91	0.91			0.97	0.91	1.00			0.97	0.91	0.91			0.97	0.91	0.91		
Fnl Sat Adj:	0.90	0.87	0.87			0.90	0.89	0.83			0.90	0.87	0.87			0.90	0.88	0.88		
Delay Adjustment Factor Module:																				
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >																			
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >																			
DelAdjFctr:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		

Cumul + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.16	0.27	0.27	0.10	0.21	0.21	0.16	0.43	0.43	0.08	0.34	0.34
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.95	0.95	0.99	0.95	1.00	1.00	0.94	0.94	1.00	1.00	1.00
Q1:	8.1	7.7	7.7	3.2	5.5	9.7	8.3	16.7	16.7	3.2	18.0	18.0
UpstreamVC:	0.00	0.00	0.00	0.63	0.63	0.63	0.90	0.90	0.90	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.73	0.73	0.73	0.31	0.31	0.31	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	0.19	0.31	0.28	0.11	0.20	0.20	1.00	1.00	1.00
Q2:	6.6	1.9	1.9	0.4	0.4	4.2	2.6	1.4	1.4	3.0	10.2	10.2
HCM2KQueue:	14.7	9.6	9.6	3.6	5.9	13.8	10.9	18.1	18.1	6.2	28.2	28.2
70th%Factor:	1.17	1.18	1.18	1.19	1.19	1.17	1.18	1.16	1.16	1.19	1.15	1.15
HCM2k70thQ:	17.2	11.3	11.3	4.2	7.1	16.2	12.8	21.1	21.1	7.4	32.5	32.5
85th%Factor:	1.48	1.52	1.52	1.57	1.55	1.49	1.51	1.46	1.46	1.54	1.42	1.42
HCM2k85thQ:	21.8	14.6	14.6	5.6	9.2	20.6	16.4	26.5	26.5	9.6	40.0	40.0
90th%Factor:	1.59	1.65	1.65	1.73	1.70	1.60	1.63	1.56	1.56	1.69	1.50	1.50
HCM2k90thQ:	23.4	15.8	15.8	6.2	10.1	22.1	17.7	28.3	28.3	10.5	42.3	42.3
95th%Factor:	1.77	1.85	1.85	1.99	1.93	1.78	1.83	1.72	1.72	1.92	1.62	1.62
HCM2k95thQ:	25.9	17.8	17.8	7.1	11.5	24.6	19.9	31.1	31.1	12.0	45.9	45.9
98th%Factor:	2.02	2.18	2.18	2.46	2.33	2.05	2.13	1.95	1.95	2.32	1.81	1.81
HCM2k98thQ:	29.7	20.9	20.9	8.8	13.9	28.3	23.2	35.3	35.3	14.4	51.2	51.2

Cumul + Reduce Dens Alt PM Pk Hr

Future Queue Length Report (feet)

Node	Intersection	Northbound L	-- T	-- R	Southbound L	-- T	-- R	Eastbound L	-- T	-- R	Westbound L	-- T	-- R
#3	[HCM2k95thQ]:	333	1025	384	1290	411	317	500	666	109	250	1400	1400
#4	[HCM2k95thQ]:	590	552	475	463	479	228	193	611	197	391	740	740
#5	[HCM2k95thQ]:	174	731	1179	860	328	111	357	1289	119	824	1397	1397
#6	[HCM2k95thQ]:	93	957	1364	1898	233	23	252	1022	39	1606	383	1322
#7	[HCM2k95thQ]:	213	213	213	161	161	161	127	238	238	133	231	231
#8	[HCM2k95thQ]:	1018	456	185	197	653	1181	1023	1295	1295	279	1287	1287
#9	[HCM2k95thQ]:	0	0	0	662	0	101	296	401	0	0	704	520
#10	[HCM2k95thQ]:	112	0	120	0	0	6	0	101	101	151	49	49
#11	[HCM2k95thQ]:	644	108	46	67	145	554	461	493	650	63	601	28
#12	[HCM2k95thQ]:	3	398	398	632	6	6	15	668	1	126	938	938
#13	[HCM2k95thQ]:	29	28	28	28	24	24	16	14	0	27	16	16
#17	[HCM2k95thQ]:	72	315	664	1016	158	35	177	969	27	787	1845	1845
#18	[HCM2k95thQ]:	570	556	230	162	662	117	155	282	679	383	243	129
#19	[HCM2k95thQ]:	330	334	187	226	304	138	293	381	214	302	323	134
#22	[HCM2k95thQ]:	8	120	202	379	40	40	53	240	240	136	255	438
#24	[HCM2k95thQ]:	447	500	500	79	794	794	88	552	552	273	61	61
#25	[HCM2k95thQ]:	287	813	813	196	767	767	531	324	324	178	444	444
#26	[HCM2k95thQ]:	203	1411	1150	958	410	119	453	588	159	445	309	1366
#27	[HCM2k95thQ]:	648	445	445	177	287	614	497	778	778	300	1147	1147

Cumul + Reduce Dens Alt PM Pk Hr Mitigated

Scenario Report

Scenario:	Cumul + Red Dens Alt PM
Command:	Cumul + Red Dens Alt PM
Volume:	Cumul Proj PM
Geometry:	Cumul Proj
Impact Fee:	Default Impact Fee
Trip Generation:	PM Pk Hr
Trip Distribution:	Cumul No Bridge PM
Paths:	Cumul Proj
Routes:	Default Route
Configuration:	Default Configuration

Cumul + Reduce Dens Alt PM Pk Hr Mitigated

Trip Generation Report

Forecast for PM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	725.00	ElemSchStudent	0.07	0.08	51	58	109	10.7
1	Village West	0.00	Tra Vigne SFDU	0.51	0.30	0	0	0	0.0
1	Village West	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	2.63	2.85	0	0	0	0.0
1	Village West	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
1	Village West	701.00	Red Dens SFDU	0.52	0.31	365	217	582	57.1
1	Village West	0.00	GP Alt MFDU	0.41	0.22	0	0	0	0.0
1	Village West	0.00	Tra V Internal	-64.00	-64.00	0	0	0	0.0
1	Village West	0.00	GP Alt Interna	-76.00	-76.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-106.00	-111.00	0	0	0	0
	Zone 1 Subtotal					416	275	691	67.7
2	Village East	0.00	Tra Vigne SFDU	0.51	0.30	0	0	0	0.0
2	Village East	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
2	Village East	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
2	Village East	396.00	Red Dens SFDU	0.52	0.31	206	123	329	32.3
	Zone 2 Subtotal					206	123	329	32.3
TOTAL						622	398	1020	100.0

Cumul + Reduce Dens Alt PM Pk Hr Mitigated

Trip Distribution Report

Percent Of Trips Cumul No Bridge PM

To Gates

Zone	1	2	3	4	5	6	7	8	9	10	11
1	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	2.0
2	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	2.0

To Gates

Zone	14	15	16	17	18	19	20	21	22	23
1	1.0	2.0	5.0	1.0	2.0	29.0	10.0	1.0	2.0	14.0
2	1.0	2.0	5.0	1.0	2.0	29.0	10.0	1.0	2.0	14.0

Cumul + Reduce Dens Alt PM Pk Hr Mitigated

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 5 Eight Mile & Lower Sacto Rd	E	68.7	1.128	E	78.1	1.176	+ 9.404 D/V
# 8 Eight Mile Rd & West Ln	E	72.1	1.133	E	78.8	1.151	+ 6.788 D/V

Cumul + Reduce Dens Alt PM Pk Hr Mitigated

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]

Cumul + Reduce Dens Alt PM Pk Hr Mitigated

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.176
Loss Time (sec):	12	Average Delay (sec/veh):	78.1
Optimal Cycle:	180	Level Of Service:	E

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	4 0	1	2 0	4 0	1
Volume Module:	PM Peak Hour											
Base Vol:	183	817	455	610	526	103	199	1916	96	567	1922	498
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	183	817	455	610	526	103	199	1916	96	567	1922	498
Added Vol:	0	0	31	12	0	0	0	68	0	20	44	8
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	183	817	486	622	526	103	199	1984	96	587	1966	506
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	199	888	528	676	572	112	216	2157	104	638	2137	550
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	199	888	528	676	572	112	216	2157	104	638	2137	550
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	199	888	528	676	572	112	216	2157	104	638	2137	550
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.06	0.25	0.33	0.20	0.16	0.07	0.06	0.32	0.07	0.19	0.32	0.35
Crit Moves:			****	****				****		****		
Green/Cycle:	0.12	0.28	0.28	0.17	0.33	0.33	0.07	0.27	0.27	0.16	0.36	0.52
Volume/Cap:	0.49	0.88	1.18	1.18	0.49	0.21	0.88	1.18	0.24	1.18	0.88	0.66
Delay/Veh:	42.1	43.7	136.2	138.0	26.9	24.2	75.0	122	28.8	139.4	34.4	19.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.1	43.7	136.2	138.0	26.9	24.2	75.0	122	28.8	139.4	34.4	19.3
LOS by Move:	D	D	F	F	C	C	E	F	C	F	C	B
HCM2k95thQ:	174	731	1179	860	328	111	289	1289	119	824	838	478

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt PM Pk Hr Mitigated

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0 1	2	0	2	0 1	2	0	4	0 1	2	0	4	0 1
Lane Group:	L		T	R	L		T	R	L		T	R	L		T	R
#LnsInGrps:	2		2	1	2		2	1	2		4	1	2		4	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt PM Pk Hr Mitigated

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.12	0.28	0.28		0.17	0.33	0.33		0.07	0.27	0.27		0.16	0.36	0.52	
ArrivalType:		4				4				4				4		
ProgFactor:	0.97	0.98	1.00		1.00	0.89	0.86		1.00	1.00	0.90		1.00	0.96	0.77	
Q1:		2.6	12.1	14.7		9.7	5.9	1.9		3.1	16.5	2.0		9.1	14.7	8.6
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:		0.9	4.7	14.5		10.6	0.9	0.3		2.9	15.8	0.3		10.2	5.0	1.9
HCM2KQueue:		3.5	16.9	29.1		20.3	6.9	2.2		6.0	32.2	2.4		19.3	19.7	10.4
70th%Factor:	1.19	1.17	1.15		1.16	1.18	1.19		1.19	1.14	1.19		1.16	1.16	1.18	
HCM2k70thQ:		4.2	19.6	33.4		23.6	8.1	2.6		7.1	36.9	2.8		22.4	22.9	12.3
85th%Factor:	1.57	1.47	1.41		1.45	1.54	1.58		1.55	1.40	1.58		1.46	1.46	1.51	
HCM2k85thQ:		5.5	24.8	41.2		29.5	10.6	3.4		9.2	45.2	3.7		28.2	28.7	15.7
90th%Factor:	1.74	1.57	1.49		1.54	1.68	1.76		1.70	1.48	1.76		1.55	1.55	1.64	
HCM2k90thQ:		6.1	26.5	43.5		31.4	11.6	3.8		10.1	47.7	4.1		30.0	30.5	17.1
95th%Factor:	1.99	1.74	1.62		1.69	1.91	2.03		1.93	1.60	2.03		1.71	1.70	1.84	
HCM2k95thQ:		7.0	29.2	47.2		34.4	13.1	4.4		11.5	51.6	4.8		32.9	33.5	19.1
98th%Factor:	2.46	1.97	1.81		1.91	2.29	2.55		2.33	1.78	2.53		1.93	1.92	2.15	
HCM2k98thQ:		8.6	33.3	52.6		38.8	15.7	5.6		13.9	57.5	6.0		37.2	37.8	22.4

Cumul + Reduce Dens Alt PM Pk Hr Mitigated

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	1.151
Loss Time (sec):	12	Average Delay (sec/veh):	78.8
Optimal Cycle:	180	Level Of Service:	E

Street Name:	West Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	3	0	2 0 1	2	0	2 0 1	2	0	3 1 0	2	0	3 1 0
Volume Module:	PM Peak Hour											
Base Vol:	757	748	108	150	687	445	718	1787	474	159	1781	102
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	757	748	108	150	687	445	718	1787	474	159	1781	102
Added Vol:	30	7	77	19	12	0	0	65	47	65	41	12
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	787	755	185	169	699	445	718	1852	521	224	1822	114
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	855	821	201	184	760	484	780	2013	566	243	1980	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	855	821	201	184	760	484	780	2013	566	243	1980	124
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	855	821	201	184	760	484	780	2013	566	243	1980	124
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.86	0.86	0.90	0.88	0.88
Lanes:	3.00	2.00	1.00	2.00	2.00	1.00	2.00	3.12	0.88	2.00	3.76	0.24
Final Sat.:	5147	3538	1583	3432	3538	1583	3432	5115	1439	3432	6321	396
Capacity Analysis Module:												
Vol/Sat:	0.17	0.23	0.13	0.05	0.21	0.31	0.23	0.39	0.39	0.07	0.31	0.31
Crit Moves:	****					****	****				****	
Green/Cycle:	0.14	0.33	0.33	0.08	0.27	0.27	0.20	0.40	0.40	0.07	0.27	0.27
Volume/Cap:	1.15	0.70	0.38	0.70	0.81	1.15	1.15	0.99	0.99	0.99	1.15	1.15
Delay/Veh:	125.7	30.8	25.9	52.9	39.6	128.6	124.2	44.8	44.8	100.3	111	111.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	125.7	30.8	25.9	52.9	39.6	128.6	124.2	44.8	44.8	100.3	111	111.0
LOS by Move:	F	C	C	D	D	F	F	D	D	F	F	F
HCM2k95thQ:	645	491	199	210	596	1071	933	1151	1151	251	1145	1145

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Dens Alt PM Pk Hr Mitigated

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	3	0	2	0 1	2	0	2	0 1	2	0	3	1 0	2	0	3	1 0
Lane Group:	L		T	R	L		T	R	L		RT	RT	L		RT	RT
#LnsInGrps:	3		2	1	2		2	1	2		4	4	2		4	4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.97	0.97		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.95	0.95		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.86	0.86		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Dens Alt PM Pk Hr Mitigated

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.14	0.33	0.33	0.08	0.27	0.27	0.20	0.40	0.40	0.07	0.27	0.27
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.93	0.88	0.99	0.97	1.00	1.00	0.99	0.99	1.00	1.00	1.00
Q1:	8.2	9.7	3.7	2.5	10.1	13.4	11.2	19.4	19.4	3.5	16.1	16.1
UpstreamVC:	0.46	0.46	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.42	0.42
UpstreamAdj:	0.89	0.89	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.91	0.91	0.91
EarlyArrAdj:	0.29	0.49	0.44	1.00	1.00	1.00	1.00	1.00	1.00	0.19	0.44	0.44
Q2:	6.4	1.1	0.3	1.7	3.3	12.7	11.1	8.9	8.9	1.7	12.1	12.1
HCM2KQueue:	14.6	10.7	4.0	4.3	13.4	26.1	22.3	28.3	28.3	5.1	28.2	28.2
70th%Factor:	1.17	1.18	1.19	1.19	1.17	1.15	1.16	1.15	1.15	1.19	1.15	1.15
HCM2k70thQ:	17.1	12.6	4.8	5.1	15.6	30.1	25.8	32.6	32.6	6.1	32.4	32.4
85th%Factor:	1.48	1.51	1.56	1.56	1.49	1.43	1.44	1.42	1.42	1.55	1.42	1.42
HCM2k85thQ:	21.7	16.2	6.3	6.6	19.9	37.2	32.1	40.1	40.1	8.0	39.9	39.9
90th%Factor:	1.59	1.63	1.73	1.72	1.61	1.51	1.53	1.50	1.50	1.71	1.50	1.50
HCM2k90thQ:	23.3	17.5	6.9	7.3	21.4	39.4	34.1	42.4	42.4	8.8	42.2	42.2
95th%Factor:	1.77	1.83	1.98	1.97	1.79	1.64	1.67	1.62	1.62	1.95	1.63	1.63
HCM2k95thQ:	25.8	19.6	7.9	8.4	23.8	42.8	37.3	46.0	46.0	10.0	45.8	45.8
98th%Factor:	2.02	2.14	2.43	2.42	2.06	1.83	1.88	1.81	1.81	2.37	1.81	1.81
HCM2k98thQ:	29.6	22.9	9.8	10.3	27.5	47.9	41.9	51.4	51.4	12.2	51.1	51.1

Cumul + Reduce Dens Alt PM Pk Hr Mitigated

Future Queue Length Report (feet)

Node	Intersection	Northbound L	-- T	-- R	Southbound L	-- T	-- R	Eastbound L	-- T	-- R	Westbound L	-- T	-- R
#5	[HCM2k95thQ]:	174	731	1179	860	328	111	289	1289	119	824	838	478
#8	[HCM2k95thQ]:	645	491	199	210	596	1071	933	1151	1151	251	1145	1145

Cumul + Reduce Proj Alt AM Pk Hr

Scenario Report

Scenario:	Cumul + Red Proj Alt AM
Command:	Cumul + Red Proj Alt AM
Volume:	Cumul Proj AM
Geometry:	Cumul Proj
Impact Fee:	Default Impact Fee
Trip Generation:	AM Pk Hr
Trip Distribution:	Cumul No Bridge AM
Paths:	Cumul Proj
Routes:	Default Route
Configuration:	Default Configuration

Cumul + Reduce Proj Alt AM Pk Hr

Trip Generation Report

Forecast for AM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	725.00	ElemSchStudent	0.25	0.20	181	145	326	32.9
1	Village West	0.00	Tra Vigne SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	0.60	0.36	0	0	0	0.0
1	Village West	613.00	Red Proj SFDU	0.18	0.53	110	325	435	43.9
1	Village West	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt MFDU	0.10	0.41	0	0	0	0.0
1	Village West	0.00	Tra V Internal	-6.00	-6.00	0	0	0	0.0
1	Village West	0.00	GP Alt Interna	-7.00	-7.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-11.00	-7.00	0	0	0	0.0
	Zone 1 Subtotal					291	470	761	76.7
2	Village East	0.00	Tra Vigne SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
2	Village East	325.00	Red Proj SFDU	0.18	0.53	59	172	231	23.3
2	Village East	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
	Zone 2 Subtotal					59	172	231	23.3
TOTAL						350	642	992	100.0

Cumul + Reduce Proj Alt AM Pk Hr

Trip Distribution Report

Percent Of Trips Cumul No Bridge AM

Zone	To Gates 1	2	3	4	5	6	7	8	9	10	11
1	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	1.0
2	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	1.0

Zone	To Gates 14	15	16	18	19	20	21	22	23	24	25
1	1.0	2.0	5.0	2.0	26.0	9.0	1.0	2.0	12.0	4.0	2.0
2	1.0	2.0	5.0	2.0	26.0	9.0	1.0	2.0	12.0	4.0	2.0

Zone	To Gates 26
1	2.0
2	2.0

Cumul + Reduce Proj Alt AM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	D	36.3	0.824	D	36.8	0.837	+ 0.460 D/V
# 4 Eight Mile Rd & Davis Rd	C	32.7	0.674	C	32.8	0.683	+ 0.050 D/V
# 5 Eight Mile & Lower Sacto Rd	D	35.7	0.842	D	37.2	0.877	+ 1.521 D/V
# 6 West Lane & Armstrong Road	E	70.6	1.106	E	70.4	1.106	-0.176 D/V
# 7 West Lane & Ham Lane	B	11.7	0.385	B	11.8	0.399	+ 0.147 D/V
# 8 Eight Mile Rd & West Ln	D	42.6	0.916	D	47.5	0.961	+ 4.916 D/V
# 9 Eight Mile Road & Ham Lane	C	21.8	0.594	C	22.0	0.642	+ 0.173 D/V
# 10 Eight Mile & Leach Rd/St J	A	1.0	0.323	A	5.7	0.383	+ 4.692 D/V
# 11 Eight Mile & MickeGrove/Holman	C	29.0	0.667	C	29.9	0.747	+ 0.885 D/V
# 12 Eight Mile & SR 99 W Frontage	C	25.5	0.648	C	25.4	0.660	-0.031 D/V
# 13 Eight Mile & SR 99 E Frontage	A	3.9	0.172	A	4.6	0.178	+ 0.706 D/V
# 17 Holman & Lt Col Mark Taylor	D	41.6	0.848	D	41.5	0.848	-0.063 D/V
# 18 Morada Lane & West Lane	C	33.0	0.762	C	33.7	0.793	+ 0.690 D/V
# 19 Morada Lane & Holman Road	C	33.4	0.516	C	33.4	0.527	+ 0.019 D/V
# 22 Morada Ln & SR99 W Frontage Rd	C	24.3	0.412	C	24.3	0.412	-0.044 D/V
# 24 West Ln & West Ln Frontage Rd	C	25.0	0.739	C	24.8	0.770	-0.139 D/V
# 25 West Lane & Knickerbocker Dr	C	24.1	0.708	C	23.9	0.739	-0.221 D/V
# 26 West Lane & Hammer Lane	C	34.6	0.793	C	34.6	0.793	-0.049 D/V
# 27 Hammer Lane & Holman Road	C	33.6	0.768	C	33.6	0.768	+ 0.004 D/V

Cumul + Reduce Proj Alt AM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

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Intersection #3 Eight Mile Rd & Thornton Rd

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Cycle (sec):	100	Critical Vol./Cap.(X):	0.837
Loss Time (sec):	12	Average Delay (sec/veh):	36.8
Optimal Cycle:	87	Level Of Service:	D

****

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	AM Peak Hour											
Base Vol:	125	350	114	445	600	207	241	1353	106	236	1406	228
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	125	350	114	445	600	207	241	1353	106	236	1406	228
Added Vol:	0	0	4	7	0	0	0	18	0	6	32	13
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	125	350	118	452	600	207	241	1371	106	242	1438	241
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	136	380	128	491	652	225	262	1490	115	263	1563	262
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	136	380	128	491	652	225	262	1490	115	263	1563	262
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	136	380	128	491	652	225	262	1490	115	263	1563	262
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	3.43	0.57
Final Sat.:	1769	3538	1583	1769	3538	1583	3432	6778	1583	3432	5677	951
Capacity Analysis Module:												
Vol/Sat:	0.08	0.11	0.08	0.28	0.18	0.14	0.08	0.22	0.07	0.08	0.28	0.28
Crit Moves:		****		****			****				****	
Green/Cycle:	0.14	0.13	0.13	0.33	0.32	0.32	0.09	0.31	0.31	0.11	0.33	0.33
Volume/Cap:	0.57	0.84	0.63	0.84	0.57	0.44	0.84	0.71	0.23	0.71	0.84	0.84
Delay/Veh:	43.7	55.4	47.6	41.2	28.6	27.2	62.4	31.5	25.8	49.1	34.1	34.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.7	55.4	47.6	41.2	28.6	27.2	62.4	31.5	25.8	49.1	34.1	34.1
LOS by Move:	D	E	D	D	C	C	E	C	C	D	C	C
HCM2k95thQ:	228	399	235	698	395	250	212	467	110	200	629	629

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Note: Queue reported is the distance per lane in feet.

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Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 2	0 1		1	0 2	0 1		2	0 4	0 1		2	0 3	1 0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	2	1		1	2	1		2	4	1		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.98	0.98	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.96	0.96	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.90	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.14	0.13	0.13		0.33	0.32	0.32		0.09	0.31	0.31		0.11	0.33	0.33	
ArrivalType:		4				4				4				4		
ProgFactor:	0.97	0.99	0.98		0.96	0.91	0.89		0.99	0.94	0.87		0.99	0.96	0.96	
Q1:	3.4	5.4	3.3		12.1	7.2	4.4		3.7	9.4	2.1		3.6	12.4	12.4	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.74	0.74	0.74		0.61	0.61	0.61	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.60	0.60	0.60		0.75	0.75	0.75	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.15	0.32	0.29		0.21	0.41	0.41	
Q2:	1.2	3.1	1.5		3.9	1.3	0.8		0.6	0.7	0.1		0.5	1.8	1.8	
HCM2KQueue:	4.6	8.5	4.8		16.0	8.4	5.1		4.3	10.1	2.2		4.1	14.2	14.2	
70th%Factor:	1.19	1.18	1.19		1.17	1.18	1.19		1.19	1.18	1.19		1.19	1.17	1.17	
HCM2k70thQ:	5.5	10.1	5.7		18.6	10.0	6.1		5.1	11.9	2.6		4.8	16.6	16.6	
85th%Factor:	1.56	1.53	1.56		1.48	1.53	1.55		1.56	1.51	1.58		1.56	1.49	1.49	
HCM2k85thQ:	7.2	13.0	7.4		23.6	12.9	8.0		6.7	15.4	3.4		6.3	21.1	21.1	
90th%Factor:	1.72	1.66	1.71		1.58	1.66	1.71		1.72	1.64	1.76		1.73	1.60	1.60	
HCM2k90thQ:	8.0	14.1	8.2		25.2	14.0	8.8		7.4	16.6	3.8		7.0	22.6	22.6	
95th%Factor:	1.96	1.87	1.96		1.75	1.88	1.95		1.97	1.84	2.03		1.98	1.77	1.77	
HCM2k95thQ:	9.1	16.0	9.4		27.9	15.8	10.0		8.5	18.7	4.4		8.0	25.1	25.1	
98th%Factor:	2.40	2.22	2.39		1.99	2.22	2.37		2.42	2.16	2.55		2.43	2.04	2.04	
HCM2k98thQ:	11.2	18.9	11.5		31.8	18.7	12.2		10.4	21.9	5.5		9.9	28.9	28.9	

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.683
Loss Time (sec):	12	Average Delay (sec/veh):	32.8
Optimal Cycle:	57	Level Of Service:	C

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	AM Peak Hour											
Base Vol:	212	292	146	210	521	129	150	1297	186	298	1273	102
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	212	292	146	210	521	129	150	1297	186	298	1273	102
Added Vol:	0	0	7	4	0	0	0	28	0	13	51	6
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	212	292	153	214	521	129	150	1325	186	311	1324	108
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	230	317	166	233	566	140	163	1440	202	338	1439	117
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	230	317	166	233	566	140	163	1440	202	338	1439	117
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	230	317	166	233	566	140	163	1440	202	338	1439	117
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.88	0.88
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	3.70	0.30
Final Sat.:	1769	3538	1583	1769	3538	1583	3432	6778	1583	3432	6198	506
Capacity Analysis Module:												
Vol/Sat:	0.13	0.09	0.11	0.13	0.16	0.09	0.05	0.21	0.13	0.10	0.23	0.23
Crit Moves:	****				****			****		****		
Green/Cycle:	0.19	0.19	0.19	0.24	0.23	0.23	0.08	0.31	0.31	0.14	0.38	0.38
Volume/Cap:	0.68	0.48	0.56	0.56	0.68	0.38	0.61	0.68	0.41	0.68	0.61	0.61
Delay/Veh:	43.3	36.7	39.1	35.3	37.3	32.8	49.0	31.1	27.8	44.5	25.7	25.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.3	36.7	39.1	35.3	37.3	32.8	49.0	31.1	27.8	44.5	25.7	25.7
LOS by Move:	D	D	D	D	D	C	D	C	C	D	C	C
HCM2k95thQ:	363	236	253	314	427	181	124	448	206	304	464	464

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Lane Group:	L	T	R	L	T	R	L	T	R	L	RT	RT
#LnsInGrps:	1	2	1	1	2	1	2	4	1	2	4	4
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	0.99	0.99
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.97	0.97
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	0.91
Fnl Sat Adj:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.88	0.88
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.19	0.19	0.19	0.24	0.23	0.23	0.08	0.31	0.31	0.14	0.38	0.38
ArrivalType:		4			4			4			4	
ProgFactor:	0.97	0.95	0.96	0.94	0.96	0.93	0.99	0.93	0.89	0.98	0.89	0.89
Q1:	5.8	3.9	4.0	5.4	7.2	3.0	2.2	9.0	4.0	4.5	8.5	8.5
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.71	0.71	0.71	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.64	0.64	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.14	0.34	0.31	1.00	1.00	1.00
Q2:	1.9	0.9	1.2	1.2	1.9	0.6	0.2	0.7	0.2	1.8	1.5	1.5
HCM2KQueue:	7.7	4.8	5.2	6.6	9.2	3.6	2.5	9.7	4.2	6.3	10.1	10.1
70th%Factor:	1.18	1.19	1.19	1.18	1.18	1.19	1.19	1.18	1.19	1.19	1.18	1.18
HCM2k70thQ:	9.1	5.7	6.2	7.8	10.8	4.3	2.9	11.4	5.0	7.5	11.9	11.9
85th%Factor:	1.53	1.56	1.55	1.54	1.52	1.57	1.58	1.52	1.56	1.54	1.51	1.51
HCM2k85thQ:	11.7	7.5	8.1	10.1	14.0	5.7	3.9	14.7	6.5	9.8	15.2	15.2
90th%Factor:	1.67	1.71	1.71	1.69	1.65	1.73	1.75	1.65	1.72	1.69	1.64	1.64
HCM2k90thQ:	12.8	8.3	8.9	11.1	15.2	6.3	4.3	16.0	7.2	10.7	16.5	16.5
95th%Factor:	1.89	1.96	1.95	1.92	1.86	1.99	2.02	1.85	1.98	1.92	1.84	1.84
HCM2k95thQ:	14.5	9.4	10.1	12.6	17.1	7.2	5.0	17.9	8.3	12.2	18.5	18.5
98th%Factor:	2.25	2.39	2.37	2.30	2.19	2.46	2.53	2.17	2.43	2.31	2.16	2.16
HCM2k98thQ:	17.3	11.5	12.3	15.1	20.1	8.9	6.2	21.1	10.1	14.6	21.8	21.8

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.877
Loss Time (sec):	12	Average Delay (sec/veh):	37.2
Optimal Cycle:	100	Level Of Service:	D

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	AM Peak Hour											
Base Vol:	115	394	261	543	611	101	125	1432	93	504	1440	286
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	115	394	261	543	611	101	125	1432	93	504	1440	286
Added Vol:	0	0	18	7	0	0	0	39	0	32	71	13
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	115	394	279	550	611	101	125	1471	93	536	1511	299
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	125	428	303	598	664	110	136	1599	101	583	1642	325
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	125	428	303	598	664	110	136	1599	101	583	1642	325
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	125	428	303	598	664	110	136	1599	101	583	1642	325
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.87	0.87
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	4.00	1.00	2.00	3.34	0.66
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	6778	1583	3432	5517	1092
Capacity Analysis Module:												
Vol/Sat:	0.04	0.12	0.19	0.17	0.19	0.07	0.04	0.24	0.06	0.17	0.30	0.30
Crit Moves:			****	****				****		****		
Green/Cycle:	0.07	0.22	0.22	0.20	0.35	0.35	0.05	0.27	0.27	0.19	0.41	0.41
Volume/Cap:	0.54	0.55	0.88	0.88	0.54	0.20	0.73	0.88	0.24	0.88	0.73	0.73
Delay/Veh:	47.6	35.6	59.2	51.2	26.5	22.9	60.1	40.1	28.8	51.8	25.9	25.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.6	35.6	59.2	51.2	26.5	22.9	60.1	40.1	28.8	51.8	25.9	25.9
LOS by Move:	D	D	E	D	C	C	E	D	C	D	C	C
HCM2k95thQ:	137	310	545	553	379	104	182	695	115	544	613	613

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	4	0	1	2	0	3	1	0
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	2	2	1		2	2	1		2	4	1		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.98	0.98	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.96	0.96	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.07	0.22	0.22		0.20	0.35	0.35		0.05	0.27	0.27		0.19	0.41	0.41	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.95	0.98		0.99	0.89	0.84		0.99	0.98	0.90		0.99	0.90	0.90	
Q1:	1.7	5.3	8.0		8.2	6.9	1.8		1.9	11.4	2.0		8.0	11.3	11.3	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	1.0	1.2	4.0		4.1	1.1	0.2		1.7	4.5	0.3		4.0	2.5	2.5	
HCM2KQueue:	2.7	6.5	12.1		12.3	8.0	2.0		3.7	15.9	2.3		12.0	13.8	13.8	
70th%Factor:	1.19	1.19	1.17		1.17	1.18	1.20		1.19	1.17	1.19		1.17	1.17	1.17	
HCM2k70thQ:	3.3	7.7	14.2		14.4	9.5	2.4		4.4	18.6	2.7		14.1	16.1	16.1	
85th%Factor:	1.57	1.54	1.50		1.50	1.53	1.58		1.57	1.48	1.58		1.50	1.49	1.49	
HCM2k85thQ:	4.3	10.0	18.1		18.4	12.3	3.2		5.7	23.5	3.6		18.1	20.5	20.5	
90th%Factor:	1.75	1.69	1.62		1.62	1.67	1.76		1.73	1.58	1.76		1.62	1.60	1.60	
HCM2k90thQ:	4.8	10.9	19.5		19.8	13.4	3.6		6.3	25.1	4.0		19.5	22.1	22.1	
95th%Factor:	2.02	1.92	1.81		1.80	1.88	2.04		1.99	1.75	2.03		1.81	1.78	1.78	
HCM2k95thQ:	5.5	12.4	21.8		22.1	15.2	4.2		7.3	27.8	4.6		21.7	24.5	24.5	
98th%Factor:	2.51	2.31	2.10		2.09	2.24	2.55		2.45	1.99	2.54		2.10	2.05	2.05	
HCM2k98thQ:	6.8	14.9	25.3		25.6	18.0	5.2		9.0	31.7	5.8		25.2	28.2	28.2	

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec):	100	Critical Vol./Cap.(X):	1.106
Loss Time (sec):	12	Average Delay (sec/veh):	70.4
Optimal Cycle:	180	Level Of Service:	E

Street Name:	West Lane								Armstrong Road			
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 2	0 1		1	0 2	0 1		1	0 2	0 1		1	0 2	0 1	
Volume Module:AM Peak Hour																
Base Vol:	29	371	257		587	528	28		37	442	23		488	451	332	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	29	371	257		587	528	28		37	442	23		488	451	332	
Added Vol:	0	45	0		0	25	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	29	416	257		587	553	28		37	442	23		488	451	332	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	32	452	279		638	601	30		40	480	25		530	490	361	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	32	452	279		638	601	30		40	480	25		530	490	361	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	32	452	279		638	601	30		40	480	25		530	490	361	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Lanes:	1.00	2.00	1.00		1.00	2.00	1.00		1.00	2.00	1.00		1.00	2.00	1.00	
Final Sat.:	1769	3538	1583		1769	3538	1583		1769	3538	1583		1769	3538	1583	
Capacity Analysis Module:																
Vol/Sat:	0.02	0.13	0.18		0.36	0.17	0.02		0.02	0.14	0.02		0.30	0.14	0.23	
Crit Moves:			****		****					****			****			
Green/Cycle:	0.05	0.16	0.16		0.33	0.44	0.44		0.04	0.12	0.12		0.27	0.36	0.36	
Volume/Cap:	0.39	0.80	1.11		1.11	0.39	0.04		0.64	1.11	0.13		1.11	0.39	0.64	
Delay/Veh:	49.3	48.5	129.9		103.4	19.1	16.0		67.1	119	39.4		109.5	24.1	29.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	49.3	48.5	129.9		103.4	19.1	16.0		67.1	119	39.4		109.5	24.1	29.1	
LOS by Move:	D	D	F		F	B	B		E	F	D		F	C	C	
HCM2k95thQ:	73	426	682		1254	259	21		118	635	38		1090	254	426	

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 2	0 1		1	0 2	0 1		1	0 2	0 1		1	0 2	0 1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	2	1		1	2	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.05	0.16	0.16	0.33	0.44	0.44	0.04	0.12	0.12	0.27	0.36	0.36
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.98	1.00	1.00	0.79	0.74	1.00	1.00	0.96	1.00	0.86	0.90
Q1:	0.8	6.3	7.8	17.7	4.7	0.4	1.1	7.0	0.6	14.7	4.6	7.5
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.6	2.9	7.8	13.5	0.6	0.0	1.2	7.3	0.1	11.9	0.6	1.6
HCM2KQueue:	1.4	9.2	15.6	31.2	5.3	0.4	2.3	14.4	0.7	26.6	5.2	9.2
70th%Factor:	1.20	1.18	1.17	1.15	1.19	1.20	1.19	1.17	1.20	1.15	1.19	1.18
HCM2k70thQ:	1.7	10.8	18.2	35.8	6.3	0.5	2.8	16.8	0.9	30.7	6.2	10.8
85th%Factor:	1.59	1.52	1.48	1.41	1.55	1.60	1.58	1.49	1.59	1.42	1.55	1.52
HCM2k85thQ:	2.2	13.9	23.0	43.9	8.3	0.6	3.7	21.3	1.2	37.9	8.1	13.9
90th%Factor:	1.77	1.65	1.58	1.48	1.71	1.79	1.76	1.60	1.79	1.51	1.71	1.65
HCM2k90thQ:	2.5	15.1	24.7	46.4	9.1	0.7	4.1	22.9	1.3	40.1	8.9	15.2
95th%Factor:	2.05	1.86	1.75	1.61	1.95	2.09	2.03	1.77	2.08	1.64	1.95	1.86
HCM2k95thQ:	2.9	17.0	27.3	50.2	10.4	0.8	4.7	25.4	1.5	43.6	10.2	17.1
98th%Factor:	2.60	2.19	2.00	1.79	2.36	2.67	2.54	2.03	2.64	1.83	2.37	2.19
HCM2k98thQ:	3.7	20.1	31.2	55.9	12.6	1.1	5.9	29.2	2.0	48.7	12.4	20.1

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.399
Loss Time (sec):	9	Average Delay (sec/veh):	11.8
Optimal Cycle:	29	Level Of Service:	B

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Volume Module:	AM Peak Hour											
Base Vol:	32	13	19	42	28	30	32	791	30	42	791	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	32	13	19	42	28	30	32	791	30	42	791	19
Added Vol:	0	0	13	0	0	0	0	32	0	6	18	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	32	13	32	42	28	30	32	823	30	48	809	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	35	14	35	46	30	33	35	895	33	52	879	21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	14	35	46	30	33	35	895	33	52	879	21
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	35	14	35	46	30	33	35	895	33	52	879	21
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	0.81	0.81	0.81	0.81	0.93	0.93	0.93	0.93	0.93	0.93
Lanes:	0.41	0.17	0.42	0.42	0.28	0.30	1.00	1.93	0.07	1.00	1.95	0.05
Final Sat.:	636	258	636	646	431	462	1769	3396	124	1769	3446	81
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.05	0.07	0.07	0.07	0.02	0.26	0.26	0.03	0.26	0.26
Crit Moves:					****			****		****		
Green/Cycle:	0.18	0.18	0.18	0.18	0.18	0.18	0.05	0.66	0.66	0.07	0.68	0.68
Volume/Cap:	0.31	0.31	0.31	0.40	0.40	0.40	0.37	0.40	0.40	0.40	0.37	0.37
Delay/Veh:	36.5	36.5	36.5	37.4	37.4	37.4	48.3	8.0	8.0	46.2	6.9	6.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.5	36.5	36.5	37.4	37.4	37.4	48.3	8.0	8.0	46.2	6.9	6.9
LOS by Move:	D	D	D	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	119	119	119	160	160	160	76	160	160	101	124	124

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	0	0	1!	0	0	0	0	1!	0	0	1	0	1	1	0	1
Lane Group:	LTR	LTR	LTR		LTR	LTR	LTR		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	2	2		1	2	2	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	5	5	5		5	5	5		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	1.00	1.00	1.00		1.00	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	1.00	1.00	1.00		1.00	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	0.94	0.94	0.94		0.96	0.96	0.96		xxxx	1.00	1.00		xxxx	1.00	1.00	
LT Adj:	0.87	0.87	0.87		0.86	0.86	0.86		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.81	0.81	0.81		0.81	0.81	0.81		0.93	0.98	0.98		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	0.95		1.00	0.95	0.95	
Fnl Sat Adj:	0.81	0.81	0.81		0.81	0.81	0.81		0.93	0.93	0.93		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	100	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	16.68	16.68	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	17.68	17.68	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	17.68	17.68	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	1	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	1	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	35	46	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	0.42	0.42	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	0.42	0.42	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	0.97	1.27	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	109	84	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	3.03	2.33	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	1.33	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	3.00	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	4.19	3.15	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	0.76	0.76	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	5.64	4.09	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	12.04	13.59	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	0.72	0.47	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	0.58	0.58	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	1.56	1.53	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	1.00	1.00	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	0.16	0.16	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	0.87	0.86	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	0.87	0.86	xxxxxx	xxxxxx

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.18	0.18	0.18	0.18	0.18	0.18	0.05	0.66	0.66	0.07	0.68	0.68
ArrivalType:		4			4			4			4	
ProgFactor:	0.95	0.95	0.95	0.95	0.95	0.95	0.99	0.40	0.40	0.98	0.33	0.33
Q1:	1.9	1.9	1.9	2.5	2.5	2.5	0.9	2.5	2.5	1.4	1.8	1.8
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.4	0.4	0.4	0.6	0.6	0.6	0.6	0.7	0.7	0.6	0.6	0.6
HCM2KQueue:	2.4	2.4	2.4	3.2	3.2	3.2	1.5	3.2	3.2	2.0	2.4	2.4
70th%Factor:	1.19	1.19	1.19	1.19	1.19	1.19	1.20	1.19	1.19	1.20	1.19	1.19
HCM2k70thQ:	2.8	2.8	2.8	3.8	3.8	3.8	1.8	3.8	3.8	2.4	2.9	2.9
85th%Factor:	1.58	1.58	1.58	1.57	1.57	1.57	1.59	1.57	1.57	1.58	1.58	1.58
HCM2k85thQ:	3.7	3.7	3.7	5.0	5.0	5.0	2.3	5.0	5.0	3.1	3.8	3.8
90th%Factor:	1.76	1.76	1.76	1.74	1.74	1.74	1.77	1.74	1.74	1.76	1.75	1.75
HCM2k90thQ:	4.1	4.1	4.1	5.6	5.6	5.6	2.6	5.6	5.6	3.5	4.3	4.3
95th%Factor:	2.03	2.03	2.03	2.00	2.00	2.00	2.05	2.00	2.00	2.04	2.02	2.02
HCM2k95thQ:	4.8	4.8	4.8	6.4	6.4	6.4	3.0	6.4	6.4	4.0	4.9	4.9
98th%Factor:	2.53	2.53	2.53	2.48	2.48	2.48	2.59	2.48	2.48	2.56	2.53	2.53
HCM2k98thQ:	6.0	6.0	6.0	7.9	7.9	7.9	3.8	7.9	7.9	5.1	6.2	6.2

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.961
Loss Time (sec):	12	Average Delay (sec/veh):	47.5
Optimal Cycle:	147	Level Of Service:	D

Street Name:	West Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	3 1	0	2 0	3 1	0
Volume Module:	AM Peak Hour											
Base Vol:	465	336	59	129	751	427	442	1345	455	137	1344	56
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	465	336	59	129	751	427	442	1345	455	137	1344	56
Added Vol:	50	12	56	11	7	0	0	34	29	71	66	20
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	515	348	115	140	758	427	442	1379	484	208	1410	76
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	560	378	125	152	824	464	480	1499	526	226	1533	83
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	560	378	125	152	824	464	480	1499	526	226	1533	83
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	560	378	125	152	824	464	480	1499	526	226	1533	83
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.86	0.86	0.90	0.88	0.88
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.80	0.20
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	4885	1628	3432	6380	344
Capacity Analysis Module:												
Vol/Sat:	0.16	0.11	0.08	0.04	0.23	0.29	0.14	0.31	0.32	0.07	0.24	0.24
Crit Moves:	****					****			****	****		
Green/Cycle:	0.17	0.34	0.34	0.14	0.31	0.31	0.15	0.34	0.34	0.07	0.26	0.26
Volume/Cap:	0.96	0.32	0.24	0.32	0.76	0.96	0.94	0.91	0.96	0.96	0.94	0.94
Delay/Veh:	68.8	24.9	24.2	39.1	34.7	65.1	67.5	38.0	44.3	93.9	47.0	47.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.8	24.9	24.2	39.1	34.7	65.1	67.5	38.0	44.3	93.9	47.0	47.0
LOS by Move:	E	C	C	D	C	E	E	D	D	F	D	D
HCM2k95thQ:	493	189	116	119	587	814	519	843	948	228	676	676

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	3	1	0	2
Lane Group:	L	T	R		L	T	R		L	RT	RT		L	RT	RT	
#LnsInGrps:	2	2	1		2	2	1		2	4	4		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.96	0.96		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.94	0.94		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.86	0.86		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.17	0.34	0.34		0.14	0.31	0.31		0.15	0.34	0.34		0.07	0.26	0.26	
ArrivalType:	4				4				4				4			
ProgFactor:	1.00	0.87	0.86		0.96	0.95	0.99		1.00	0.97	0.99		1.00	0.99	0.99	
Q1:	7.9	3.6	2.1		1.9	10.4	12.6		6.8	14.2	15.6		3.2	11.9	11.9	
UpstreamVC:	0.31	0.31	0.31		0.00	0.00	0.00		0.00	0.00	0.00		0.37	0.37	0.37	
UpstreamAdj:	0.96	0.96	0.96		0.00	0.00	0.00		0.00	0.00	0.00		0.94	0.94	0.94	
EarlyArrAdj:	0.34	0.53	0.48		1.00	1.00	1.00		1.00	1.00	1.00		0.19	0.44	0.44	
Q2:	2.9	0.2	0.1		0.5	2.8	6.5		4.6	5.6	7.1		1.4	3.5	3.5	
HCM2KQueue:	10.8	3.8	2.3		2.3	13.1	19.1		11.4	19.9	22.7		4.6	15.4	15.4	
70th%Factor:	1.18	1.19	1.19		1.19	1.17	1.16		1.18	1.16	1.16		1.19	1.17	1.17	
HCM2k70thQ:	12.7	4.5	2.7		2.8	15.4	22.2		13.4	23.0	26.3		5.5	18.0	18.0	
85th%Factor:	1.51	1.56	1.58		1.58	1.49	1.46		1.50	1.45	1.44		1.56	1.48	1.48	
HCM2k85thQ:	16.3	6.0	3.6		3.7	19.6	27.8		17.2	28.9	32.7		7.2	22.8	22.8	
90th%Factor:	1.63	1.73	1.76		1.76	1.61	1.55		1.63	1.55	1.53		1.72	1.59	1.59	
HCM2k90thQ:	17.6	6.6	4.0		4.1	21.1	29.6		18.6	30.7	34.7		8.0	24.4	24.4	
95th%Factor:	1.83	1.99	2.03		2.03	1.79	1.71		1.82	1.70	1.67		1.96	1.75	1.75	
HCM2k95thQ:	19.7	7.6	4.6		4.7	23.5	32.6		20.8	33.7	37.9		9.1	27.0	27.0	
98th%Factor:	2.14	2.45	2.54		2.54	2.06	1.93		2.12	1.92	1.87		2.40	2.01	2.01	
HCM2k98thQ:	23.0	9.3	5.8		5.9	27.1	36.8		24.2	38.1	42.6		11.1	30.9	30.9	

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.642
Loss Time (sec):	9	Average Delay (sec/veh):	22.0
Optimal Cycle:	45	Level Of Service:	C

Street Name:	Ham Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	0	0	1	0	0	0	1	1	0
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	407	0	73	92	1369	0	0	1460	231
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	407	0	73	92	1369	0	0	1460	231
Added Vol:	0	0	0	4	0	19	32	149	0	0	133	12
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	411	0	92	124	1518	0	0	1593	243
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	447	0	100	135	1650	0	0	1732	264
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	447	0	100	135	1650	0	0	1732	264
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	447	0	100	135	1650	0	0	1732	264
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.93	1.00	0.83	0.93	0.89	1.00	1.00	0.89	0.83
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	4.00	0.00	0.00	4.00	1.00
Final Sat.:	0	0	0	1769	0	1583	1769	6778	0	0	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.25	0.00	0.06	0.08	0.24	0.00	0.00	0.26	0.17
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.39	0.00	0.39	0.12	0.52	0.00	0.00	0.40	0.40
Volume/Cap:	0.00	0.00	0.00	0.64	0.00	0.16	0.64	0.47	0.00	0.00	0.64	0.42
Delay/Veh:	0.0	0.0	0.0	26.7	0.0	19.8	48.6	15.5	0.0	0.0	24.9	22.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	26.7	0.0	19.8	48.6	15.5	0.0	0.0	24.9	22.2
LOS by Move:	A	A	A	C	A	B	D	B	A	A	C	C
HCM2k95thQ:	0	0	0	486	0	84	196	306	0	0	478	235

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	0	0	0	0	0		1	0	0	0	1		1	0	4	0	0		0	0	4	0	1	
Lane Group:	xxxx	xxxx		xxxx			L	xxxx		R			L		T		xxxx		xxxx		T		R	
#LnsInGrps:	0	0		0			1	0		1			1		4		0		0		4		1	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12	12		12			12	12		12			12	12		12			12	12		12		
CrsswalkWid:		8						8						8						8				
% Hev Veh:		2						2						2						2				
Grade:		0%						0%						0%						0%				
Parking/Hr:		No						No						No						No				
Bus Stp/Hr:		0						0						0						0				
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:		0						0						0						0				
ExclusiveRT:		Include						Include						Include						Include				
% RT Prtct:		0						0						0						0				
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	xxxx	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx			xxxx	xxxx		xxxx		
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	xxxx	xxxx		xxxxx			1.00	xxxx		1.00			1.00	1.00		xxxxx			xxxx	1.00		1.00		
Hev Veh Adj:	xxxx	xxxx		xxxxx			0.98	xxxx		0.98			0.98	0.98		xxxxx			xxxx	0.98		0.98		
Grade Adj:	xxxx	xxxx		xxxxx			1.00	xxxx		1.00			1.00	1.00		xxxxx			xxxx	1.00		1.00		
Parking Adj:	xxxx	xxxx		xxxxx			xxxx	xxxx		1.00			xxxx	1.00		xxxxx			xxxx	xxxx		1.00		
Bus Stp Adj:	xxxx	xxxx		xxxxx			xxxx	xxxx		1.00			xxxx	1.00		xxxxx			xxxx	xxxx		1.00		
Area Adj:	xxxx	xxxx		xxxxx			1.00	xxxx		1.00			1.00	1.00		xxxxx			xxxx	1.00		1.00		
RT Adj:	xxxx	xxxx		xxxxx			xxxx	xxxx		0.85			xxxx	xxxx		xxxxx			xxxx	xxxx		0.85		
LT Adj:	xxxx	xxxx		xxxxx			0.95	xxxx		xxxxx			0.95	xxxx		xxxxx			xxxx	xxxx		xxxxx		
PedBike Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
HCM Sat Adj:	1.00	1.00		1.00			0.93	1.00		0.83			0.93	0.98		1.00			1.00	0.98		0.83		
Usr Sat Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
MLF Sat Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	0.91		1.00			1.00	0.91		1.00		
Fnl Sat Adj:	1.00	1.00		1.00			0.93	1.00		0.83			0.93	0.89		1.00			1.00	0.89		0.83		
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	0.00	0.00		0.00			1.00	0.00		1.00			1.00	1.00		0.00			0.00	1.00		1.00		

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.00	0.00	0.00	0.39	0.00	0.39	0.12	0.52	0.00	0.00	0.40	0.40
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	1.00	1.00	0.88	1.00	0.80	0.98	0.72	1.00	1.00	0.88	0.84
Q1:	0.0	0.0	0.0	8.9	0.0	1.4	3.5	5.8	0.0	0.0	9.4	4.4
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.44	0.00	0.00	0.38	0.38
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.90	0.90	0.00	0.00	0.93	0.93
EarlyArrAdj:	0.00	0.00	0.00	1.00	0.00	1.00	0.26	0.65	0.00	0.00	0.57	0.52
Q2:	0.0	0.0	0.0	1.7	0.0	0.2	0.4	0.6	0.0	0.0	1.0	0.4
HCM2KQueue:	0.0	0.0	0.0	10.6	0.0	1.6	4.0	6.4	0.0	0.0	10.4	4.8
70th%Factor:	1.20	1.20	1.20	1.18	1.20	1.20	1.19	1.19	1.20	1.20	1.18	1.19
HCM2k70thQ:	0.0	0.0	0.0	12.5	0.0	2.0	4.7	7.6	0.0	0.0	12.2	5.7
85th%Factor:	1.60	1.60	1.60	1.51	1.60	1.58	1.56	1.54	1.60	1.60	1.51	1.56
HCM2k85thQ:	0.0	0.0	0.0	16.0	0.0	2.6	6.2	9.8	0.0	0.0	15.7	7.5
90th%Factor:	1.80	1.80	1.80	1.64	1.80	1.77	1.73	1.69	1.80	1.80	1.64	1.71
HCM2k90thQ:	0.0	0.0	0.0	17.3	0.0	2.9	6.8	10.8	0.0	0.0	17.0	8.2
95th%Factor:	2.10	2.10	2.10	1.83	2.10	2.05	1.98	1.92	2.10	2.10	1.84	1.96
HCM2k95thQ:	0.0	0.0	0.0	19.4	0.0	3.3	7.8	12.2	0.0	0.0	19.1	9.4
98th%Factor:	2.70	2.70	2.70	2.14	2.70	2.58	2.44	2.31	2.70	2.70	2.15	2.39
HCM2k98thQ:	0.0	0.0	0.0	22.7	0.0	4.2	9.6	14.7	0.0	0.0	22.4	11.5

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St J

Cycle (sec): 100 Critical Vol./Cap.(X): 0.383
Loss Time (sec): 12 Average Delay (sec/veh): 5.7
Optimal Cycle: 34 Level Of Service: A

Street Name:	Leach Road/Street J						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	3 1	0	1 0	3 1	0
Volume Module:	AM Peak Hour											
Base Vol:	0	0	0	0	0	4	0	1421	0	0	1772	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	4	0	1421	0	0	1772	2
Added Vol:	64	0	62	0	0	0	0	132	22	21	81	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	64	0	62	0	0	4	0	1553	22	21	1853	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	70	0	67	0	0	4	0	1688	24	23	2014	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	70	0	67	0	0	4	0	1688	24	23	2014	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	70	0	67	0	0	4	0	1688	24	23	2014	2
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	1.00	1.00	0.83	1.00	0.89	0.89	0.93	0.89	0.89
Lanes:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	3.94	0.06	1.00	3.99	0.01
Final Sat.:	1769	1900	1583	1900	0	1583	1900	6670	94	1769	6770	7
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.04	0.00	0.00	0.00	0.00	0.25	0.25	0.01	0.30	0.30
Crit Moves:	****				****		****				****	
Green/Cycle:	0.10	0.00	0.10	0.00	0.00	0.00	0.00	0.74	0.74	0.04	0.78	0.78
Volume/Cap:	0.38	0.00	0.41	0.00	0.00	xxxx	0.00	0.34	0.34	0.34	0.38	0.38
Delay/Veh:	43.2	0.0	43.8	0.0	0.0	0.0	0.0	4.6	4.6	50.0	3.6	3.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.2	0.0	43.8	0.0	0.0	0.0	0.0	4.6	4.6	50.0	3.6	3.6
LOS by Move:	D	A	D	A	A	A	A	A	A	D	A	A
HCM2k95thQ:	119	0	121	0	0	6	0	36	36	56	32	32

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	1	0	1	1	0	0	1	0	1	0	3	1	0	
Lane Group:	L	T	R		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	4	4		1	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	xxxx	0.98		xxxx	xxxx	0.98		xxxx	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	1.00	1.00		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	1.00	0.83		1.00	1.00	0.83		1.00	0.98	0.98		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.91	0.91		1.00	0.91	0.91	
Fnl Sat Adj:	0.93	1.00	0.83		1.00	1.00	0.83		1.00	0.89	0.89		0.93	0.89	0.89	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	1.00		0.00	0.00	0.00		0.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.10	0.00	0.10		0.00	0.00	0.00		0.00	0.74	0.74		0.04	0.78	0.78	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	1.00	0.98		1.00	1.00	1.00		1.00	0.06	0.06		0.99	0.00	0.00	
Q1:	1.8	0.0	1.7		0.0	0.0	0.1		0.0	0.3	0.3		0.6	0.0	0.0	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.47	0.47		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.88	0.88		0.00	0.00	0.00	
EarlyArrAdj:	1.00	0.00	1.00		0.00	0.00	0.00		0.00	0.78	0.78		1.00	1.00	1.00	
Q2:	0.6	0.0	0.7		0.0	0.0	0.0		0.0	0.4	0.4		0.5	0.6	0.6	
HCM2KQueue:	2.4	0.0	2.4		0.0	0.0	0.1		0.0	0.7	0.7		1.1	0.6	0.6	
70th%Factor:	1.19	1.20	1.19		1.20	1.20	1.20		1.20	1.20	1.20		1.20	1.20	1.20	
HCM2k70thQ:	2.8	0.0	2.8		0.0	0.0	0.1		0.0	0.8	0.8		1.3	0.7	0.7	
85th%Factor:	1.58	1.60	1.58		1.60	1.60	1.60		1.60	1.59	1.59		1.59	1.59	1.59	
HCM2k85thQ:	3.7	0.0	3.8		0.0	0.0	0.2		0.0	1.1	1.1		1.7	1.0	1.0	
90th%Factor:	1.76	1.80	1.76		1.80	1.80	1.80		1.80	1.79	1.79		1.78	1.79	1.79	
HCM2k90thQ:	4.1	0.0	4.2		0.0	0.0	0.2		0.0	1.2	1.2		1.9	1.1	1.1	
95th%Factor:	2.03	2.10	2.03		2.10	2.10	2.10		2.10	2.08	2.08		2.06	2.08	2.08	
HCM2k95thQ:	4.8	0.0	4.8		0.0	0.0	0.3		0.0	1.4	1.4		2.3	1.3	1.3	
98th%Factor:	2.53	2.70	2.53		2.70	2.70	2.69		2.70	2.65	2.65		2.62	2.65	2.65	
HCM2k98thQ:	6.0	0.0	6.0		0.0	0.0	0.3		0.0	1.8	1.8		2.9	1.6	1.6	

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Cycle (sec):	100	Critical Vol./Cap.(X):	0.747
Loss Time (sec):	12	Average Delay (sec/veh):	29.9
Optimal Cycle:	67	Level Of Service:	C

Street Name:	Micke Grove Road/Holman Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	1	0	2	0	1	2	0	4	0	1	2	0	4	0	1
Volume Module:	AM Peak Hour											
Base Vol:	358	77	22	36	226	248	229	1137	414	60	1143	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	358	77	22	36	226	248	229	1137	414	60	1143	14
Added Vol:	36	0	0	0	0	18	32	94	68	0	49	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	394	77	22	36	226	266	261	1231	482	60	1192	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	428	84	24	39	246	289	284	1338	524	65	1296	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	428	84	24	39	246	289	284	1338	524	65	1296	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	428	84	24	39	246	289	284	1338	524	65	1296	15
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	3538	1583	1769	3538	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.12	0.02	0.02	0.02	0.07	0.18	0.08	0.20	0.33	0.02	0.19	0.01
Crit Moves:	****					****			****	****		
Green/Cycle:	0.17	0.21	0.21	0.20	0.24	0.24	0.14	0.44	0.44	0.03	0.33	0.33
Volume/Cap:	0.75	0.11	0.07	0.11	0.28	0.75	0.58	0.45	0.75	0.75	0.58	0.03
Delay/Veh:	45.0	31.8	31.6	33.0	30.9	42.7	42.0	19.4	27.6	77.8	28.4	22.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.0	31.8	31.6	33.0	30.9	42.7	42.0	19.4	27.6	77.8	28.4	22.9
LOS by Move:	D	C	C	C	C	D	D	B	C	E	C	C
HCM2k95thQ:	380	53	29	49	154	445	244	310	594	58	378	13

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																				
Lanes:	2	0	2	0	1	1	0	2	0	1	2	0	4	0	1	2	0	4	0	1
Lane Group:	L		T		R	L		T		R	L		T		R	L		T		R
#LnsInGrps:	2		2		1	1		2		1	2		4		1	2		4		1
HCM Ops Input Saturation Adj Module:																				
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12
CrsswalkWid:	8					8					8					8				
% Hev Veh:	2					2					2					2				
Grade:	0%					0%					0%					0%				
Parking/Hr:	No					No					No					No				
Bus Stp/Hr:	0					0					0					0				
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																			
Cnft Ped/Hr:	0					0					0					0				
ExclusiveRT:	Include					Include					Include					Include				
% RT Prtct:	0					0					0					0				
HCM Ops f(lt) Adj Case Module:																				
f(lt) Case:	1	xxxx		xxxx		1	xxxx		xxxx		1	xxxx		xxxx		1	xxxx		xxxx	
HCM Ops Saturation Adj Module:																				
Ln Wid Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Hev Veh Adj:	0.98	0.98		0.98		0.98	0.98		0.98		0.98	0.98		0.98		0.98	0.98		0.98	
Grade Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Parking Adj:	xxxx	xxxx		1.00		xxxx	xxxx		1.00		xxxx	xxxx		1.00		xxxx	xxxx		1.00	
Bus Stp Adj:	xxxx	xxxx		1.00		xxxx	xxxx		1.00		xxxx	xxxx		1.00		xxxx	xxxx		1.00	
Area Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
RT Adj:	xxxx	xxxx		0.85		xxxx	xxxx		0.85		xxxx	xxxx		0.85		xxxx	xxxx		0.85	
LT Adj:	0.95	xxxx		xxxxx		0.95	xxxx		xxxxx		0.95	xxxx		xxxxx		0.95	xxxx		xxxxx	
PedBike Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
HCM Sat Adj:	0.93	0.98		0.83		0.93	0.98		0.83		0.93	0.98		0.83		0.93	0.98		0.83	
Usr Sat Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Sat Adj:	0.97	0.95		1.00		1.00	0.95		1.00		0.97	0.91		1.00		0.97	0.91		1.00	
Fnl Sat Adj:	0.90	0.93		0.83		0.93	0.93		0.83		0.90	0.89		0.83		0.90	0.89		0.83	
Delay Adjustment Factor Module:																				
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																			
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																			
DelAdjFctr:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.17	0.21	0.21	0.20	0.24	0.24	0.14	0.44	0.44	0.03	0.33	0.33
ArrivalType:	4			4			4			4		
ProgFactor:	0.98	0.92	0.91	0.92	0.91	0.96	0.97	0.80	0.88	1.00	0.91	0.84
Q1:	5.7	0.9	0.5	0.8	2.7	7.2	3.7	5.7	10.7	0.9	7.5	0.2
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.66	0.66
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.70	0.70
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.08	0.38	0.35
Q2:	2.4	0.1	0.1	0.1	0.4	2.5	1.3	0.8	2.6	0.2	0.5	0.0
HCM2KQueue:	8.1	1.0	0.6	0.9	3.1	9.6	5.0	6.5	13.3	1.1	8.0	0.3
70th%Factor:	1.18	1.20	1.20	1.20	1.19	1.18	1.19	1.19	1.17	1.20	1.18	1.20
HCM2k70thQ:	9.5	1.2	0.7	1.1	3.7	11.3	5.9	7.7	15.6	1.4	9.5	0.3
85th%Factor:	1.53	1.59	1.59	1.59	1.57	1.52	1.55	1.54	1.49	1.59	1.53	1.60
HCM2k85thQ:	12.4	1.6	0.9	1.5	4.8	14.6	7.7	10.0	19.9	1.8	12.3	0.4
90th%Factor:	1.67	1.78	1.79	1.78	1.74	1.65	1.71	1.69	1.61	1.78	1.67	1.79
HCM2k90thQ:	13.5	1.8	1.0	1.7	5.3	15.8	8.5	10.9	21.4	2.0	13.4	0.5
95th%Factor:	1.88	2.07	2.08	2.07	2.01	1.85	1.95	1.92	1.79	2.06	1.88	2.09
HCM2k95thQ:	15.2	2.1	1.2	2.0	6.1	17.8	9.7	12.4	23.8	2.3	15.1	0.5
98th%Factor:	2.24	2.62	2.66	2.63	2.49	2.18	2.38	2.31	2.06	2.62	2.24	2.68
HCM2k98thQ:	18.1	2.7	1.5	2.5	7.6	20.9	11.9	14.9	27.4	3.0	17.9	0.7

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Eight Mile & SR 99 W Frontage

Cycle (sec): 100 — Critical Vol./Cap.(X): 0.660
Loss Time (sec): 12 — Average Delay (sec/veh): 25.4
Optimal Cycle: 54 — Level Of Service: C

Street Name:	SR 99 West Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1	0	1 0	0	1	0	1	0	2 0	2 1 0
Volume Module:	AM Peak Hour											
Base Vol:	1	4	81	331	5	2	4	1176	1	133	1192	211
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	4	81	331	5	2	4	1176	1	133	1192	211
Added Vol:	0	0	0	0	0	0	0	94	0	0	49	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	4	81	331	5	2	4	1270	1	133	1241	211
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	1	4	88	360	5	2	4	1380	1	145	1349	229
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	4	88	360	5	2	4	1380	1	145	1349	229
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	4	88	360	5	2	4	1380	1	145	1349	229
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.84	0.84	0.93	0.94	0.94	0.93	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	0.05	0.95	1.00	0.71	0.29	1.00	3.00	1.00	2.00	2.56	0.44
Final Sat.:	1769	75	1521	1769	1273	509	1769	5083	1583	3432	4249	722
Capacity Analysis Module:												
Vol/Sat:	0.00	0.06	0.06	0.20	0.00	0.00	0.00	0.27	0.00	0.04	0.32	0.32
Crit Moves:		****		****			****				****	
Green/Cycle:	0.05	0.09	0.09	0.31	0.35	0.35	0.00	0.42	0.42	0.07	0.48	0.48
Volume/Cap:	0.01	0.66	0.66	0.66	0.01	0.01	0.66	0.65	0.00	0.65	0.66	0.66
Delay/Veh:	45.2	55.3	55.3	33.1	21.5	21.5	184.5	23.8	16.9	52.1	20.5	20.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.2	55.3	55.3	33.1	21.5	21.5	184.5	23.8	16.9	52.1	20.5	20.5
LOS by Move:	D	E	E	C	C	C	F	C	B	D	C	C
HCM2k95thQ:	2	198	198	456	7	7	9	491	1	118	511	511

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0	3	0	1	2
Lane Group:	L	RT		RT	L	RT		RT	L	T		R	L	RT		RT
#LnsInGrps:	1	1		1	1	1		1	1	3		1	2	3		3
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.86	0.86		xxxx	0.96	0.96		xxxx	xxxx	0.85		xxxx	0.98	0.98	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.84	0.84		0.93	0.94	0.94		0.93	0.98	0.83		0.93	0.96	0.96	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.84	0.84		0.93	0.94	0.94		0.93	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.05	0.09	0.09		0.31	0.35	0.35		0.00	0.42	0.42		0.07	0.48	0.48	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.99	0.99		0.93	0.83	0.83		1.00	0.87	0.76		0.99	0.82	0.82	
Q1:	0.0	2.5	2.5		8.1	0.1	0.1		0.1	9.7	0.0		2.0	10.0	10.0	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.45	0.45	0.45		0.33	0.33	0.33	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.90	0.90	0.90		0.95	0.95	0.95	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.03	0.57	0.51		0.19	0.65	0.65	
Q2:	0.0	1.5	1.5		1.8	0.0	0.0		0.1	1.0	0.0		0.3	1.2	1.2	
HCM2KQueue:	0.0	4.0	4.0		9.9	0.1	0.1		0.2	10.7	0.0		2.3	11.2	11.2	
70th%Factor:	1.20	1.19	1.19		1.18	1.20	1.20		1.20	1.18	1.20		1.19	1.18	1.18	
HCM2k70thQ:	0.0	4.8	4.8		11.6	0.2	0.2		0.2	12.6	0.0		2.8	13.2	13.2	
85th%Factor:	1.60	1.56	1.56		1.52	1.60	1.60		1.60	1.51	1.60		1.58	1.51	1.51	
HCM2k85thQ:	0.1	6.3	6.3		15.0	0.2	0.2		0.3	16.2	0.0		3.7	16.9	16.9	
90th%Factor:	1.80	1.73	1.73		1.64	1.80	1.80		1.80	1.63	1.80		1.76	1.63	1.63	
HCM2k90thQ:	0.1	6.9	6.9		16.3	0.2	0.2		0.3	17.5	0.0		4.1	18.3	18.3	
95th%Factor:	2.10	1.98	1.98		1.85	2.10	2.10		2.09	1.83	2.10		2.03	1.82	1.82	
HCM2k95thQ:	0.1	7.9	7.9		18.3	0.3	0.3		0.4	19.6	0.0		4.7	20.4	20.4	
98th%Factor:	2.70	2.44	2.44		2.17	2.69	2.69		2.69	2.14	2.70		2.54	2.12	2.12	
HCM2k98thQ:	0.1	9.7	9.7		21.4	0.3	0.3		0.5	22.9	0.0		5.9	23.8	23.8	

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Eight Mile & SR 99 E Frontage

Cycle (sec):	100	Critical Vol./Cap.(X):	0.178
Loss Time (sec):	12	Average Delay (sec/veh):	4.6
Optimal Cycle:	27	Level Of Service:	A

Street Name:	SR 99 East Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	2 0	1	1 0	1 1	0
Volume Module:AM Peak Hour												
Base Vol:	5	1	3	8	2	5	5	454	5	8	454	3
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	1	3	8	2	5	5	454	5	8	454	3
Added Vol:	7	0	0	0	0	0	0	6	13	0	4	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	12	1	3	8	2	5	5	460	18	8	458	3
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	13	1	3	9	2	5	5	500	20	9	498	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	13	1	3	9	2	5	5	500	20	9	498	3
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	13	1	3	9	2	5	5	500	20	9	498	3
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.87	0.87	0.93	0.88	0.88	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	1.00	0.25	0.75	1.00	0.29	0.71	1.00	2.00	1.00	1.00	1.99	0.01
Final Sat.:	1769	413	1240	1769	475	1188	1769	3538	1583	1769	3511	23
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.01	0.00	0.14	0.14
Crit Moves:	****				****		****				****	
Green/Cycle:	0.04	0.02	0.02	0.04	0.03	0.03	0.02	0.79	0.79	0.03	0.80	0.80
Volume/Cap:	0.18	0.11	0.11	0.11	0.18	0.18	0.18	0.18	0.02	0.18	0.18	0.18
Delay/Veh:	47.5	49.1	49.1	46.6	49.7	49.7	51.2	2.7	2.3	49.3	2.5	2.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.5	49.1	49.1	46.6	49.7	49.7	51.2	2.7	2.3	49.3	2.5	2.5
LOS by Move:	D	D	D	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	29	13	13	18	22	22	9	10	1	23	11	11

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	0 1	0		1 0	0 1	0		1 0	2 0	1		1 0	1 1	0	
Lane Group:	L	RT	RT		L	RT	RT		L	T	R		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	2	1		1	2	2	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.89	0.89		xxxx	0.89	0.89		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.87	0.87		0.93	0.88	0.88		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	0.95	
Fnl Sat Adj:	0.93	0.87	0.87		0.93	0.88	0.88		0.93	0.93	0.83		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.04	0.02	0.02	0.04	0.03	0.03	0.02	0.79	0.79	0.03	0.80	0.80
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.99	0.99	0.99	0.99	0.99	1.00	0.00	0.00	0.99	0.00	0.00
Q1:	0.3	0.1	0.1	0.2	0.2	0.2	0.1	0.0	0.0	0.2	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.20	0.20	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.99	0.99	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.09	0.91	0.83	1.00	1.00	1.00
Q2:	0.2	0.1	0.1	0.1	0.2	0.2	0.0	0.2	0.0	0.2	0.2	0.2
HCM2KQueue:	0.6	0.2	0.2	0.4	0.4	0.4	0.2	0.2	0.0	0.4	0.2	0.2
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	0.7	0.3	0.3	0.4	0.5	0.5	0.2	0.2	0.0	0.5	0.3	0.3
85th%Factor:	1.59	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
HCM2k85thQ:	0.9	0.4	0.4	0.6	0.7	0.7	0.3	0.3	0.0	0.7	0.3	0.3
90th%Factor:	1.79	1.80	1.80	1.79	1.79	1.79	1.80	1.80	1.80	1.79	1.80	1.80
HCM2k90thQ:	1.0	0.4	0.4	0.6	0.7	0.7	0.3	0.4	0.0	0.8	0.4	0.4
95th%Factor:	2.08	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.10	2.09	2.09	2.09
HCM2k95thQ:	1.2	0.5	0.5	0.7	0.9	0.9	0.4	0.4	0.0	0.9	0.5	0.5
98th%Factor:	2.66	2.68	2.68	2.67	2.67	2.67	2.69	2.68	2.70	2.67	2.68	2.68
HCM2k98thQ:	1.5	0.6	0.6	0.9	1.1	1.1	0.4	0.5	0.0	1.2	0.6	0.6

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

Cycle (sec):	100	Critical Vol./Cap.(X):	0.848
Loss Time (sec):	12	Average Delay (sec/veh):	41.5
Optimal Cycle:	90	Level Of Service:	D

Street Name:	Holman Road						Lt. Col. Mark Taylor Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 3	0 1	1	0 3	0 1	1	0 1	0 1	1	0 0	1 0
Volume Module:	AM Peak Hour											
Base Vol:	31	273	160	361	400	30	38	386	25	308	393	200
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	31	273	160	361	400	30	38	386	25	308	393	200
Added Vol:	0	5	0	0	10	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	31	278	160	361	410	30	38	386	25	308	393	200
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	34	302	174	392	446	33	41	420	27	335	427	217
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	302	174	392	446	33	41	420	27	335	427	217
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	34	302	174	392	446	33	41	420	27	335	427	217
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.98	0.83	0.93	0.93	0.93
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.00	1.00	1.00	0.66	0.34
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	1862	1583	1769	1171	596
Capacity Analysis Module:												
Vol/Sat:	0.02	0.06	0.11	0.22	0.09	0.02	0.02	0.23	0.02	0.19	0.36	0.36
Crit Moves:			****	****				****		****		
Green/Cycle:	0.07	0.13	0.13	0.26	0.32	0.32	0.03	0.27	0.27	0.22	0.46	0.46
Volume/Cap:	0.27	0.46	0.85	0.85	0.27	0.06	0.79	0.85	0.06	0.85	0.79	0.79
Delay/Veh:	45.3	40.8	69.2	48.7	25.3	23.6	104.1	47.7	27.5	52.9	28.4	28.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.3	40.8	69.2	48.7	25.3	23.6	104.1	47.7	27.5	52.9	28.4	28.4
LOS by Move:	D	D	E	D	C	C	F	D	C	D	C	C
HCM2k95thQ:	49	151	282	620	165	31	78	580	28	561	730	730

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 3	0 1		1	0 3	0 1		1	0 1	0 1		1	0 0	1 0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	3	1		1	3	1		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.95	0.95	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.93	0.93	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.98	0.83		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.07	0.13	0.13		0.26	0.32	0.32		0.03	0.27	0.27		0.22	0.46	0.46	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.97	0.99		0.97	0.87	0.85		1.00	0.97	0.88		0.98	0.89	0.89	
Q1:	0.9	2.8	4.7		10.1	2.9	0.5		1.1	10.8	0.5		8.7	13.5	13.5	
UpstreamVC:	0.36	0.36	0.36		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.94	0.94	0.94		0.00	0.00	0.00		1.00	1.00	1.00		0.00	0.00	0.00	
EarlyArrAdj:	0.20	0.29	0.27		1.00	1.00	1.00		0.12	0.48	0.44		1.00	1.00	1.00	
Q2:	0.1	0.2	1.2		3.9	0.4	0.1		0.4	2.2	0.0		3.7	3.3	3.3	
HCM2KQueue:	0.9	3.0	5.8		14.0	3.3	0.6		1.5	12.9	0.5		12.5	16.8	16.8	
70th%Factor:	1.20	1.19	1.19		1.17	1.19	1.20		1.20	1.17	1.20		1.17	1.17	1.17	
HCM2k70thQ:	1.1	3.6	6.9		16.3	3.9	0.7		1.8	15.2	0.6		14.6	19.6	19.6	
85th%Factor:	1.59	1.57	1.55		1.49	1.57	1.59		1.59	1.49	1.59		1.50	1.47	1.47	
HCM2k85thQ:	1.5	4.7	9.0		20.8	5.2	1.0		2.4	19.3	0.8		18.7	24.8	24.8	
90th%Factor:	1.78	1.74	1.70		1.60	1.74	1.79		1.77	1.61	1.79		1.61	1.57	1.57	
HCM2k90thQ:	1.7	5.2	9.9		22.3	5.8	1.1		2.7	20.8	0.9		20.1	26.5	26.5	
95th%Factor:	2.07	2.01	1.93		1.78	2.00	2.08		2.05	1.79	2.08		1.80	1.74	1.74	
HCM2k95thQ:	2.0	6.0	11.3		24.8	6.6	1.3		3.1	23.2	1.1		22.4	29.2	29.2	
98th%Factor:	2.63	2.49	2.34		2.04	2.48	2.65		2.59	2.07	2.66		2.08	1.97	1.97	
HCM2k98thQ:	2.5	7.5	13.6		28.5	8.2	1.6		3.9	26.8	1.4		26.0	33.2	33.2	

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.793
Loss Time (sec):	12	Average Delay (sec/veh):	33.7
Optimal Cycle:	75	Level Of Service:	C

Street Name:	West Lane						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	2	0	1	2	0	2	0	1
Volume Module:	AM Peak Hour											
Base Vol:	392	794	144	77	1369	89	110	345	355	263	294	34
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	392	794	144	77	1369	89	110	345	355	263	294	34
Added Vol:	0	91	0	50	167	13	7	0	0	0	0	30
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	392	885	144	127	1536	102	117	345	355	263	294	64
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	426	962	157	138	1670	111	127	375	386	286	320	70
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	426	962	157	138	1670	111	127	375	386	286	320	70
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	426	962	157	138	1670	111	127	375	386	286	320	70
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.93	0.83	0.90	0.93	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	3538	1583	3432	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.12	0.14	0.10	0.04	0.25	0.07	0.04	0.11	0.24	0.08	0.09	0.04
Crit Moves:	****				****				****	****		
Green/Cycle:	0.16	0.36	0.36	0.10	0.31	0.31	0.12	0.31	0.31	0.11	0.29	0.29
Volume/Cap:	0.79	0.39	0.27	0.39	0.79	0.23	0.31	0.34	0.79	0.79	0.31	0.15
Delay/Veh:	48.5	23.7	22.7	42.6	33.7	25.8	40.6	27.0	40.4	55.1	27.7	26.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.5	23.7	22.7	42.6	33.7	25.8	40.6	27.0	40.4	55.1	27.7	26.3
LOS by Move:	D	C	C	D	C	C	D	C	D	E	C	C
HCM2k95thQ:	400	258	148	122	632	116	104	211	560	310	183	73

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2 0 4 0 1			2 0 4 0 1			2 0 2 0 1			2 0 2 0 1		
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	4	1	2	4	1	2	2	1	2	2	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Fnl Sat Adj:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.93	0.83	0.90	0.93	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.16	0.36	0.36	0.10	0.31	0.31	0.12	0.31	0.31	0.11	0.29	0.29
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.86	0.84	0.98	0.95	0.87	0.97	0.89	0.95	0.99	0.89	0.88
Q1:	5.8	4.7	2.6	1.8	11.1	2.0	1.6	3.8	9.4	4.0	3.2	1.3
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	2.8	0.6	0.4	0.6	3.2	0.3	0.4	0.5	3.1	2.5	0.4	0.2
HCM2KQueue:	8.5	5.3	2.9	2.4	14.3	2.3	2.0	4.3	12.4	6.5	3.7	1.4
70th%Factor:	1.18	1.19	1.19	1.19	1.17	1.19	1.20	1.19	1.17	1.19	1.19	1.20
HCM2k70thQ:	10.1	6.3	3.5	2.9	16.7	2.7	2.4	5.1	14.6	7.7	4.4	1.7
85th%Factor:	1.53	1.55	1.57	1.58	1.49	1.58	1.58	1.56	1.50	1.54	1.57	1.59
HCM2k85thQ:	13.0	8.2	4.6	3.8	21.2	3.6	3.2	6.7	18.6	10.0	5.8	2.3
90th%Factor:	1.66	1.71	1.75	1.75	1.60	1.76	1.76	1.72	1.61	1.69	1.73	1.77
HCM2k90thQ:	14.2	9.0	5.1	4.2	22.8	4.0	3.6	7.4	20.1	10.9	6.4	2.5
95th%Factor:	1.87	1.95	2.01	2.02	1.77	2.03	2.04	1.97	1.80	1.92	1.99	2.05
HCM2k95thQ:	16.0	10.3	5.9	4.9	25.3	4.6	4.2	8.5	22.4	12.4	7.3	2.9
98th%Factor:	2.22	2.37	2.50	2.53	2.03	2.54	2.55	2.42	2.08	2.31	2.45	2.60
HCM2k98thQ:	19.0	12.5	7.4	6.1	29.0	5.8	5.2	10.4	25.9	14.9	9.0	3.7

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.527
Loss Time (sec):	12	Average Delay (sec/veh):	33.4
Optimal Cycle:	42	Level Of Service:	C

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:	AM Peak Hour											
Base Vol:	158	364	94	135	629	96	114	505	136	186	491	66
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	158	364	94	135	629	96	114	505	136	186	491	66
Added Vol:	3	4	0	0	8	2	1	28	5	0	17	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	161	368	94	135	637	98	115	533	141	186	508	66
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	175	400	102	147	692	107	125	579	153	202	552	72
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	175	400	102	147	692	107	125	579	153	202	552	72
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	175	400	102	147	692	107	125	579	153	202	552	72
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.10	0.08	0.06	0.08	0.14	0.07	0.07	0.11	0.10	0.11	0.11	0.05
Crit Moves:	****				****			****		****		
Green/Cycle:	0.19	0.22	0.22	0.23	0.26	0.26	0.17	0.22	0.22	0.22	0.26	0.26
Volume/Cap:	0.53	0.36	0.30	0.36	0.53	0.26	0.41	0.53	0.45	0.53	0.41	0.17
Delay/Veh:	38.2	33.4	33.2	33.0	32.2	29.8	37.9	35.1	34.9	36.0	30.7	28.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.2	33.4	33.2	33.0	32.2	29.8	37.9	35.1	34.9	36.0	30.7	28.7
LOS by Move:	D	C	C	C	C	C	D	D	C	D	C	C
HCM2k95thQ:	225	172	119	171	296	115	181	290	210	250	225	75

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	3	0	1	1	0	3	0	1	1	0	3	0	1	1
Lane Group:	L		T		R	L		T		R	L		T		R	R
#LnsInGrps:	1		3		1	1		3		1	1		3		1	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12		12	12		12		12	12		12		12	12
CrsswalkWid:			8					8					8			
% Hev Veh:			2					2					2			
Grade:			0%					0%					0%			
Parking/Hr:			No					No					No			
Bus Stp/Hr:			0					0					0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0					0					0			
ExclusiveRT:			Include					Include					Include			
% RT Prtct:			0					0					0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.19	0.22	0.22		0.23	0.26	0.26		0.17	0.22	0.22		0.22	0.26	0.26	
ArrivalType:		4				4				4				4		
ProgFactor:	0.96	0.93	0.93		0.93	0.93	0.91		0.96	0.95	0.94		0.95	0.92	0.90	
Q1:	4.2	3.2	2.2		3.2	5.6	2.1		3.0	4.9	3.5		4.7	4.3	1.4	
UpstreamVC:	0.36	0.36	0.36		0.27	0.27	0.27		0.00	0.00	0.00		0.36	0.36	0.36	
UpstreamAdj:	0.94	0.94	0.94		0.97	0.97	0.97		0.00	0.00	0.00		0.94	0.94	0.94	
EarlyArrAdj:	0.36	0.40	0.36		0.42	0.46	0.42		1.00	1.00	1.00		0.39	0.45	0.41	
Q2:	0.4	0.2	0.2		0.2	0.5	0.1		0.7	1.1	0.8		0.4	0.3	0.1	
HCM2KQueue:	4.6	3.5	2.4		3.4	6.1	2.3		3.6	6.0	4.3		5.1	4.6	1.5	
70th%Factor:	1.19	1.19	1.19		1.19	1.19	1.19		1.19	1.19	1.19		1.19	1.19	1.20	
HCM2k70thQ:	5.5	4.1	2.8		4.1	7.3	2.7		4.3	7.1	5.1		6.1	5.5	1.8	
85th%Factor:	1.56	1.57	1.58		1.57	1.54	1.58		1.57	1.55	1.56		1.55	1.56	1.59	
HCM2k85thQ:	7.1	5.4	3.7		5.4	9.5	3.6		5.7	9.3	6.6		8.0	7.1	2.3	
90th%Factor:	1.72	1.74	1.76		1.74	1.69	1.76		1.73	1.70	1.72		1.71	1.72	1.77	
HCM2k90thQ:	7.9	6.0	4.1		5.9	10.4	4.0		6.3	10.2	7.3		8.8	7.9	2.6	
95th%Factor:	1.97	2.00	2.03		2.00	1.93	2.03		1.99	1.93	1.97		1.95	1.97	2.05	
HCM2k95thQ:	9.0	6.9	4.8		6.8	11.8	4.6		7.3	11.6	8.4		10.0	9.0	3.0	
98th%Factor:	2.40	2.47	2.53		2.47	2.32	2.54		2.46	2.33	2.42		2.37	2.40	2.59	
HCM2k98thQ:	11.0	8.5	6.0		8.4	14.3	5.8		8.9	14.0	10.3		12.2	11.0	3.8	

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 Morada Ln & SR99 W Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.412
Loss Time (sec):	12	Average Delay (sec/veh):	24.3
Optimal Cycle:	36	Level Of Service:	C

Street Name:	SR 99 West Frontage Road											Morada Lane											
Approach:	North Bound				South Bound				East Bound				West Bound										
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected								
Rights:	Include					Include					Include					Include								
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1	0	1	2	0	0	1	0	1	0	2	1	0	1	0	2	0	1					
Volume Module:AM Peak Hour																									
Base Vol:	3	27	45	419	35	12	17	479	2	90	518	274													
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00													
Initial Bse:	3	27	45	419	35	12	17	479	2	90	518	274													
Added Vol:	0	0	0	0	0	0	0	28	0	0	17	0													
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0													
Initial Fut:	3	27	45	419	35	12	17	507	2	90	535	274													
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00													
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92													
PHF Volume:	3	29	49	455	38	13	18	551	2	98	582	298													
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0													
Reduced Vol:	3	29	49	455	38	13	18	551	2	98	582	298													
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00													
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00													
FinalVolume:	3	29	49	455	38	13	18	551	2	98	582	298													
Saturation Flow Module:																									
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900													
Adjustment:	0.90	0.98	0.83	0.90	0.94	0.94	0.93	0.89	0.89	0.93	0.93	0.83													
Lanes:	2.00	1.00	1.00	2.00	0.74	0.26	1.00	2.99	0.01	1.00	2.00	1.00													
Final Sat.:	3432	1862	1583	3432	1334	457	1769	5058	20	1769	3538	1583													
Capacity Analysis Module:																									
Vol/Sat:	0.00	0.02	0.03	0.13	0.03	0.03	0.01	0.11	0.11	0.06	0.16	0.19													
Crit Moves:			****	****			****					****													
Green/Cycle:	0.01	0.08	0.08	0.32	0.38	0.38	0.03	0.32	0.32	0.16	0.46	0.46													
Volume/Cap:	0.07	0.21	0.41	0.41	0.07	0.07	0.41	0.34	0.34	0.34	0.36	0.41													
Delay/Veh:	49.5	44.2	46.4	26.7	19.5	19.5	54.0	26.1	26.1	37.8	17.8	18.5													
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00													
AdjDel/Veh:	49.5	44.2	46.4	26.7	19.5	19.5	54.0	26.1	26.1	37.8	17.8	18.5													
LOS by Move:	D	D	D	C	B	B	D	C	C	D	B	B													
HCM2k95thQ:	6	52	98	254	41	41	30	198	198	125	227	232													

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #22 Morada Ln & SR99 W Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																									
Lanes:	2	0	1	0	1	2	0	0	1	0	1	0	2	1	0	1	0	2	0	1					
Lane Group:	L		T		R	L		RT		RT	L		RT		RT	L		T		R					
#LnsInGrps:	2		1		1	2		1		1	1		3		3	1		2		1					
HCM Ops Input Saturation Adj Module:																									
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12					
CrsswalkWid:	8					8					8					8									
% Hev Veh:	2					2					2					2									
Grade:	0%					0%					0%					0%									
Parking/Hr:	No					No					No					No									
Bus Stp/Hr:	0					0					0					0									
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																								
Cnft Ped/Hr:	0					0					0					0									
ExclusiveRT:	Include					Include					Include					Include									
% RT Prtct:	0					0					0					0									
HCM Ops f(lt) Adj Case Module:																									
f(lt) Case:	1	xxxx		xxxx		1	xxxx		xxxx		1	xxxx		xxxx		1	xxxx		xxxx						
HCM Ops Saturation Adj Module:																									
Ln Wid Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00						
Hev Veh Adj:	0.98	0.98		0.98		0.98	0.98		0.98		0.98	0.98		0.98		0.98	0.98		0.98						
Grade Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00						
Parking Adj:	xxxx	xxxx		1.00		xxxx	1.00		1.00		xxxx	1.00		1.00		xxxx	xxxx		1.00						
Bus Stp Adj:	xxxx	xxxx		1.00		xxxx	1.00		1.00		xxxx	1.00		1.00		xxxx	xxxx		1.00						
Area Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00						
RT Adj:	xxxx	xxxx		0.85		xxxx	0.96		0.96		xxxx	1.00		1.00		xxxx	xxxx		0.85						
LT Adj:	0.95	xxxx		xxxxx		0.95	xxxx		xxxxx		0.95	xxxx		xxxxx		0.95	xxxx		xxxxx						
PedBike Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00						
HCM Sat Adj:	0.93	0.98		0.83		0.93	0.94		0.94		0.93	0.98		0.98		0.93	0.98		0.83						
Usr Sat Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00						
MLF Sat Adj:	0.97	1.00		1.00		0.97	1.00		1.00		1.00	0.91		0.91		1.00	0.95		1.00						
Fnl Sat Adj:	0.90	0.98		0.83		0.90	0.94		0.94		0.93	0.89		0.89		0.93	0.93		0.83						
Delay Adjustment Factor Module:																									
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																								
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																								
DelAdjFctr:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00						

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #22 Morada Ln & SR99 W Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.01	0.08	0.08	0.32	0.38	0.38	0.03	0.32	0.32	0.16	0.46	0.46
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.98	0.98	0.89	0.80	0.80	0.99	0.88	0.88	0.95	0.77	0.78
Q1:	0.0	0.7	1.3	4.5	0.7	0.7	0.5	3.8	3.8	2.3	4.3	4.3
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.53	0.23	0.23	0.23
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.84	0.84	0.98	0.98	0.98
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.10	0.45	0.45	0.34	0.66	0.59
Q2:	0.1	0.3	0.7	0.7	0.1	0.1	0.1	0.2	0.2	0.2	0.4	0.4
HCM2KQueue:	0.1	1.0	1.9	5.2	0.8	0.8	0.6	4.0	4.0	2.5	4.6	4.7
70th%Factor:	1.20	1.20	1.20	1.19	1.20	1.20	1.20	1.19	1.19	1.19	1.19	1.19
HCM2k70thQ:	0.1	1.2	2.3	6.2	1.0	1.0	0.7	4.8	4.8	3.0	5.5	5.6
85th%Factor:	1.60	1.59	1.58	1.55	1.59	1.59	1.59	1.56	1.56	1.58	1.56	1.56
HCM2k85thQ:	0.2	1.6	3.0	8.1	1.3	1.3	0.9	6.3	6.3	3.9	7.2	7.4
90th%Factor:	1.80	1.78	1.76	1.71	1.78	1.78	1.79	1.73	1.73	1.75	1.72	1.72
HCM2k90thQ:	0.2	1.8	3.4	8.9	1.4	1.4	1.0	6.9	6.9	4.3	7.9	8.1
95th%Factor:	2.10	2.07	2.04	1.95	2.07	2.07	2.08	1.98	1.98	2.02	1.96	1.96
HCM2k95thQ:	0.3	2.1	3.9	10.1	1.7	1.7	1.2	7.9	7.9	5.0	9.1	9.3
98th%Factor:	2.69	2.63	2.56	2.37	2.64	2.64	2.66	2.43	2.43	2.53	2.40	2.40
HCM2k98thQ:	0.3	2.7	4.9	12.3	2.1	2.1	1.5	9.8	9.8	6.2	11.1	11.3

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 West Ln & West Ln Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.770
Loss Time (sec):	12	Average Delay (sec/veh):	24.8
Optimal Cycle:	71	Level Of Service:	C

Street Name:	West Lane						West Lane Frontage Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3	1 0	1 0	3	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:	AM Peak Hour											
Base Vol:	222	1147	53	17	1875	29	40	32	208	77	21	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	222	1147	53	17	1875	29	40	32	208	77	21	6
Added Vol:	0	91	0	0	167	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	222	1238	53	17	2042	29	40	32	208	77	21	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	241	1346	58	18	2220	32	43	35	226	84	23	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	241	1346	58	18	2220	32	43	35	226	84	23	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	241	1346	58	18	2220	32	43	35	226	84	23	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.89	0.89	0.93	0.85	0.85	0.93	0.95	0.95
Lanes:	1.00	3.84	0.16	1.00	3.94	0.06	1.00	0.13	0.87	1.00	0.78	0.22
Final Sat.:	1769	6460	277	1769	6669	95	1769	216	1404	1769	1400	400
Capacity Analysis Module:												
Vol/Sat:	0.14	0.21	0.21	0.01	0.33	0.33	0.02	0.16	0.16	0.05	0.02	0.02
Crit Moves:	****				****			****		****		
Green/Cycle:	0.18	0.58	0.58	0.03	0.43	0.43	0.16	0.21	0.21	0.06	0.11	0.11
Volume/Cap:	0.77	0.36	0.36	0.36	0.77	0.77	0.15	0.77	0.77	0.77	0.15	0.15
Delay/Veh:	50.3	11.2	11.2	51.9	25.5	25.5	36.2	47.6	47.6	74.1	40.8	40.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.3	11.2	11.2	51.9	25.5	25.5	36.2	47.6	47.6	74.1	40.8	40.8
LOS by Move:	D	B	B	D	C	C	D	D	D	E	D	D
HCM2k95thQ:	344	186	186	52	701	701	60	432	432	212	46	46

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	3	1 0	1	0	3	1 0	1	0	0	1 0	1	0	0	1 0
Lane Group:	L		RT	RT	L		RT	RT	L		RT	RT	L		RT	RT
#LnsInGrps:	1		4	4	1		4	4	1		1	1	1		1	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.99	0.99		xxxx	1.00	1.00		xxxx	0.87	0.87		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.97	0.97		0.93	0.98	0.98		0.93	0.85	0.85		0.93	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	0.91		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.89		0.93	0.89	0.89		0.93	0.85	0.85		0.93	0.95	0.95	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.18	0.58	0.58		0.03	0.43	0.43		0.16	0.21	0.21		0.06	0.11	0.11	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.59	0.59		0.99	0.90	0.90		0.94	0.97	0.97		0.99	0.97	0.97	
Q1:	6.3	3.4	3.4		0.5	13.1	13.1		1.0	6.7	6.7		2.3	0.7	0.7	
UpstreamVC:	0.45	0.45	0.45		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.89	0.89	0.89		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	0.33	0.68	0.68		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	1.0	0.4	0.4		0.5	3.0	3.0		0.2	2.6	2.6		2.0	0.2	0.2	
HCM2KQueue:	7.2	3.7	3.7		1.0	16.1	16.1		1.2	9.3	9.3		4.3	0.9	0.9	
70th%Factor:	1.18	1.19	1.19		1.20	1.17	1.17		1.20	1.18	1.18		1.19	1.20	1.20	
HCM2k70thQ:	8.6	4.5	4.5		1.2	18.7	18.7		1.4	11.0	11.0		5.1	1.1	1.1	
85th%Factor:	1.54	1.56	1.56		1.59	1.48	1.48		1.59	1.52	1.52		1.56	1.59	1.59	
HCM2k85thQ:	11.1	5.9	5.9		1.6	23.7	23.7		1.8	14.1	14.1		6.7	1.4	1.4	
90th%Factor:	1.68	1.73	1.73		1.78	1.58	1.58		1.78	1.65	1.65		1.72	1.78	1.78	
HCM2k90thQ:	12.2	6.5	6.5		1.8	25.4	25.4		2.1	15.3	15.3		7.4	1.6	1.6	
95th%Factor:	1.90	1.99	1.99		2.07	1.75	1.75		2.06	1.86	1.86		1.97	2.07	2.07	
HCM2k95thQ:	13.8	7.4	7.4		2.1	28.0	28.0		2.4	17.3	17.3		8.5	1.8	1.8	
98th%Factor:	2.27	2.45	2.45		2.63	1.99	1.99		2.62	2.19	2.19		2.42	2.63	2.63	
HCM2k98thQ:	16.5	9.2	9.2		2.6	32.0	32.0		3.0	20.3	20.3		10.4	2.3	2.3	

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 West Lane & Knickerbocker Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.739
Loss Time (sec):	12	Average Delay (sec/veh):	23.9
Optimal Cycle:	65	Level Of Service:	C

Street Name:	West Lane						Knickerbocker Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3	1 0	1 0	3	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:	AM Peak Hour											
Base Vol:	125	1262	34	94	2066	144	170	80	102	71	86	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	125	1262	34	94	2066	144	170	80	102	71	86	50
Added Vol:	0	91	0	0	167	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	125	1353	34	94	2233	144	170	80	102	71	86	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	136	1471	37	102	2427	157	185	87	111	77	93	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	136	1471	37	102	2427	157	185	87	111	77	93	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	136	1471	37	102	2427	157	185	87	111	77	93	54
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.88	0.88	0.93	0.90	0.90	0.93	0.93	0.93
Lanes:	1.00	3.90	0.10	1.00	3.76	0.24	1.00	0.44	0.56	1.00	0.63	0.37
Final Sat.:	1769	6585	165	1769	6310	407	1769	750	956	1769	1113	647
Capacity Analysis Module:												
Vol/Sat:	0.08	0.22	0.22	0.06	0.38	0.38	0.10	0.12	0.12	0.04	0.08	0.08
Crit Moves:	****				****		****				****	
Green/Cycle:	0.10	0.50	0.50	0.13	0.52	0.52	0.14	0.19	0.19	0.07	0.11	0.11
Volume/Cap:	0.74	0.45	0.45	0.45	0.74	0.74	0.74	0.63	0.63	0.63	0.74	0.74
Delay/Veh:	58.1	16.4	16.4	41.7	19.5	19.5	52.2	41.4	41.4	54.9	56.4	56.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	58.1	16.4	16.4	41.7	19.5	19.5	52.2	41.4	41.4	54.9	56.4	56.4
LOS by Move:	E	B	B	D	B	B	D	D	D	D	E	E
HCM2k95thQ:	202	286	286	135	600	600	336	308	308	171	292	292

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Lanes:	1 0	3	1	0	1 0	3	1	0	1 0	0	1	0	1 0	0	1	0
Lane Group:	L	RT		RT	L	RT		RT	L	RT		RT	L	RT		RT
#LnsInGrps:	1	4		4	1	4		4	1	1		1	1	1		1
HCM Ops Adjusted Lane Utilization Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	1.00	1.00		xxxx	0.99	0.99		xxxx	0.92	0.92		xxxx	0.95	0.95	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.98		0.93	0.97	0.97		0.93	0.90	0.90		0.93	0.93	0.93	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	0.91		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.89		0.93	0.88	0.88		0.93	0.90	0.90		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.10	0.50	0.50	0.13	0.52	0.52	0.14	0.19	0.19	0.07	0.11	0.11
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.74	0.74	0.97	0.81	0.81	0.98	0.97	0.97	0.99	0.99	0.99
Q1:	3.6	5.5	5.5	2.5	12.4	12.4	4.8	4.9	4.9	2.1	3.9	3.9
UpstreamVC:	0.69	0.69	0.69	0.77	0.77	0.77	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.67	0.67	0.67	0.55	0.55	0.55	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.18	0.47	0.47	0.17	0.39	0.39	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.5	0.4	0.4	0.1	1.1	1.1	2.2	1.5	1.5	1.4	2.1	2.1
HCM2KQueue:	4.1	5.9	5.9	2.7	13.4	13.4	7.1	6.4	6.4	3.4	6.1	6.1
70th%Factor:	1.19	1.19	1.19	1.19	1.17	1.17	1.18	1.19	1.19	1.19	1.19	1.19
HCM2k70thQ:	4.9	7.0	7.0	3.2	15.8	15.8	8.4	7.6	7.6	4.1	7.2	7.2
85th%Factor:	1.56	1.55	1.55	1.57	1.49	1.49	1.54	1.54	1.54	1.57	1.55	1.55
HCM2k85thQ:	6.4	9.2	9.2	4.2	20.1	20.1	10.9	9.9	9.9	5.4	9.4	9.4
90th%Factor:	1.73	1.70	1.70	1.75	1.60	1.60	1.68	1.69	1.69	1.74	1.70	1.70
HCM2k90thQ:	7.1	10.1	10.1	4.7	21.6	21.6	11.9	10.8	10.8	5.9	10.3	10.3
95th%Factor:	1.98	1.93	1.93	2.02	1.78	1.78	1.91	1.92	1.92	2.00	1.93	1.93
HCM2k95thQ:	8.1	11.4	11.4	5.4	24.0	24.0	13.5	12.3	12.3	6.8	11.7	11.7
98th%Factor:	2.43	2.33	2.33	2.51	2.06	2.06	2.28	2.31	2.31	2.47	2.33	2.33
HCM2k98thQ:	9.9	13.8	13.8	6.7	27.6	27.6	16.1	14.8	14.8	8.4	14.1	14.1

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.793
Loss Time (sec):	12	Average Delay (sec/veh):	34.6
Optimal Cycle:	75	Level Of Service:	C

Street Name:	West Lane						Hammer Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	4	0	1	2	0	4	0	1
Volume Module:	AM Peak Hour											
Base Vol:	119	912	271	672	1419	124	155	797	97	540	817	364
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	119	912	271	672	1419	124	155	797	97	540	817	364
Added Vol:	0	91	0	0	167	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	119	1003	271	672	1586	124	155	797	97	540	817	364
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	129	1090	295	730	1724	135	168	866	105	587	888	396
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	129	1090	295	730	1724	135	168	866	105	587	888	396
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	129	1090	295	730	1724	135	168	866	105	587	888	396
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.04	0.16	0.19	0.21	0.25	0.09	0.05	0.13	0.07	0.17	0.13	0.25
Crit Moves:			****	****				****		****		
Green/Cycle:	0.06	0.23	0.23	0.27	0.44	0.44	0.06	0.16	0.16	0.22	0.32	0.32
Volume/Cap:	0.58	0.69	0.79	0.79	0.58	0.19	0.79	0.79	0.41	0.79	0.42	0.79
Delay/Veh:	49.3	36.2	47.1	38.8	21.5	17.4	64.6	44.4	38.8	43.0	27.1	39.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.3	36.2	47.1	38.8	21.5	17.4	64.6	44.4	38.8	43.0	27.1	39.8
LOS by Move:	D	D	D	D	C	B	E	D	D	D	C	D
HCM2k95thQ:	148	429	478	476	411	94	223	422	160	401	243	482

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	4	0	2	0	4	0	2	0	4	0	2	0	4	0
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	4	1		2	4	1		2	4	1		2	4	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No >															
Signal Type:	< < < < < < < < < < < < Actuated >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.06	0.23	0.23		0.27	0.44	0.44		0.06	0.16	0.16		0.22	0.32	0.32	
ArrivalType:	4				4				4				4			
ProgFactor:	0.99	0.96	0.97		0.96	0.84	0.76		1.00	0.98	0.96		0.98	0.89	0.95	
Q1:	1.8	7.3	7.5		9.4	8.3	1.8		2.4	6.3	2.5		7.8	4.8	9.6	
UpstreamVC:	0.00	0.00	0.00		0.74	0.74	0.74		0.00	0.00	0.00		0.77	0.77	0.77	
UpstreamAdj:	0.00	0.00	0.00		0.60	0.60	0.60		0.00	0.00	0.00		0.55	0.55	0.55	
EarlyArrAdj:	1.00	1.00	1.00		0.28	0.39	0.35		1.00	1.00	1.00		0.23	0.29	0.27	
Q2:	1.2	2.0	2.9		1.0	0.5	0.1		2.2	2.8	0.7		0.8	0.2	1.0	
HCM2KQueue:	2.9	9.2	10.4		10.4	8.8	1.8		4.5	9.1	3.2		8.6	5.0	10.5	
70th%Factor:	1.19	1.18	1.18		1.18	1.18	1.20		1.19	1.18	1.19		1.18	1.19	1.18	
HCM2k70thQ:	3.5	10.9	12.3		12.2	10.4	2.2		5.4	10.7	3.8		10.1	5.9	12.4	
85th%Factor:	1.57	1.52	1.51		1.51	1.52	1.58		1.56	1.52	1.57		1.53	1.55	1.51	
HCM2k85thQ:	4.6	14.0	15.7		15.7	13.4	2.9		7.1	13.8	5.0		13.1	7.7	15.9	
90th%Factor:	1.75	1.65	1.64		1.64	1.66	1.76		1.72	1.65	1.74		1.66	1.71	1.64	
HCM2k90thQ:	5.1	15.3	17.1		17.0	14.6	3.2		7.8	15.0	5.6		14.2	8.5	17.2	
95th%Factor:	2.01	1.86	1.84		1.84	1.87	2.04		1.97	1.86	2.00		1.87	1.96	1.83	
HCM2k95thQ:	5.9	17.2	19.1		19.1	16.5	3.8		8.9	16.9	6.4		16.0	9.7	19.3	
98th%Factor:	2.50	2.19	2.15		2.15	2.21	2.57		2.41	2.20	2.48		2.22	2.38	2.15	
HCM2k98thQ:	7.3	20.2	22.4		22.3	19.4	4.7		10.9	19.9	7.9		19.0	11.8	22.6	

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.768
Loss Time (sec):	12	Average Delay (sec/veh):	33.6
Optimal Cycle:	70	Level Of Service:	C

Street Name:	Hammer Lane						Holman Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	1	0	2	0	3	0	1	2	0
Volume Module:AM Peak Hour												
Base Vol:	321	308	83	186	634	307	328	1518	299	182	1519	84
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	321	308	83	186	634	307	328	1518	299	182	1519	84
Added Vol:	0	7	0	0	13	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	321	315	83	186	647	307	328	1518	299	182	1519	84
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	349	342	90	202	703	334	357	1650	325	198	1651	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	349	342	90	202	703	334	357	1650	325	198	1651	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	349	342	90	202	703	334	357	1650	325	198	1651	91
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.86	0.86	0.90	0.89	0.83	0.90	0.87	0.87	0.90	0.88	0.88
Lanes:	2.00	2.37	0.63	2.00	3.00	1.00	2.00	3.34	0.66	2.00	3.79	0.21
Final Sat.:	3432	3898	1027	3432	5083	1583	3432	5521	1087	3432	6371	352
Capacity Analysis Module:												
Vol/Sat:	0.10	0.09	0.09	0.06	0.14	0.21	0.10	0.30	0.30	0.06	0.26	0.26
Crit Moves:	****					****	****				****	
Green/Cycle:	0.13	0.24	0.24	0.16	0.27	0.27	0.14	0.40	0.40	0.08	0.34	0.34
Volume/Cap:	0.77	0.36	0.36	0.36	0.50	0.77	0.77	0.75	0.75	0.75	0.77	0.77
Delay/Veh:	49.6	31.5	31.5	37.6	30.8	41.4	49.3	27.3	27.3	56.9	31.3	31.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.6	31.5	31.5	37.6	30.8	41.4	49.3	27.3	27.3	56.9	31.3	31.3
LOS by Move:	D	C	C	D	C	D	D	C	C	E	C	C
HCM2k95thQ:	342	194	194	132	288	432	260	571	571	235	623	623

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	2	0	2	1	0		2	0	3	0	1		2	0	3	1	0		2	0	3	1	0	
Lane Group:	L		RT				L		T		R		L		RT				L		RT			
#LnsInGrps:	2		3		3		2		3		1		2		4		4		2		4		4	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:			8						8						8						8			
% Hev Veh:			2						2						2						2			
Grade:			0%						0%						0%						0%			
Parking/Hr:			No						No						No						No			
Bus Stp/Hr:			0						0						0						0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0						0						0						0			
ExclusiveRT:			Include						Include						Include						Include			
% RT Prtct:			0						0						0						0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx		
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
Hev Veh Adj:	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98
Grade Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
Parking Adj:	xxxx	1.00		1.00		xxxx	xxxx	1.00		xxxx		1.00	xxxx	1.00		1.00		xxxx	1.00	1.00		xxxx		1.00
Bus Stp Adj:	xxxx	1.00		1.00		xxxx	xxxx	1.00		xxxx		1.00	xxxx	1.00		1.00		xxxx	1.00	1.00		xxxx		1.00
Area Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
RT Adj:	xxxx	0.97		0.97		xxxx	xxxx	0.85		xxxx		0.98	0.98	xxxx		0.99		0.99						
LT Adj:	0.95	xxxx		xxxxx		0.95	xxxx	xxxxx		0.95		xxxx	xxxxx			0.95		xxxx	xxxxx					
PedBike Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
HCM Sat Adj:	0.93	0.95		0.95		0.93	0.98	0.83		0.93		0.96	0.96	0.93		0.97		0.97						
Usr Sat Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00						
MLF Sat Adj:	0.97	0.91		0.91		0.97	0.91	1.00		0.97		0.91	0.91	0.97		0.91		0.91						
Fnl Sat Adj:	0.90	0.86		0.86		0.90	0.89	0.83		0.90		0.87	0.87	0.90		0.88		0.88						
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00						

Cumul + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.13	0.24	0.24	0.16	0.27	0.27	0.14	0.40	0.40	0.08	0.34	0.34
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.92	0.92	0.95	0.92	0.96	0.99	0.91	0.91	0.99	0.94	0.94
Q1:	4.8	3.4	3.4	2.5	5.6	8.2	4.9	11.8	11.8	2.8	11.2	11.2
UpstreamVC:	0.00	0.00	0.00	0.53	0.53	0.53	0.79	0.79	0.79	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.84	0.84	0.84	0.51	0.51	0.51	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	0.29	0.41	0.37	0.16	0.31	0.31	1.00	1.00	1.00
Q2:	2.4	0.6	0.6	0.2	0.4	1.1	0.5	0.9	0.9	2.1	2.9	2.9
HCM2KQueue:	7.2	3.9	3.9	2.6	6.0	9.3	5.3	12.7	12.7	4.8	14.0	14.0
70th%Factor:	1.18	1.19	1.19	1.19	1.19	1.18	1.19	1.17	1.17	1.19	1.17	1.17
HCM2k70thQ:	8.5	4.7	4.7	3.1	7.1	11.0	6.4	14.9	14.9	5.7	16.4	16.4
85th%Factor:	1.54	1.56	1.56	1.57	1.55	1.52	1.55	1.50	1.50	1.56	1.49	1.49
HCM2k85thQ:	11.0	6.1	6.1	4.1	9.2	14.1	8.3	19.0	19.0	7.5	20.9	20.9
90th%Factor:	1.68	1.73	1.73	1.75	1.70	1.65	1.71	1.61	1.61	1.71	1.60	1.60
HCM2k90thQ:	12.1	6.8	6.8	4.6	10.1	15.4	9.1	20.5	20.5	8.2	22.4	22.4
95th%Factor:	1.90	1.98	1.98	2.02	1.93	1.86	1.95	1.80	1.80	1.96	1.78	1.78
HCM2k95thQ:	13.7	7.8	7.8	5.3	11.5	17.3	10.4	22.8	22.8	9.4	24.9	24.9
98th%Factor:	2.28	2.44	2.44	2.52	2.33	2.19	2.36	2.08	2.08	2.39	2.04	2.04
HCM2k98thQ:	16.4	9.6	9.6	6.6	13.9	20.4	12.6	26.4	26.4	11.5	28.6	28.6

Cumul + Reduce Proj Alt AM Pk Hr

Future Queue Length Report (feet)

Node	Intersection	Northbound L	T	R	Southbound L	T	R	Eastbound L	T	R	Westbound L	T	R
#3	[HCM2k95thQ]:	228	399	235	698	395	250	212	467	110	200	629	629
#4	[HCM2k95thQ]:	363	236	253	314	427	181	124	448	206	304	464	464
#5	[HCM2k95thQ]:	137	310	545	553	379	104	182	695	115	544	613	613
#6	[HCM2k95thQ]:	73	426	682	1254	259	21	118	635	38	1090	254	426
#7	[HCM2k95thQ]:	119	119	119	160	160	160	76	160	160	101	124	124
#8	[HCM2k95thQ]:	493	189	116	119	587	814	519	843	948	228	676	676
#9	[HCM2k95thQ]:	0	0	0	486	0	84	196	306	0	0	478	235
#10	[HCM2k95thQ]:	119	0	121	0	0	6	0	36	36	56	32	32
#11	[HCM2k95thQ]:	380	53	29	49	154	445	244	310	594	58	378	13
#12	[HCM2k95thQ]:	2	198	198	456	7	7	9	491	1	118	511	511
#13	[HCM2k95thQ]:	29	13	13	18	22	22	9	10	1	23	11	11
#17	[HCM2k95thQ]:	49	151	282	620	165	31	78	580	28	561	730	730
#18	[HCM2k95thQ]:	400	258	148	122	632	116	104	211	560	310	183	73
#19	[HCM2k95thQ]:	225	172	119	171	296	115	181	290	210	250	225	75
#22	[HCM2k95thQ]:	6	52	98	254	41	41	30	198	198	125	227	232
#24	[HCM2k95thQ]:	344	186	186	52	701	701	60	432	432	212	46	46
#25	[HCM2k95thQ]:	202	286	286	135	600	600	336	308	308	171	292	292
#26	[HCM2k95thQ]:	148	429	478	476	411	94	223	422	160	401	243	482
#27	[HCM2k95thQ]:	342	194	194	132	288	432	260	571	571	235	623	623

Cumul + Reduce Proj Alt AM Pk Hr Mitigated

Scenario Report

Scenario:	Cumul + Red Proj Alt AM
Command:	Cumul + Red Proj Alt AM
Volume:	Cumul Proj AM
Geometry:	Cumul Proj
Impact Fee:	Default Impact Fee
Trip Generation:	AM Pk Hr
Trip Distribution:	Cumul No Bridge AM
Paths:	Cumul Proj
Routes:	Default Route
Configuration:	Default Configuration

Cumul + Reduce Proj Alt AM Pk Hr Mitigated

Trip Generation Report

Forecast for AM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	725.00	ElemSchStudent	0.25	0.20	181	145	326	32.9
1	Village West	0.00	Tra Vigne SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	0.60	0.36	0	0	0	0.0
1	Village West	613.00	Red Proj SFDU	0.18	0.53	110	325	435	43.9
1	Village West	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt MFDU	0.10	0.41	0	0	0	0.0
1	Village West	0.00	Tra V Internal	-6.00	-6.00	0	0	0	0.0
1	Village West	0.00	GP Alt Interna	-7.00	-7.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-11.00	-7.00	0	0	0	0.0
	Zone 1 Subtotal					291	470	761	76.7
2	Village East	0.00	Tra Vigne SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
2	Village East	325.00	Red Proj SFDU	0.18	0.53	59	172	231	23.3
2	Village East	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
	Zone 2 Subtotal					59	172	231	23.3
TOTAL						350	642	992	100.0

Cumul + Reduce Proj Alt AM Pk Hr Mitigated

Trip Distribution Report

Percent Of Trips Cumul No Bridge AM

Zone	To Gates 1	2	3	4	5	6	7	8	9	10	11
1	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	1.0
2	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	1.0

Zone	To Gates 14	15	16	18	19	20	21	22	23	24	25
1	1.0	2.0	5.0	2.0	26.0	9.0	1.0	2.0	12.0	4.0	2.0
2	1.0	2.0	5.0	2.0	26.0	9.0	1.0	2.0	12.0	4.0	2.0

Zone	To Gates 26
1	2.0
2	2.0

Cumul + Reduce Proj Alt AM Pk Hr Mitigated

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 5 Eight Mile & Lower Sacto Rd	D	35.1	0.842	D	36.5	0.877	+ 1.400 D/V
# 8 Eight Mile Rd & West Ln	D	38.0	0.861	D	40.7	0.899	+ 2.783 D/V

Cumul + Reduce Proj Alt AM Pk Hr Mitigated

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]

Cumul + Reduce Proj Alt AM Pk Hr Mitigated

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.877
Loss Time (sec):	12	Average Delay (sec/veh):	36.5
Optimal Cycle:	100	Level Of Service:	D

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	4 0	1	2 0	4 0	1
Volume Module:	AM Peak Hour											
Base Vol:	115	394	261	543	611	101	125	1432	93	504	1440	286
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	115	394	261	543	611	101	125	1432	93	504	1440	286
Added Vol:	0	0	18	7	0	0	0	39	0	32	71	13
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	115	394	279	550	611	101	125	1471	93	536	1511	299
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	125	428	303	598	664	110	136	1599	101	583	1642	325
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	125	428	303	598	664	110	136	1599	101	583	1642	325
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	125	428	303	598	664	110	136	1599	101	583	1642	325
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.04	0.12	0.19	0.17	0.19	0.07	0.04	0.24	0.06	0.17	0.24	0.21
Crit Moves:			****	****				****		****		
Green/Cycle:	0.07	0.22	0.22	0.20	0.35	0.35	0.06	0.27	0.27	0.19	0.40	0.40
Volume/Cap:	0.54	0.55	0.88	0.88	0.54	0.20	0.61	0.88	0.24	0.88	0.61	0.52
Delay/Veh:	47.6	35.6	59.2	51.2	26.5	22.9	50.3	40.1	28.8	51.8	24.3	23.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.6	35.6	59.2	51.2	26.5	22.9	50.3	40.1	28.8	51.8	24.3	23.6
LOS by Move:	D	D	E	D	C	C	D	D	C	D	C	C
HCM2k95thQ:	137	310	545	553	379	104	158	695	115	544	469	328

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt AM Pk Hr Mitigated

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0	2	0	2	0	2	0	4	0	2	0	4	0
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	2	1		2	2	1		2	4	1		2	4	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt AM Pk Hr Mitigated

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.07	0.22	0.22		0.20	0.35	0.35		0.06	0.27	0.27		0.19	0.40	0.40	
ArrivalType:	4				4				4				4			
ProgFactor:	0.99	0.95	0.98		0.99	0.89	0.84		0.99	0.98	0.90		0.99	0.87	0.85	
Q1:	1.7	5.3	8.0		8.2	6.9	1.8		1.9	11.4	2.0		8.0	8.7	5.8	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	1.0	1.2	4.0		4.1	1.1	0.2		1.3	4.5	0.3		4.0	1.5	1.0	
HCM2KQueue:	2.7	6.5	12.1		12.3	8.0	2.0		3.1	15.9	2.3		12.0	10.2	6.9	
70th%Factor:	1.19	1.19	1.17		1.17	1.18	1.20		1.19	1.17	1.19		1.17	1.18	1.18	
HCM2k70thQ:	3.3	7.7	14.2		14.4	9.5	2.4		3.8	18.6	2.7		14.1	12.0	8.1	
85th%Factor:	1.57	1.54	1.50		1.50	1.53	1.58		1.57	1.48	1.58		1.50	1.51	1.54	
HCM2k85thQ:	4.3	10.0	18.1		18.4	12.3	3.2		4.9	23.5	3.6		18.1	15.4	10.6	
90th%Factor:	1.75	1.69	1.62		1.62	1.67	1.76		1.74	1.58	1.76		1.62	1.64	1.68	
HCM2k90thQ:	4.8	10.9	19.5		19.8	13.4	3.6		5.5	25.1	4.0		19.5	16.7	11.6	
95th%Factor:	2.02	1.92	1.81		1.80	1.88	2.04		2.00	1.75	2.03		1.81	1.84	1.91	
HCM2k95thQ:	5.5	12.4	21.8		22.1	15.2	4.2		6.3	27.8	4.6		21.7	18.8	13.1	
98th%Factor:	2.51	2.31	2.10		2.09	2.24	2.55		2.48	1.99	2.54		2.10	2.16	2.29	
HCM2k98thQ:	6.8	14.9	25.3		25.6	18.0	5.2		7.8	31.7	5.8		25.2	22.0	15.7	

Cumul + Reduce Proj Alt AM Pk Hr Mitigated

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.899
Loss Time (sec):	12	Average Delay (sec/veh):	40.7
Optimal Cycle:	109	Level Of Service:	D

Street Name:	West Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	3	0	2	0	1	2	0	2	0	1	2	0	3	1	0	2	0	3	1	0
Volume Module:AM Peak Hour																				
Base Vol:	465	336	59	129	751	427	442	1345	455	137	1344	56
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	465	336	59	129	751	427	442	1345	455	137	1344	56
Added Vol:	50	12	56	11	7	0	0	34	29	71	66	20
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	515	348	115	140	758	427	442	1379	484	208	1410	76
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	560	378	125	152	824	464	480	1499	526	226	1533	83
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	560	378	125	152	824	464	480	1499	526	226	1533	83
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	560	378	125	152	824	464	480	1499	526	226	1533	83
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.86	0.86	0.90	0.88	0.88
Lanes:	3.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.80	0.20
Final Sat.:	5147	3538	1583	3432	3538	1583	3432	4885	1628	3432	6380	344
Capacity Analysis Module:												
Vol/Sat:	0.11	0.11	0.08	0.04	0.23	0.29	0.14	0.31	0.32	0.07	0.24	0.24
Crit Moves:	****					****			****	****		
Green/Cycle:	0.12	0.32	0.32	0.13	0.33	0.33	0.16	0.36	0.36	0.07	0.27	0.27
Volume/Cap:	0.90	0.34	0.25	0.34	0.71	0.90	0.88	0.85	0.90	0.90	0.88	0.88
Delay/Veh:	59.3	26.4	25.7	39.9	31.7	50.6	56.1	32.8	35.6	77.5	40.0	40.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	59.3	26.4	25.7	39.9	31.7	50.6	56.1	32.8	35.6	77.5	40.0	40.0
LOS by Move:	E	C	C	D	C	D	E	C	D	E	D	D
HCM2k95thQ:	326	198	122	122	548	736	481	764	851	211	622	622

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt AM Pk Hr Mitigated

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																				
Lanes:	3	0	2	0	1	2	0	2	0	1	2	0	3	1	0	2	0	3	1	0
Lane Group:	L		T		R	L		T		R	L		RT		RT	L		RT		RT
#LnsInGrps:	3		2		1	2		2		1	2		4		4	2		4		4
HCM Ops Input Saturation Adj Module:																				
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12
CrsswalkWid:			8					8					8					8		
% Hev Veh:			2					2					2					2		
Grade:			0%					0%					0%					0%		
Parking/Hr:			No					No					No					No		
Bus Stp/Hr:			0					0					0					0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >																			
Cnft Ped/Hr:			0					0					0					0		
ExclusiveRT:			Include					Include					Include					Include		
% RT Prtct:			0					0					0					0		
HCM Ops f(lt) Adj Case Module:																				
f(lt) Case:	1		xxxx		xxxx	1		xxxx		xxxx	1		xxxx		xxxx	1		xxxx		xxxx
HCM Ops Saturation Adj Module:																				
Ln Wid Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Hev Veh Adj:	0.98		0.98		0.98	0.98		0.98		0.98	0.98		0.98		0.98	0.98		0.98		0.98
Grade Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Parking Adj:	xxxx		xxxx		1.00	xxxx		xxxx		1.00	xxxx		1.00		1.00	xxxx		1.00		1.00
Bus Stp Adj:	xxxx		xxxx		1.00	xxxx		xxxx		1.00	xxxx		1.00		1.00	xxxx		1.00		1.00
Area Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
RT Adj:	xxxx		xxxx		0.85	xxxx		xxxx		0.85	xxxx		0.96		0.96	xxxx		0.99		0.99
LT Adj:	0.95		xxxx		xxxxx	0.95		xxxx		xxxxx	0.95		xxxx		xxxxx	0.95		xxxx		xxxxx
PedBike Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
HCM Sat Adj:	0.93		0.98		0.83	0.93		0.98		0.83	0.93		0.94		0.94	0.93		0.97		0.97
Usr Sat Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
MLF Sat Adj:	0.97		0.95		1.00	0.97		0.95		1.00	0.97		0.91		0.91	0.97		0.91		0.91
Fnl Sat Adj:	0.90		0.93		0.83	0.90		0.93		0.83	0.90		0.86		0.86	0.90		0.88		0.88
Delay Adjustment Factor Module:																				
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >																			
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >																			
DelAdjFctr:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00

Cumul + Reduce Proj Alt AM Pk Hr Mitigated

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.12	0.32	0.32	0.13	0.33	0.33	0.16	0.36	0.36	0.07	0.27	0.27
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.88	0.87	0.96	0.93	0.97	0.99	0.95	0.97	1.00	0.98	0.98
Q1:	5.2	3.7	2.2	1.9	9.9	12.0	6.7	13.4	14.7	3.2	11.5	11.5
UpstreamVC:	0.31	0.31	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.37	0.37
UpstreamAdj:	0.96	0.96	0.96	0.00	0.00	0.00	0.00	0.00	0.00	0.94	0.94	0.94
EarlyArrAdj:	0.28	0.51	0.47	1.00	1.00	1.00	1.00	1.00	1.00	0.20	0.46	0.46
Q2:	1.6	0.3	0.2	0.5	2.3	5.0	3.8	4.3	5.4	1.1	2.5	2.5
HCM2KQueue:	6.8	4.0	2.4	2.4	12.1	17.0	10.5	17.7	20.0	4.3	14.0	14.0
70th%Factor:	1.18	1.19	1.19	1.19	1.17	1.17	1.18	1.16	1.16	1.19	1.17	1.17
HCM2k70thQ:	8.1	4.8	2.9	2.9	14.2	19.8	12.3	20.6	23.3	5.1	16.4	16.4
85th%Factor:	1.54	1.56	1.58	1.58	1.50	1.47	1.51	1.47	1.45	1.56	1.49	1.49
HCM2k85thQ:	10.5	6.2	3.8	3.8	18.2	25.0	15.8	26.0	29.1	6.7	20.9	20.9
90th%Factor:	1.68	1.73	1.75	1.75	1.62	1.57	1.64	1.56	1.55	1.72	1.60	1.60
HCM2k90thQ:	11.5	6.9	4.2	4.2	19.6	26.7	17.2	27.7	31.0	7.4	22.4	22.4
95th%Factor:	1.91	1.98	2.03	2.02	1.81	1.73	1.84	1.72	1.70	1.97	1.78	1.78
HCM2k95thQ:	13.0	7.9	4.9	4.9	21.9	29.4	19.2	30.6	34.0	8.5	24.9	24.9
98th%Factor:	2.29	2.44	2.53	2.53	2.09	1.97	2.15	1.96	1.91	2.42	2.04	2.04
HCM2k98thQ:	15.6	9.7	6.1	6.1	25.4	33.5	22.5	34.7	38.4	10.4	28.6	28.6

Cumul + Reduce Proj Alt AM Pk Hr Mitigated

Future Queue Length Report (feet)

Node	Intersection	Northbound L	-- T	-- R	Southbound L	-- T	-- R	Eastbound L	-- T	-- R	Westbound L	-- T	-- R
#5	[HCM2k95thQ]:	137	310	545	553	379	104	158	695	115	544	469	328
#8	[HCM2k95thQ]:	326	198	122	122	548	736	481	764	851	211	622	622

Cumul + Reduce Proj Alt PM Pk Hr

Scenario Report

Scenario:	Cumul + Red Proj Alt PM
Command:	Cumul + Red Proj Alt PM
Volume:	Cumul Proj PM
Geometry:	Cumul Proj
Impact Fee:	Default Impact Fee
Trip Generation:	PM Pk Hr
Trip Distribution:	Cumul No Bridge PM
Paths:	Cumul Proj
Routes:	Default Route
Configuration:	Default Configuration

Cumul + Reduce Proj Alt PM Pk Hr

Trip Generation Report

Forecast for PM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	725.00	ElemSchStudent	0.07	0.08	51	58	109	12.2
1	Village West	0.00	Tra Vigne SFDU	0.51	0.30	0	0	0	0.0
1	Village West	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	2.63	2.85	0	0	0	0.0
1	Village West	613.00	Red Proj SFDU	0.53	0.31	325	190	515	57.4
1	Village West	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
1	Village West	0.00	GP Alt MFDU	0.41	0.22	0	0	0	0.0
1	Village West	0.00	Tra V Internal	-64.00	-64.00	0	0	0	0.0
1	Village West	0.00	GP Alt Interna	-76.00	-76.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-106.00	-111.00	0	0	0	0
	Zone 1 Subtotal					376	248	624	69.6
2	Village East	0.00	Tra Vigne SFDU	0.51	0.30	0	0	0	0.0
2	Village East	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
2	Village East	325.00	Red Proj SFDU	0.53	0.31	172	101	273	30.4
2	Village East	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
	Zone 2 Subtotal					172	101	273	30.4
TOTAL						548	349	897	100.0

Cumul + Reduce Proj Alt PM Pk Hr

Trip Distribution Report

Percent Of Trips Cumul No Bridge PM

To Gates

Zone	1	2	3	4	5	6	7	8	9	10	11
1	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	2.0
2	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	2.0

To Gates

Zone	14	15	16	17	18	19	20	21	22	23
1	1.0	2.0	5.0	1.0	2.0	29.0	10.0	1.0	2.0	14.0
2	1.0	2.0	5.0	1.0	2.0	29.0	10.0	1.0	2.0	14.0

Cumul + Reduce Proj Alt PM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	F	89.7	1.189	F	93.0	1.202	+ 3.255 D/V
# 4 Eight Mile Rd & Davis Rd	D	38.5	0.830	D	39.0	0.840	+ 0.495 D/V
# 5 Eight Mile & Lower Sacto Rd	F	83.4	1.128	F	94.3	1.170	+10.858 D/V
# 6 West Lane & Armstrong Road	F	148.6	1.408	F	149.1	1.408	+ 0.532 D/V
# 7 West Lane & Ham Lane	B	12.4	0.502	B	13.1	0.512	+ 0.650 D/V
# 8 Eight Mile Rd & West Ln	F	94.1	1.224	F	104.6	1.243	+10.520 D/V
# 9 Eight Mile Road & Ham Lane	C	23.2	0.753	C	23.9	0.797	+ 0.657 D/V
# 10 Eight Mile & Leach Rd/St J	A	1.1	0.432	A	5.3	0.482	+ 4.130 D/V
# 11 Eight Mile & MickeGrove/Holman	C	34.2	0.817	D	37.7	0.882	+ 3.542 D/V
# 12 Eight Mile & SR 99 W Frontage	C	30.6	0.867	C	31.1	0.887	+ 0.548 D/V
# 13 Eight Mile & SR 99 E Frontage	A	4.0	0.231	A	4.0	0.234	-0.034 D/V
# 17 Holman & Lt Col Mark Taylor	F	92.2	1.159	F	92.0	1.159	-0.185 D/V
# 18 Morada Lane & West Lane	D	35.5	0.856	D	36.4	0.874	+ 0.872 D/V
# 19 Morada Lane & Holman Road	D	35.1	0.623	D	35.2	0.631	+ 0.081 D/V
# 22 Morada Ln & SR99 W Frontage Rd	C	24.6	0.654	C	24.5	0.654	-0.097 D/V
# 24 West Ln & West Ln Frontage Rd	C	28.6	0.839	C	28.9	0.858	+ 0.303 D/V
# 25 West Lane & Knickerbocker Dr	C	33.5	0.858	C	34.1	0.887	+ 0.663 D/V
# 26 West Lane & Hammer Lane	F	81.1	1.214	F	88.8	1.224	+ 7.691 D/V
# 27 Hammer Lane & Holman Road	D	51.5	1.029	D	51.4	1.029	-0.014 D/V

Cumul + Reduce Proj Alt PM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.202
Loss Time (sec):	12	Average Delay (sec/veh):	93.0
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	PM Peak Hour											
Base Vol:	202	742	201	513	541	218	393	1835	112	273	1898	404
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	202	742	201	513	541	218	393	1835	112	273	1898	404
Added Vol:	0	0	5	11	0	0	0	27	0	3	17	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	202	742	206	524	541	218	393	1862	112	276	1915	411
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	220	807	224	570	588	237	427	2024	122	300	2082	447
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	220	807	224	570	588	237	427	2024	122	300	2082	447
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	220	807	224	570	588	237	427	2024	122	300	2082	447
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	3.29	0.71
Final Sat.:	1769	3538	1583	1769	3538	1583	3432	6778	1583	3432	5429	1165
Capacity Analysis Module:												
Vol/Sat:	0.12	0.23	0.14	0.32	0.17	0.15	0.12	0.30	0.08	0.09	0.38	0.38
Crit Moves:		****		****			****				****	
Green/Cycle:	0.20	0.19	0.19	0.27	0.26	0.26	0.10	0.33	0.33	0.10	0.32	0.32
Volume/Cap:	0.63	1.20	0.75	1.20	0.63	0.57	1.20	0.91	0.24	0.91	1.20	1.20
Delay/Veh:	40.8	145	48.0	146.3	34.1	34.0	159.6	38.7	24.8	73.6	130	129.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.8	145	48.0	146.3	34.1	34.0	159.6	38.7	24.8	73.6	130	129.8
LOS by Move:	D	F	D	F	C	C	F	D	C	E	F	F
HCM2k95thQ:	333	1024	380	1286	411	317	499	664	109	248	1395	1395

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 2	0 1		1	0 2	0 1		2	0 4	0 1		2	0 3	1 0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	2	1		1	2	1		2	4	1		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.90	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.20	0.19	0.19		0.27	0.26	0.26		0.10	0.33	0.33		0.10	0.32	0.32	
ArrivalType:		4				4				4				4		
ProgFactor:	0.96	1.00	0.98		1.00	0.94	0.94		1.00	0.98	0.86		1.00	1.00	1.00	
Q1:		5.4	11.8	5.7	15.8	7.2	5.4	6.1	14.5	2.1	4.2	19.3	19.3			
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.99	0.99	0.99		0.82	0.82	0.82	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.12	0.12	0.12		0.46	0.46	0.46	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.03	0.06	0.06		0.12	0.24	0.24	
Q2:		1.6	13.0	2.4	16.3	1.6	1.3	4.8	0.6	0.0	0.8	15.9	15.9			
HCM2KQueue:		7.0	24.8	8.1	32.1	8.8	6.6	10.9	15.1	2.1	5.1	35.2	35.2			
70th%Factor:	1.18	1.15	1.18		1.14	1.18	1.18		1.18	1.17	1.19		1.19	1.14	1.14	
HCM2k70thQ:		8.3	28.6	9.6	36.8	10.4	7.8	12.8	17.6	2.6	6.0	40.2	40.2			
85th%Factor:	1.54	1.43	1.53		1.40	1.52	1.54		1.51	1.48	1.58		1.55	1.39	1.39	
HCM2k85thQ:		10.7	35.5	12.4	45.1	13.4	10.2	16.5	22.4	3.4	7.9	49.0	49.0			
90th%Factor:	1.68	1.52	1.67		1.48	1.66	1.69		1.63	1.59	1.76		1.71	1.47	1.47	
HCM2k90thQ:		11.7	37.6	13.5	47.6	14.6	11.2	17.8	24.0	3.8	8.7	51.7	51.7			
95th%Factor:	1.91	1.65	1.88		1.60	1.87	1.92		1.83	1.76	2.03		1.95	1.58	1.58	
HCM2k95thQ:		13.3	40.9	15.2	51.5	16.5	12.7	20.0	26.6	4.4	9.9	55.8	55.8			
98th%Factor:	2.28	1.85	2.24		1.78	2.21	2.30		2.13	2.01	2.55		2.38	1.77	1.77	
HCM2k98thQ:		15.9	45.8	18.1	57.4	19.4	15.2	23.3	30.4	5.5	12.1	62.2	62.2			

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.840
Loss Time (sec):	12	Average Delay (sec/veh):	39.0
Optimal Cycle:	88	Level Of Service:	D

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	PM Peak Hour											
Base Vol:	338	610	255	238	461	133	237	1712	192	336	1681	176
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	338	610	255	238	461	133	237	1712	192	336	1681	176
Added Vol:	0	0	11	5	0	0	0	44	0	7	28	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	338	610	266	243	461	133	237	1756	192	343	1709	179
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	367	663	289	264	501	145	258	1909	209	373	1858	195
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	367	663	289	264	501	145	258	1909	209	373	1858	195
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	367	663	289	264	501	145	258	1909	209	373	1858	195
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.88	0.88
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	3.62	0.38
Final Sat.:	1769	3538	1583	1769	3538	1583	3432	6778	1583	3432	6049	634
Capacity Analysis Module:												
Vol/Sat:	0.21	0.19	0.18	0.15	0.14	0.09	0.08	0.28	0.13	0.11	0.31	0.31
Crit Moves:	****				****			****		****		
Green/Cycle:	0.25	0.23	0.23	0.18	0.17	0.17	0.09	0.34	0.34	0.13	0.37	0.37
Volume/Cap:	0.84	0.81	0.79	0.81	0.84	0.54	0.82	0.84	0.39	0.84	0.82	0.82
Delay/Veh:	49.4	42.5	47.1	53.2	50.6	40.3	60.6	33.8	25.9	55.9	30.7	30.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.4	42.5	47.1	53.2	50.6	40.3	60.6	33.8	25.9	55.9	30.7	30.7
LOS by Move:	D	D	D	D	D	D	E	C	C	E	C	C
HCM2k95thQ:	589	550	471	460	478	228	193	609	197	389	739	739

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Lane Group:	L	T	R	L	T	R	L	T	R	L	RT	RT
#LnsInGrps:	1	2	1	1	2	1	2	4	1	2	4	4
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	0.99	0.99
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.97	0.97
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	0.91
Fnl Sat Adj:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.88	0.88
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.25	0.23	0.23	0.18	0.17	0.17	0.09	0.34	0.34	0.13	0.37	0.37
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.97	0.97	0.98	0.99	0.96	0.99	0.96	0.88	0.99	0.94	0.94
Q1:	9.5	8.9	7.3	6.9	7.0	3.5	3.6	12.9	3.9	5.2	13.3	13.3
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.91	0.91	0.91	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.29	0.29	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.07	0.16	0.14	1.00	1.00	1.00
Q2:	3.7	3.2	2.9	3.1	3.4	1.1	0.3	0.8	0.1	3.1	3.7	3.7
HCM2KQueue:	13.2	12.2	10.2	10.0	10.4	4.6	3.9	13.7	4.0	8.3	17.1	17.1
70th%Factor:	1.17	1.17	1.18	1.18	1.18	1.19	1.19	1.17	1.19	1.18	1.17	1.17
HCM2k70thQ:	15.4	14.3	12.0	11.7	12.3	5.5	4.6	16.0	4.7	9.8	19.9	19.9
85th%Factor:	1.49	1.50	1.51	1.52	1.51	1.56	1.56	1.49	1.56	1.53	1.47	1.47
HCM2k85thQ:	19.7	18.3	15.5	15.1	15.7	7.2	6.1	20.4	6.2	12.7	25.1	25.1
90th%Factor:	1.61	1.62	1.64	1.64	1.64	1.72	1.73	1.60	1.73	1.66	1.57	1.57
HCM2k90thQ:	21.2	19.7	16.8	16.4	17.1	8.0	6.7	21.9	6.9	13.8	26.8	26.8
95th%Factor:	1.79	1.81	1.84	1.84	1.84	1.96	1.98	1.78	1.98	1.88	1.73	1.73
HCM2k95thQ:	23.5	22.0	18.8	18.4	19.1	9.1	7.7	24.4	7.9	15.6	29.6	29.6
98th%Factor:	2.06	2.09	2.16	2.16	2.15	2.40	2.44	2.05	2.44	2.23	1.97	1.97
HCM2k98thQ:	27.2	25.5	22.0	21.6	22.4	11.2	9.5	28.0	9.7	18.5	33.6	33.6

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.170
Loss Time (sec):	12	Average Delay (sec/veh):	94.3
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	4 0	1	2 0	3 1	0
Volume Module:	PM Peak Hour											
Base Vol:	183	817	455	610	526	103	199	1916	96	567	1922	498
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	183	817	455	610	526	103	199	1916	96	567	1922	498
Added Vol:	0	0	27	11	0	0	0	60	0	17	38	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	183	817	482	621	526	103	199	1976	96	584	1960	505
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	199	888	524	675	572	112	216	2148	104	635	2130	549
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	199	888	524	675	572	112	216	2148	104	635	2130	549
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	199	888	524	675	572	112	216	2148	104	635	2130	549
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.86	0.86
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	4.00	1.00	2.00	3.18	0.82
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	6778	1583	3432	5222	1345
Capacity Analysis Module:												
Vol/Sat:	0.06	0.25	0.33	0.20	0.16	0.07	0.06	0.32	0.07	0.18	0.41	0.41
Crit Moves:			****	****				****		****		
Green/Cycle:	0.12	0.28	0.28	0.17	0.33	0.33	0.06	0.27	0.27	0.16	0.37	0.37
Volume/Cap:	0.49	0.89	1.17	1.17	0.49	0.21	1.10	1.17	0.24	1.17	1.10	1.10
Delay/Veh:	42.1	44.1	133.9	135.6	26.9	24.2	139.9	119	28.8	137.0	82.6	82.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.1	44.1	133.9	135.6	26.9	24.2	139.9	119	28.8	137.0	82.6	82.6
LOS by Move:	D	D	F	F	C	C	F	F	C	F	F	F
HCM2k95thQ:	174	734	1164	854	328	111	356	1277	119	816	1387	1387

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0 1	2	0	2	0 1	2	0	4	0 1	2	0	3	1 0
Lane Group:	L		T	R	L		T	R	L		T	R	L		RT	RT
#LnsInGrps:	2		2	1	2		2	1	2		4	1	2		4	4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.86	0.86	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.12	0.28	0.28		0.17	0.33	0.33		0.06	0.27	0.27		0.16	0.37	0.37	
ArrivalType:		4				4				4				4		
ProgFactor:	0.97	0.98	1.00		1.00	0.89	0.86		1.00	1.00	0.90		1.00	1.00	1.00	
Q1:		2.6	12.2	14.6		9.7	5.9	1.9		3.1	16.4	2.0		9.1	20.4	20.4
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:		0.9	4.8	14.1		10.5	0.9	0.3		4.4	15.5	0.3		10.0	14.5	14.5
HCM2KQueue:		3.5	16.9	28.7		20.1	6.9	2.2		7.5	31.9	2.3		19.1	35.0	35.0
70th%Factor:	1.19	1.17	1.15		1.16	1.18	1.19		1.18	1.15	1.19		1.16	1.14	1.14	
HCM2k70thQ:		4.2	19.7	33.0		23.4	8.1	2.6		8.9	36.5	2.8		22.2	39.9	39.9
85th%Factor:	1.57	1.47	1.42		1.45	1.54	1.58		1.53	1.40	1.58		1.46	1.39	1.39	
HCM2k85thQ:		5.5	24.9	40.6		29.3	10.6	3.4		11.5	44.7	3.7		27.9	48.8	48.8
90th%Factor:	1.74	1.57	1.50		1.55	1.68	1.76		1.67	1.48	1.76		1.55	1.47	1.47	
HCM2k90thQ:		6.1	26.6	42.9		31.1	11.6	3.8		12.6	47.2	4.1		29.7	51.4	51.4
95th%Factor:	1.99	1.73	1.62		1.70	1.91	2.03		1.90	1.60	2.03		1.71	1.59	1.59	
HCM2k95thQ:		7.0	29.4	46.5		34.2	13.1	4.4		14.2	51.1	4.8		32.6	55.5	55.5
98th%Factor:	2.46	1.97	1.81		1.91	2.29	2.55		2.26	1.79	2.53		1.93	1.77	1.77	
HCM2k98thQ:		8.6	33.4	51.9		38.5	15.7	5.6		17.0	56.9	6.0		36.9	61.9	61.9

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec):	100	Critical Vol./Cap.(X):	1.408
Loss Time (sec):	12	Average Delay (sec/veh):	149.1
Optimal Cycle:	180	Level Of Service:	F

Street Name:	West Lane						Armstrong Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:	PM Peak Hour											
Base Vol:	46	759	451	665	451	29	58	599	24	548	603	574
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	46	759	451	665	451	29	58	599	24	548	603	574
Added Vol:	0	24	0	0	38	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	46	783	451	665	489	29	58	599	24	548	603	574
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	50	851	490	723	532	32	63	651	26	596	655	624
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	851	490	723	532	32	63	651	26	596	655	624
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	851	490	723	532	32	63	651	26	596	655	624
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.24	0.31	0.41	0.15	0.02	0.04	0.18	0.02	0.34	0.19	0.39
Crit Moves:			****	****				****		****		
Green/Cycle:	0.08	0.22	0.22	0.29	0.43	0.43	0.03	0.13	0.13	0.24	0.34	0.34
Volume/Cap:	0.35	1.09	1.41	1.41	0.35	0.05	1.16	1.41	0.13	1.41	0.55	1.16
Delay/Veh:	45.0	99.9	239.0	230.5	19.3	16.6	221.7	240	38.7	235.4	27.3	125.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.0	99.9	239.0	230.5	19.3	16.6	221.7	240	38.7	235.4	27.3	125.1
LOS by Move:	D	F	F	F	B	B	F	F	D	F	C	F
HCM2k95thQ:	92	948	1364	1898	230	23	252	1022	39	1606	383	1322

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	2 0	1		1 0	2 0	1		1 0	2 0	1		1 0	2 0	1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	2	1		1	2	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.08	0.22	0.22	0.29	0.43	0.43	0.03	0.13	0.13	0.24	0.34	0.34
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	1.00	1.00	1.00	0.80	0.75	1.00	1.00	0.96	1.00	0.90	1.00
Q1:	1.3	12.4	13.6	20.1	4.2	0.4	1.8	9.5	0.6	16.5	7.0	17.3
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.5	10.3	20.7	29.3	0.5	0.0	3.4	15.2	0.1	24.6	1.2	15.8
HCM2KQueue:	1.8	22.7	34.3	49.4	4.7	0.4	5.2	24.7	0.8	41.2	8.1	33.1
70th%Factor:	1.20	1.16	1.14	1.13	1.19	1.20	1.19	1.15	1.20	1.14	1.18	1.14
HCM2k70thQ:	2.2	26.3	39.2	55.7	5.6	0.5	6.1	28.6	0.9	46.7	9.6	37.9
85th%Factor:	1.58	1.44	1.40	1.36	1.56	1.60	1.55	1.43	1.59	1.38	1.53	1.40
HCM2k85thQ:	2.9	32.7	47.9	67.0	7.3	0.7	8.0	35.4	1.2	56.6	12.4	46.4
90th%Factor:	1.77	1.53	1.47	1.43	1.72	1.79	1.71	1.52	1.79	1.45	1.67	1.48
HCM2k90thQ:	3.2	34.7	50.5	70.8	8.0	0.8	8.8	37.5	1.3	59.7	13.6	48.9
95th%Factor:	2.04	1.67	1.59	1.54	1.96	2.09	1.95	1.65	2.08	1.56	1.88	1.60
HCM2k95thQ:	3.7	37.9	54.6	75.9	9.2	0.9	10.1	40.9	1.6	64.2	15.3	52.9
98th%Factor:	2.57	1.87	1.77	1.72	2.40	2.67	2.37	1.85	2.64	1.74	2.23	1.78
HCM2k98thQ:	4.6	42.5	60.8	85.0	11.2	1.2	12.2	45.8	2.0	71.7	18.2	58.9

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.512
Loss Time (sec):	9	Average Delay (sec/veh):	13.1
Optimal Cycle:	35	Level Of Service:	B

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Volume Module:	PM Peak Hour											
Base Vol:	53	31	35	47	22	30	54	1054	29	46	1054	36
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	31	35	47	22	30	54	1054	29	46	1054	36
Added Vol:	0	0	7	0	0	0	0	17	0	11	27	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	53	31	42	47	22	30	54	1071	29	57	1081	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	58	34	46	51	24	33	59	1164	32	62	1175	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	58	34	46	51	24	33	59	1164	32	62	1175	39
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	58	34	46	51	24	33	59	1164	32	62	1175	39
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.79	0.79	0.76	0.76	0.76	0.93	0.93	0.93	0.93	0.93	0.93
Lanes:	0.42	0.25	0.33	0.48	0.22	0.30	1.00	1.95	0.05	1.00	1.94	0.06
Final Sat.:	631	369	500	683	320	436	1769	3431	93	1769	3407	113
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.07	0.07	0.07	0.03	0.34	0.34	0.04	0.34	0.34
Crit Moves:		****						****		****		
Green/Cycle:	0.18	0.18	0.18	0.18	0.18	0.18	0.06	0.66	0.66	0.07	0.67	0.67
Volume/Cap:	0.51	0.51	0.51	0.42	0.42	0.42	0.52	0.51	0.51	0.51	0.52	0.52
Delay/Veh:	38.8	38.8	38.8	37.6	37.6	37.6	49.4	8.8	8.8	48.6	8.6	8.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.8	38.8	38.8	37.6	37.6	37.6	49.4	8.8	8.8	48.6	8.6	8.6
LOS by Move:	D	D	D	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	212	212	212	161	161	161	126	232	232	130	230	230

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	0	0	1!	0	0	0	0	1!	0	0	1	0	1	1	0	1
Lane Group:	LTR	LTR	LTR		LTR	LTR	LTR		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	2	2		1	2	2	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	5	5	5		5	5	5		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	1.00	1.00	1.00		1.00	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	1.00	1.00	1.00		1.00	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	0.96	0.96	0.96		0.96	0.96	0.96		xxxx	1.00	1.00		xxxx	1.00	1.00	
LT Adj:	0.84	0.84	0.84		0.81	0.81	0.81		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.79	0.79	0.79		0.76	0.76	0.76		0.93	0.98	0.98		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	0.95		1.00	0.95	0.95	
Fnl Sat Adj:	0.79	0.79	0.79		0.76	0.76	0.76		0.93	0.93	0.93		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	100	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	16.84	16.84	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	17.84	17.84	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	17.84	17.84	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	1	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	1	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	58	51	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	0.42	0.48	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	0.48	0.42	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	1.60	1.42	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	108	137	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	3.00	3.81	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	1.33	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	3.00	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	2.30	2.77	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	0.76	0.76	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	5.56	7.26	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	12.28	10.58	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	1.63	2.25	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	0.53	0.58	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	1.56	1.61	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	1.37	1.68	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	0.16	0.17	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	0.84	0.81	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	0.84	0.81	xxxxxx	xxxxxx

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.18	0.18	0.18	0.18	0.18	0.18	0.06	0.66	0.66	0.07	0.67	0.67
ArrivalType:		4			4			4			4	
ProgFactor:	0.96	0.96	0.96	0.95	0.95	0.95	0.99	0.42	0.42	0.99	0.40	0.40
Q1:	3.3	3.3	3.3	2.5	2.5	2.5	1.6	3.7	3.7	1.6	3.6	3.6
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	1.0	1.0	1.0	0.7	0.7	0.7	0.9	1.0	1.0	0.9	1.1	1.1
HCM2KQueue:	4.3	4.3	4.3	3.2	3.2	3.2	2.5	4.7	4.7	2.6	4.7	4.7
70th%Factor:	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19
HCM2k70thQ:	5.1	5.1	5.1	3.8	3.8	3.8	3.0	5.6	5.6	3.1	5.6	5.6
85th%Factor:	1.56	1.56	1.56	1.57	1.57	1.57	1.58	1.56	1.56	1.58	1.56	1.56
HCM2k85thQ:	6.7	6.7	6.7	5.1	5.1	5.1	3.9	7.4	7.4	4.1	7.3	7.3
90th%Factor:	1.72	1.72	1.72	1.74	1.74	1.74	1.75	1.72	1.72	1.75	1.72	1.72
HCM2k90thQ:	7.4	7.4	7.4	5.6	5.6	5.6	4.4	8.1	8.1	4.5	8.0	8.0
95th%Factor:	1.97	1.97	1.97	2.00	2.00	2.00	2.02	1.96	1.96	2.02	1.96	1.96
HCM2k95thQ:	8.5	8.5	8.5	6.5	6.5	6.5	5.1	9.3	9.3	5.2	9.2	9.2
98th%Factor:	2.42	2.42	2.42	2.48	2.48	2.48	2.53	2.39	2.39	2.52	2.40	2.40
HCM2k98thQ:	10.4	10.4	10.4	8.0	8.0	8.0	6.3	11.3	11.3	6.5	11.2	11.2

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 1.243
Loss Time (sec): 12 Average Delay (sec/veh): 104.6
Optimal Cycle: 180 Level Of Service: F

Street Name:	West Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	3 1	0	2 0	3 1	0
Volume Module:	PM Peak Hour											
Base Vol:	757	748	108	150	687	445	718	1787	474	159	1781	102
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	757	748	108	150	687	445	718	1787	474	159	1781	102
Added Vol:	27	7	67	17	10	0	0	57	42	57	36	11
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	784	755	175	167	697	445	718	1844	516	216	1817	113
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	852	821	190	182	758	484	780	2004	561	235	1975	123
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	852	821	190	182	758	484	780	2004	561	235	1975	123
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	852	821	190	182	758	484	780	2004	561	235	1975	123
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.86	0.86	0.90	0.88	0.88
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.13	0.87	2.00	3.77	0.23
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	5121	1433	3432	6323	393
Capacity Analysis Module:												
Vol/Sat:	0.25	0.23	0.12	0.05	0.21	0.31	0.23	0.39	0.39	0.07	0.31	0.31
Crit Moves:	****					****	****				****	
Green/Cycle:	0.20	0.36	0.36	0.08	0.25	0.25	0.18	0.37	0.37	0.06	0.25	0.25
Volume/Cap:	1.24	0.64	0.33	0.64	0.87	1.24	1.24	1.06	1.06	1.06	1.24	1.24
Delay/Veh:	161.4	27.5	23.4	49.2	45.7	167.0	163.2	67.7	67.7	123.6	152	151.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	161.4	27.5	23.4	49.2	45.7	167.0	163.2	67.7	67.7	123.6	152	151.9
LOS by Move:	F	C	C	D	D	F	F	E	E	F	F	F
HCM2k95thQ:	1013	455	174	195	648	1178	1021	1271	1271	267	1281	1281

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	3	1	0	2
Lane Group:	L	T	R		L	T	R		L	RT	RT		L	RT	RT	
#LnsInGrps:	2	2	1		2	2	1		2	4	4		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.97	0.97		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.95	0.95		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.86	0.86		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.20	0.36	0.36		0.08	0.25	0.25		0.18	0.37	0.37		0.06	0.25	0.25	
ArrivalType:	4				4				4				4			
ProgFactor:	1.00	0.90	0.85		0.99	0.98	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q1:	12.2	9.0	3.2		2.5	10.4	13.4		11.2	19.6	19.6		3.4	16.0	16.0	
UpstreamVC:	0.44	0.44	0.44		0.00	0.00	0.00		0.00	0.00	0.00		0.41	0.41	0.41	
UpstreamAdj:	0.90	0.90	0.90		0.00	0.00	0.00		0.00	0.00	0.00		0.92	0.92	0.92	
EarlyArrAdj:	0.35	0.52	0.47		1.00	1.00	1.00		1.00	1.00	1.00		0.18	0.42	0.42	
Q2:	12.3	0.9	0.2		1.5	4.3	15.7		13.5	12.1	12.1		2.1	16.0	16.0	
HCM2KQueue:	24.5	9.9	3.5		3.9	14.7	29.1		24.7	31.7	31.7		5.5	32.0	32.0	
70th%Factor:	1.15	1.18	1.19		1.19	1.17	1.15		1.15	1.15	1.15		1.19	1.14	1.14	
HCM2k70thQ:	28.3	11.6	4.1		4.7	17.2	33.4		28.5	36.3	36.3		6.5	36.6	36.6	
85th%Factor:	1.43	1.52	1.57		1.56	1.48	1.41		1.43	1.40	1.40		1.55	1.40	1.40	
HCM2k85thQ:	35.1	15.0	5.5		6.2	21.8	41.1		35.4	44.5	44.5		8.5	44.9	44.9	
90th%Factor:	1.52	1.64	1.74		1.73	1.59	1.49		1.52	1.48	1.48		1.70	1.48	1.48	
HCM2k90thQ:	37.2	16.2	6.0		6.8	23.4	43.5		37.5	47.0	47.0		9.4	47.4	47.4	
95th%Factor:	1.65	1.85	1.99		1.98	1.77	1.62		1.65	1.60	1.60		1.94	1.60	1.60	
HCM2k95thQ:	40.5	18.2	6.9		7.8	25.9	47.1		40.8	50.8	50.8		10.7	51.2	51.2	
98th%Factor:	1.85	2.17	2.47		2.44	2.02	1.81		1.85	1.79	1.79		2.36	1.79	1.79	
HCM2k98thQ:	45.4	21.4	8.6		9.6	29.7	52.6		45.7	56.7	56.7		13.0	57.1	57.1	

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.797
Loss Time (sec): 9 | Average Delay (sec/veh): 23.9
Optimal Cycle: 68 | Level Of Service: C

Street Name:	Ham Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	0	0	1	0	0	0	1	1	0
	4	0	0	0	0	1						
Volume Module:	PM Peak Hour											
Base Vol:	0	0	0	438	0	69	161	1929	0	0	1976	445
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	438	0	69	161	1929	0	0	1976	445
Added Vol:	0	0	0	12	0	26	17	125	0	0	140	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	450	0	95	178	2054	0	0	2116	452
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	489	0	103	193	2233	0	0	2300	491
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	489	0	103	193	2233	0	0	2300	491
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	489	0	103	193	2233	0	0	2300	491
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.93	1.00	0.83	0.93	0.89	1.00	1.00	0.89	0.83
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	4.00	0.00	0.00	4.00	1.00
Final Sat.:	0	0	0	1769	0	1583	1769	6778	0	0	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.28	0.00	0.07	0.11	0.33	0.00	0.00	0.34	0.31
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.35	0.00	0.35	0.14	0.56	0.00	0.00	0.43	0.43
Volume/Cap:	0.00	0.00	0.00	0.80	0.00	0.19	0.80	0.59	0.00	0.00	0.80	0.73
Delay/Veh:	0.0	0.0	0.0	36.7	0.0	23.0	58.4	14.5	0.0	0.0	26.6	27.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	36.7	0.0	23.0	58.4	14.5	0.0	0.0	26.6	27.9
LOS by Move:	A	A	A	D	A	C	E	B	A	A	C	C
HCM2k95thQ:	0	0	0	653	0	98	292	397	0	0	693	516

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	0	0	0	0 0	1	0	0	0 1	1	0	4	0 0	0	0	4	0 1
Lane Group:	xxxx	xxxx	xxxx		L	xxxx		R	L		T	xxxx	xxxx		T	R
#LnsInGrps:	0	0	0		1	0		1	1		4	0	0		4	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	xxxx	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		xxxx	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx		xxxx	1.00	1.00			
Hev Veh Adj:	xxxx	xxxx	xxxxx	0.98	xxxx	0.98	0.98	0.98	xxxxx		xxxx	0.98	0.98			
Grade Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx		xxxx	1.00	1.00			
Parking Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	1.00	xxxxx		xxxx	xxxx	1.00			
Bus Stp Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	1.00	xxxxx		xxxx	xxxx	1.00			
Area Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx		xxxx	1.00	1.00			
RT Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.85	xxxx	xxxx	xxxxx		xxxx	xxxx	0.85			
LT Adj:	xxxx	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx		xxxx	xxxx	xxxxx			
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00			
HCM Sat Adj:	1.00	1.00	1.00	0.93	1.00	0.83	0.93	0.98	1.00		1.00	0.98	0.83			
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00			
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00		1.00	0.91	1.00			
Fnl Sat Adj:	1.00	1.00	1.00	0.93	1.00	0.83	0.93	0.89	1.00		1.00	0.89	0.83			
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00		0.00	1.00	1.00			

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.00	0.00	0.00	0.35	0.00	0.35	0.14	0.56	0.00	0.00	0.43	0.43
ArrivalType:	4				4				4				4			
ProgFactor:	1.00	1.00	1.00	0.94	1.00	0.84	0.99	0.68	1.00	1.00	0.91	0.89
Q1:	0.0	0.0	0.0	11.6	0.0	1.7	5.1	7.6	0.0	0.0	13.9	10.1
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.00	0.00	0.48	0.48
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.85	0.00	0.00	0.87	0.87
EarlyArrAdj:	0.00	0.00	0.00	1.00	0.00	1.00	0.27	0.64	0.00	0.00	0.56	0.51
Q2:	0.0	0.0	0.0	3.2	0.0	0.2	0.9	0.9	0.0	0.0	2.0	1.3
HCM2KQueue:	0.0	0.0	0.0	14.8	0.0	1.9	6.1	8.5	0.0	0.0	15.8	11.4
70th%Factor:	1.20	1.20	1.20	1.17	1.20	1.20	1.19	1.18	1.20	1.20	1.17	1.18
HCM2k70thQ:	0.0	0.0	0.0	17.3	0.0	2.3	7.2	10.0	0.0	0.0	18.5	13.3
85th%Factor:	1.60	1.60	1.60	1.48	1.60	1.58	1.55	1.53	1.60	1.60	1.48	1.51
HCM2k85thQ:	0.0	0.0	0.0	22.0	0.0	3.0	9.4	12.9	0.0	0.0	23.4	17.1
90th%Factor:	1.80	1.80	1.80	1.59	1.80	1.76	1.70	1.66	1.80	1.80	1.58	1.63
HCM2k90thQ:	0.0	0.0	0.0	23.6	0.0	3.4	10.3	14.1	0.0	0.0	25.1	18.5
95th%Factor:	2.10	2.10	2.10	1.76	2.10	2.04	1.93	1.87	2.10	2.10	1.75	1.82
HCM2k95thQ:	0.0	0.0	0.0	26.1	0.0	3.9	11.7	15.9	0.0	0.0	27.7	20.7
98th%Factor:	2.70	2.70	2.70	2.02	2.70	2.56	2.33	2.22	2.70	2.70	2.00	2.12
HCM2k98thQ:	0.0	0.0	0.0	29.9	0.0	4.9	14.1	18.8	0.0	0.0	31.6	24.0

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St J

Cycle (sec): 100 Critical Vol./Cap.(X): 0.482
Loss Time (sec): 12 Average Delay (sec/veh): 5.3
Optimal Cycle: 40 Level Of Service: A

Street Name:	Leach Road/Street J								Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	1	0 1	1	0	0	1 0	1	0	3	1 0	1	0	3	1 0
Volume Module:	PM Peak Hour															
Base Vol:	0	0	0		0	0	4		0	1894	0		0	2364	4	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		0	0	4		0	1894	0		0	2364	4	
Added Vol:	39	0	39		0	0	0		0	72	66		66	109	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	39	0	39		0	0	4		0	1966	66		66	2473	4	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	42	0	42		0	0	4		0	2137	72		72	2688	4	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	42	0	42		0	0	4		0	2137	72		72	2688	4	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	42	0	42		0	0	4		0	2137	72		72	2688	4	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	1.00	0.83		1.00	1.00	0.83		1.00	0.89	0.89		0.93	0.89	0.89	
Lanes:	1.00	1.00	1.00		1.00	0.00	1.00		1.00	3.87	0.13		1.00	3.99	0.01	
Final Sat.:	1769	1900	1583		1900	0	1583		1900	6525	219		1769	6767	11	
Capacity Analysis Module:																
Vol/Sat:	0.02	0.00	0.03		0.00	0.00	0.00		0.00	0.33	0.33		0.04	0.40	0.40	
Crit Moves:			****		****				****					****		
Green/Cycle:	0.05	0.00	0.06		0.00	0.00	0.01		0.00	0.73	0.73		0.09	0.82	0.82	
Volume/Cap:	0.48	0.00	0.48		0.00	0.00	0.48		0.00	0.45	0.45		0.45	0.48	0.48	
Delay/Veh:	50.3	0.0	49.9		0.0	0.0	84.8		0.0	5.3	5.3		45.0	2.6	2.6	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	50.3	0.0	49.9		0.0	0.0	84.8		0.0	5.3	5.3		45.0	2.6	2.6	
LOS by Move:	D	A	D		A	A	F		A	A	A		D	A	A	
HCM2k95thQ:	99	0	99		0	0	32		0	63	63		132	48	48	

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	1	0	1	0	0	1	0	1	0	3	1	0	1	0
Lane Group:	L	T	R		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	4	4		1	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx			1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00	1.00	1.00		1.00			
Hev Veh Adj:	0.98	xxxx	0.98	xxxx	xxxx	0.98	xxxx	0.98	0.98	0.98	0.98		0.98			
Grade Adj:	1.00	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00	1.00	1.00		1.00			
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00		1.00			
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00		1.00			
Area Adj:	1.00	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00	1.00	1.00		1.00			
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	1.00	1.00	xxxx	1.00		1.00			
LT Adj:	0.95	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.95	xxxx		xxxxx			
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00			
HCM Sat Adj:	0.93	1.00	0.83	1.00	1.00	0.83	1.00	0.98	0.98	0.93	0.98		0.98			
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00			
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91		0.91			
Fnl Sat Adj:	0.93	1.00	0.83	1.00	1.00	0.83	1.00	0.89	0.89	0.93	0.89		0.89			
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00		1.00			

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.05	0.00	0.06		0.00	0.00	0.01		0.00	0.73	0.73		0.09	0.82	0.82	
ArrivalType:	4				4				4				4			
ProgFactor:	0.99	1.00	0.99		1.00	1.00	1.00		1.00	0.10	0.10		0.98	0.00	0.00	
Q1:	1.1	0.0	1.1		0.0	0.0	0.1		0.0	0.7	0.7		1.9	0.0	0.0	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.59	0.59		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.78	0.78		0.00	0.00	0.00	
EarlyArrAdj:	1.00	0.00	1.00		0.00	0.00	1.00		0.00	0.69	0.69		1.00	1.00	1.00	
Q2:	0.8	0.0	0.8		0.0	0.0	0.5		0.0	0.6	0.6		0.8	0.9	0.9	
HCM2KQueue:	1.9	0.0	1.9		0.0	0.0	0.6		0.0	1.2	1.2		2.6	0.9	0.9	
70th%Factor:	1.20	1.20	1.20		1.20	1.20	1.20		1.20	1.20	1.20		1.19	1.20	1.20	
HCM2k70thQ:	2.3	0.0	2.3		0.0	0.0	0.7		0.0	1.5	1.5		3.1	1.1	1.1	
85th%Factor:	1.58	1.60	1.58		1.60	1.60	1.59		1.60	1.59	1.59		1.58	1.59	1.59	
HCM2k85thQ:	3.1	0.0	3.1		0.0	0.0	1.0		0.0	1.9	1.9		4.1	1.5	1.5	
90th%Factor:	1.76	1.80	1.76		1.80	1.80	1.79		1.80	1.78	1.78		1.75	1.78	1.78	
HCM2k90thQ:	3.4	0.0	3.4		0.0	0.0	1.1		0.0	2.2	2.2		4.6	1.6	1.6	
95th%Factor:	2.04	2.10	2.04		2.10	2.10	2.08		2.10	2.06	2.06		2.02	2.07	2.07	
HCM2k95thQ:	4.0	0.0	4.0		0.0	0.0	1.3		0.0	2.5	2.5		5.3	1.9	1.9	
98th%Factor:	2.56	2.70	2.56		2.70	2.70	2.65		2.70	2.61	2.61		2.52	2.63	2.63	
HCM2k98thQ:	5.0	0.0	5.0		0.0	0.0	1.6		0.0	3.2	3.2		6.6	2.4	2.4	

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Cycle (sec):	100	Critical Vol./Cap.(X):	0.882
Loss Time (sec):	12	Average Delay (sec/veh):	37.7
Optimal Cycle:	102	Level Of Service:	D

Street Name:	Micke Grove Road/Holman Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	4 0	1
Volume Module:	PM Peak Hour											
Base Vol:	602	190	43	42	200	246	384	1509	418	70	1483	27
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	602	190	43	42	200	246	384	1509	418	70	1483	27
Added Vol:	64	0	0	0	0	27	17	52	41	0	83	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	666	190	43	42	200	273	401	1561	459	70	1566	27
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	724	207	47	46	217	297	436	1697	499	76	1702	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	724	207	47	46	217	297	436	1697	499	76	1702	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	724	207	47	46	217	297	436	1697	499	76	1702	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	3538	1583	1769	3538	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.21	0.06	0.03	0.03	0.06	0.19	0.13	0.25	0.32	0.02	0.25	0.02
Crit Moves:	****					****	****				****	
Green/Cycle:	0.24	0.31	0.31	0.14	0.21	0.21	0.14	0.40	0.40	0.03	0.28	0.28
Volume/Cap:	0.88	0.19	0.09	0.19	0.29	0.88	0.88	0.63	0.79	0.79	0.88	0.07
Delay/Veh:	47.8	25.1	24.4	38.5	33.3	61.0	58.8	24.4	32.8	82.1	39.4	26.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.8	25.1	24.4	38.5	33.3	61.0	58.8	24.4	32.8	82.1	39.4	26.1
LOS by Move:	D	C	C	D	C	E	E	C	C	F	D	C
HCM2k95thQ:	630	109	46	67	145	542	454	488	632	63	592	28

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2 0	2 0	1	1 0	2 0	1	2 0	4 0	1	2 0	4 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	2	1	1	2	1	2	4	1	2	4	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Fnl Sat Adj:	0.90	0.93	0.83	0.93	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.24	0.31	0.31	0.14	0.21	0.21	0.14	0.40	0.40	0.03	0.28	0.28
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.87	0.86	0.95	0.93	0.99	0.99	0.87	0.92	1.00	0.98	0.87
Q1:	9.8	1.9	0.8	1.1	2.5	7.9	6.1	9.1	11.1	1.1	12.1	0.5
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.89	0.89	0.89
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.34	0.34
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.04	0.17	0.15
Q2:	4.4	0.2	0.1	0.2	0.4	4.1	3.7	1.6	3.1	0.1	1.1	0.0
HCM2KQueue:	14.2	2.1	0.9	1.3	2.9	12.0	9.8	10.7	14.3	1.2	13.2	0.5
70th%Factor:	1.17	1.19	1.20	1.20	1.19	1.17	1.18	1.18	1.17	1.20	1.17	1.20
HCM2k70thQ:	16.6	2.6	1.1	1.6	3.4	14.1	11.6	12.5	16.7	1.5	15.5	0.6
85th%Factor:	1.49	1.58	1.59	1.59	1.57	1.50	1.52	1.51	1.49	1.59	1.49	1.59
HCM2k85thQ:	21.1	3.4	1.4	2.1	4.5	18.0	14.9	16.1	21.2	1.9	19.8	0.8
90th%Factor:	1.60	1.76	1.78	1.77	1.75	1.62	1.64	1.63	1.60	1.78	1.61	1.79
HCM2k90thQ:	22.7	3.8	1.6	2.3	5.0	19.4	16.2	17.4	22.8	2.2	21.3	0.9
95th%Factor:	1.77	2.03	2.07	2.06	2.01	1.81	1.85	1.83	1.77	2.06	1.79	2.08
HCM2k95thQ:	25.2	4.3	1.8	2.7	5.8	21.7	18.1	19.5	25.3	2.5	23.7	1.1
98th%Factor:	2.03	2.55	2.63	2.60	2.50	2.10	2.17	2.14	2.03	2.61	2.06	2.66
HCM2k98thQ:	28.9	5.4	2.3	3.4	7.2	25.1	21.3	22.8	29.0	3.2	27.3	1.4

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Eight Mile & SR 99 W Frontage

Cycle (sec): 100 Critical Vol./Cap.(X): 0.887
Loss Time (sec): 12 Average Delay (sec/veh): 31.1
Optimal Cycle: 104 Level Of Service: C

Street Name:	SR 99 West Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1 0	1 0	0	1 0	1 0	3	0 1	2 0	2	1 0
Volume Module:PM Peak Hour												
Base Vol:	2	10	157	339	3	2	6	1622	1	132	1589	396
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	10	157	339	3	2	6	1622	1	132	1589	396
Added Vol:	0	0	0	0	0	0	0	52	0	0	83	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	2	10	157	339	3	2	6	1674	1	132	1672	396
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	2	11	171	368	3	2	7	1820	1	143	1817	430
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	11	171	368	3	2	7	1820	1	143	1817	430
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	2	11	171	368	3	2	7	1820	1	143	1817	430
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.84	0.84	0.93	0.92	0.92	0.93	0.89	0.83	0.90	0.87	0.87
Lanes:	1.00	0.06	0.94	1.00	0.60	0.40	1.00	3.00	1.00	2.00	2.43	0.57
Final Sat.:	1769	96	1504	1769	1050	700	1769	5083	1583	3432	3991	945
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.11	0.21	0.00	0.00	0.00	0.36	0.00	0.04	0.46	0.46
Crit Moves:		****		****			****				****	
Green/Cycle:	0.10	0.13	0.13	0.23	0.26	0.26	0.00	0.46	0.46	0.05	0.51	0.51
Volume/Cap:	0.01	0.89	0.89	0.89	0.01	0.01	0.89	0.77	0.00	0.77	0.89	0.89
Delay/Veh:	40.3	76.9	76.9	57.0	27.5	27.5	308.7	24.1	14.4	64.7	26.0	26.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.3	76.9	76.9	57.0	27.5	27.5	308.7	24.1	14.4	64.7	26.0	26.0
LOS by Move:	D	E	E	E	C	C	F	C	B	E	C	C
HCM2k95thQ:	3	397	397	629	6	6	15	666	1	126	930	930

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0	1	2	0	2	1	0
Lane Group:	L	RT		RT	L	RT		RT	L	T		R	L	RT		RT
#LnsInGrps:	1	1		1	1	1		1	1	3		1	2	3		3
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.86	0.86		xxxx	0.94	0.94		xxxx	xxxx	0.85		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.84	0.84		0.93	0.92	0.92		0.93	0.98	0.83		0.93	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.91	1.00		0.97	0.91	0.91	
Fnl Sat Adj:	0.93	0.84	0.84		0.93	0.92	0.92		0.93	0.89	0.83		0.90	0.87	0.87	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.10	0.13	0.13		0.23	0.26	0.26		0.00	0.46	0.46		0.05	0.51	0.51	
ArrivalType:		4				4				4				4		
ProgFactor:	0.96	0.99	0.99		0.98	0.88	0.88		1.00	0.88	0.71		1.00	0.90	0.90	
Q1:	0.1	4.9	4.9		9.7	0.1	0.1		0.2	13.5	0.0		2.0	18.4	18.4	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.63	0.63	0.63		0.45	0.45	0.45	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.74	0.74	0.74		0.89	0.89	0.89	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.03	0.50	0.45		0.16	0.63	0.63	
Q2:	0.0	3.5	3.5		4.5	0.0	0.0		0.1	1.6	0.0		0.5	3.8	3.8	
HCM2KQueue:	0.1	8.5	8.5		14.2	0.1	0.1		0.3	15.1	0.0		2.5	22.2	22.2	
70th%Factor:	1.20	1.18	1.18		1.17	1.20	1.20		1.20	1.17	1.20		1.19	1.16	1.16	
HCM2k70thQ:	0.1	10.0	10.0		16.6	0.1	0.1		0.3	17.7	0.0		3.0	25.7	25.7	
85th%Factor:	1.60	1.53	1.53		1.49	1.60	1.60		1.60	1.48	1.60		1.58	1.44	1.44	
HCM2k85thQ:	0.1	12.9	12.9		21.1	0.2	0.2		0.5	22.4	0.0		3.9	32.0	32.0	
90th%Factor:	1.80	1.66	1.66		1.60	1.80	1.80		1.79	1.59	1.80		1.75	1.53	1.53	
HCM2k90thQ:	0.1	14.1	14.1		22.7	0.2	0.2		0.5	24.0	0.0		4.4	34.0	34.0	
95th%Factor:	2.10	1.87	1.87		1.77	2.10	2.10		2.09	1.76	2.10		2.02	1.67	1.67	
HCM2k95thQ:	0.1	15.9	15.9		25.2	0.2	0.2		0.6	26.6	0.0		5.0	37.2	37.2	
98th%Factor:	2.70	2.22	2.22		2.04	2.69	2.69		2.68	2.01	2.70		2.53	1.88	1.88	
HCM2k98thQ:	0.2	18.8	18.8		28.9	0.3	0.3		0.8	30.5	0.0		6.3	41.8	41.8	

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Eight Mile & SR 99 E Frontage

Cycle (sec):	100	Critical Vol./Cap.(X):	0.234
Loss Time (sec):	12	Average Delay (sec/veh):	4.0
Optimal Cycle:	29	Level Of Service:	A

Street Name:	SR 99 East Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	2 0	1	1 0	1 1	0
Volume Module:PM Peak Hour												
Base Vol:	9	2	6	8	1	5	9	605	5	8	605	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	2	6	8	1	5	9	605	5	8	605	6
Added Vol:	0	0	0	0	0	0	0	7	0	0	11	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	2	6	8	1	5	9	612	5	8	616	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	10	2	7	9	1	5	10	665	5	9	670	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	2	7	9	1	5	10	665	5	9	670	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	10	2	7	9	1	5	10	665	5	9	670	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.87	0.87	0.93	0.86	0.86	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	1.00	0.25	0.75	1.00	0.17	0.83	1.00	2.00	1.00	1.00	1.98	0.02
Final Sat.:	1769	413	1240	1769	272	1358	1769	3538	1583	1769	3500	34
Capacity Analysis Module:												
Vol/Sat:	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.19	0.00	0.00	0.19	0.19
Crit Moves:	****				****		****				****	
Green/Cycle:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.82	0.82	0.02	0.82	0.82
Volume/Cap:	0.23	0.25	0.25	0.25	0.23	0.23	0.23	0.23	0.00	0.23	0.23	0.23
Delay/Veh:	50.8	51.9	51.9	52.1	52.8	52.8	50.8	2.1	1.7	51.2	2.1	2.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.8	51.9	51.9	52.1	52.8	52.8	50.8	2.1	1.7	51.2	2.1	2.1
LOS by Move:	D	D	D	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	29	28	28	28	24	24	16	14	0	27	16	16

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	2 0	1	1 0	1 1	0
Lane Group:	L	RT	RT	L	RT	RT	L	T	R	L	RT	RT
#LnsInGrps:	1	1	1	1	1	1	1	2	1	1	2	2
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	0.89	0.89	xxxx	0.88	0.88	xxxx	xxxx	0.85	xxxx	1.00	1.00
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.87	0.87	0.93	0.86	0.86	0.93	0.98	0.83	0.93	0.98	0.98
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Fnl Sat Adj:	0.93	0.87	0.87	0.93	0.86	0.86	0.93	0.93	0.83	0.93	0.93	0.93
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.02	0.02	0.02		0.02	0.02	0.02		0.02	0.82	0.82		0.02	0.82	0.82	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.99	0.99		0.99	1.00	1.00		0.99	0.00	0.00		0.99	0.00	0.00	
Q1:	0.3	0.2	0.2		0.2	0.2	0.2		0.3	0.0	0.0		0.2	0.0	0.0	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.26	0.26	0.26		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.98	0.98	0.98		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.11	0.92	0.84		1.00	1.00	1.00	
Q2:	0.3	0.3	0.3		0.3	0.3	0.3		0.0	0.3	0.0		0.3	0.3	0.3	
HCM2KQueue:	0.6	0.5	0.5		0.5	0.5	0.5		0.3	0.3	0.0		0.5	0.3	0.3	
70th%Factor:	1.20	1.20	1.20		1.20	1.20	1.20		1.20	1.20	1.20		1.20	1.20	1.20	
HCM2k70thQ:	0.7	0.6	0.6		0.6	0.5	0.5		0.4	0.3	0.0		0.6	0.4	0.4	
85th%Factor:	1.59	1.59	1.59		1.59	1.60	1.60		1.60	1.60	1.60		1.59	1.60	1.60	
HCM2k85thQ:	0.9	0.9	0.9		0.9	0.7	0.7		0.5	0.4	0.0		0.8	0.5	0.5	
90th%Factor:	1.79	1.79	1.79		1.79	1.79	1.79		1.79	1.79	1.80		1.79	1.79	1.79	
HCM2k90thQ:	1.0	1.0	1.0		1.0	0.8	0.8		0.5	0.5	0.0		0.9	0.5	0.5	
95th%Factor:	2.08	2.08	2.08		2.08	2.09	2.09		2.09	2.09	2.10		2.08	2.09	2.09	
HCM2k95thQ:	1.1	1.1	1.1		1.1	0.9	0.9		0.6	0.6	0.0		1.1	0.6	0.6	
98th%Factor:	2.66	2.66	2.66		2.66	2.67	2.67		2.68	2.68	2.70		2.66	2.68	2.68	
HCM2k98thQ:	1.5	1.4	1.4		1.4	1.2	1.2		0.8	0.7	0.0		1.4	0.8	0.8	

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

Cycle (sec):	100	Critical Vol./Cap.(X):	1.159
Loss Time (sec):	12	Average Delay (sec/veh):	92.0
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Holman Road								Lt. Col. Mark Taylor Street							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	3	0 1	1	0	3	0 1	1	0	1	0 1	1	0	0	1 0
Volume Module:	PM Peak Hour															
Base Vol:	49	556	279		410	348	30		60	521	26		347	525	344	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	49	556	279		410	348	30		60	521	26		347	525	344	
Added Vol:	0	9	0		0	6	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	49	565	279		410	354	30		60	521	26		347	525	344	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	53	614	303		446	385	33		65	566	28		377	571	374	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	53	614	303		446	385	33		65	566	28		377	571	374	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	53	614	303		446	385	33		65	566	28		377	571	374	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.98	0.83		0.93	0.92	0.92	
Lanes:	1.00	3.00	1.00		1.00	3.00	1.00		1.00	1.00	1.00		1.00	0.60	0.40	
Final Sat.:	1769	5083	1583		1769	5083	1583		1769	1862	1583		1769	1059	694	
Capacity Analysis Module:																
Vol/Sat:	0.03	0.12	0.19		0.25	0.08	0.02		0.04	0.30	0.02		0.21	0.54	0.54	
Crit Moves:			****		****				****					****		
Green/Cycle:	0.11	0.17	0.17		0.22	0.27	0.27		0.03	0.29	0.29		0.20	0.47	0.47	
Volume/Cap:	0.28	0.73	1.16		1.16	0.28	0.08		1.16	1.04	0.06		1.04	1.16	1.16	
Delay/Veh:	41.7	42.9	147.1		135.7	28.6	27.0		218.0	84.9	25.6		98.0	112	111.6	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	41.7	42.9	147.1		135.7	28.6	27.0		218.0	84.9	25.6		98.0	112	111.6	
LOS by Move:	D	D	F		F	C	C		F	F	C		F	F	F	
HCM2k95thQ:	72	313	664		1016	157	35		177	969	27		787	1845	1845	

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 3	0 1		1	0 3	0 1		1	0 1	0 1		1	0 0	1 0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	3	1		1	3	1		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.94	0.94	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.92	0.92	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.98	0.83		0.93	0.92	0.92	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.11	0.17	0.17		0.22	0.27	0.27		0.03	0.29	0.29		0.20	0.47	0.47	
ArrivalType:		4				4				4				4		
ProgFactor:	0.97	0.98	1.00		1.00	0.90	0.88		1.00	1.00	0.87		1.00	1.00	1.00	
Q1:	1.3	5.8	8.4		12.4	2.8	0.6		1.8	15.7	0.5		10.5	26.2	26.2	
UpstreamVC:	0.57	0.57	0.57		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.79	0.79	0.79		0.00	0.00	0.00		1.00	1.00	1.00		0.00	0.00	0.00	
EarlyArrAdj:	0.22	0.29	0.26		1.00	1.00	1.00		0.13	0.51	0.46		1.00	1.00	1.00	
Q2:	0.1	0.7	6.7		12.2	0.4	0.1		1.7	7.5	0.0		7.8	21.6	21.6	
HCM2KQueue:	1.4	6.5	15.1		24.6	3.1	0.7		3.5	23.3	0.5		18.3	47.9	47.9	
70th%Factor:	1.20	1.18	1.17		1.15	1.19	1.20		1.19	1.16	1.20		1.16	1.13	1.13	
HCM2k70thQ:	1.7	7.7	17.6		28.4	3.7	0.8		4.2	26.9	0.6		21.3	54.1	54.1	
85th%Factor:	1.59	1.54	1.48		1.43	1.57	1.59		1.57	1.44	1.59		1.46	1.36	1.36	
HCM2k85thQ:	2.2	10.1	22.4		35.2	4.9	1.1		5.6	33.5	0.8		26.8	65.1	65.1	
90th%Factor:	1.77	1.69	1.59		1.52	1.74	1.79		1.74	1.52	1.79		1.56	1.44	1.44	
HCM2k90thQ:	2.5	11.0	24.0		37.3	5.5	1.2		6.1	35.5	0.9		28.6	68.7	68.7	
95th%Factor:	2.06	1.92	1.76		1.65	2.00	2.08		1.99	1.66	2.08		1.72	1.54	1.54	
HCM2k95thQ:	2.9	12.5	26.6		40.6	6.3	1.4		7.1	38.8	1.1		31.5	73.8	73.8	
98th%Factor:	2.60	2.30	2.01		1.85	2.49	2.65		2.46	1.87	2.66		1.94	1.73	1.73	
HCM2k98thQ:	3.6	15.1	30.4		45.5	7.8	1.8		8.7	43.5	1.4		35.6	82.6	82.6	

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.874
Loss Time (sec):	12	Average Delay (sec/veh):	36.4
Optimal Cycle:	99	Level Of Service:	D

Street Name:	West Lane						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	4 0	1	2 0	4 0	1	2 0	2 0	1	2 0	2 0	1
Volume Module:	PM Peak Hour											
Base Vol:	576	1535	230	81	1247	86	172	444	396	312	370	57
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	576	1535	230	81	1247	86	172	444	396	312	370	57
Added Vol:	0	159	0	29	101	3	5	0	0	0	0	44
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	576	1694	230	110	1348	89	177	444	396	312	370	101
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	626	1841	250	120	1465	97	192	483	430	339	402	110
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	626	1841	250	120	1465	97	192	483	430	339	402	110
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	626	1841	250	120	1465	97	192	483	430	339	402	110
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.93	0.83	0.90	0.93	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	3538	1583	3432	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.18	0.27	0.16	0.03	0.22	0.06	0.06	0.14	0.27	0.10	0.11	0.07
Crit Moves:	****				****				****	****		
Green/Cycle:	0.21	0.40	0.40	0.05	0.25	0.25	0.14	0.31	0.31	0.11	0.28	0.28
Volume/Cap:	0.87	0.67	0.39	0.67	0.87	0.25	0.40	0.44	0.87	0.87	0.40	0.24
Delay/Veh:	49.9	25.0	21.5	56.2	41.6	30.5	39.7	27.8	48.5	62.9	29.2	27.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.9	25.0	21.5	56.2	41.6	30.5	39.7	27.8	48.5	62.9	29.2	27.8
LOS by Move:	D	C	C	E	D	C	D	C	D	E	C	C
HCM2k95thQ:	568	546	230	158	656	116	154	281	676	382	243	122

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2 0	4 0	1	2 0	4 0	1	2 0	2 0	1	2 0	2 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	4	1	2	4	1	2	2	1	2	2	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Fnl Sat Adj:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.93	0.83	0.90	0.93	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.21	0.40	0.40	0.05	0.25	0.25	0.14	0.31	0.31	0.11	0.28	0.28
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.88	0.83	0.99	0.98	0.91	0.96	0.90	0.97	0.99	0.91	0.89
Q1:	8.6	10.2	4.1	1.7	10.5	2.0	2.4	5.0	11.0	4.7	4.3	2.1
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	4.1	1.9	0.6	1.5	4.3	0.3	0.6	0.8	4.4	3.4	0.7	0.3
HCM2KQueue:	12.6	12.1	4.7	3.1	14.9	2.3	3.1	5.8	15.4	8.1	5.0	2.4
70th%Factor:	1.17	1.17	1.19	1.19	1.17	1.19	1.19	1.19	1.17	1.18	1.19	1.19
HCM2k70thQ:	14.8	14.2	5.6	3.7	17.4	2.7	3.7	6.9	18.0	9.6	5.9	2.9
85th%Factor:	1.50	1.50	1.56	1.57	1.48	1.58	1.57	1.55	1.48	1.53	1.55	1.58
HCM2k85thQ:	18.9	18.1	7.3	4.9	22.1	3.6	4.8	9.0	22.8	12.4	7.7	3.8
90th%Factor:	1.61	1.62	1.72	1.74	1.59	1.76	1.74	1.70	1.59	1.67	1.71	1.75
HCM2k90thQ:	20.4	19.6	8.1	5.5	23.7	4.0	5.3	9.9	24.4	13.5	8.5	4.2
95th%Factor:	1.80	1.81	1.96	2.00	1.76	2.03	2.01	1.93	1.75	1.88	1.96	2.02
HCM2k95thQ:	22.7	21.8	9.2	6.3	26.2	4.6	6.2	11.2	27.0	15.3	9.7	4.9
98th%Factor:	2.08	2.09	2.40	2.49	2.02	2.54	2.49	2.34	2.01	2.24	2.38	2.53
HCM2k98thQ:	26.3	25.3	11.2	7.8	30.0	5.8	7.6	13.6	30.9	18.1	11.8	6.1

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.631
Loss Time (sec): 12 Average Delay (sec/veh): 35.2
Optimal Cycle: 51 Level Of Service: D

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:	PM Peak Hour											
Base Vol:	246	732	159	154	577	101	178	665	145	214	647	111
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	246	732	159	154	577	101	178	665	145	214	647	111
Added Vol:	4	7	0	0	5	1	2	17	2	0	26	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	250	739	159	154	582	102	180	682	147	214	673	111
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	272	803	173	167	633	111	196	741	160	233	732	121
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	272	803	173	167	633	111	196	741	160	233	732	121
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	272	803	173	167	633	111	196	741	160	233	732	121
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.15	0.16	0.11	0.09	0.12	0.07	0.11	0.15	0.10	0.13	0.14	0.08
Crit Moves:	****				****			****		****		
Green/Cycle:	0.24	0.28	0.28	0.17	0.20	0.20	0.19	0.23	0.23	0.21	0.25	0.25
Volume/Cap:	0.63	0.57	0.40	0.57	0.63	0.36	0.58	0.63	0.44	0.63	0.58	0.31
Delay/Veh:	36.8	31.7	30.1	41.3	38.1	35.4	39.3	35.7	33.7	39.6	33.7	31.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.8	31.7	30.1	41.3	38.1	35.4	39.3	35.7	33.7	39.6	33.7	31.0
LOS by Move:	D	C	C	D	D	D	D	D	C	D	C	C
HCM2k95thQ:	330	334	187	226	304	136	291	380	212	301	322	134

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	3	0 1	1	0	3	0 1	1	0	3	0 1	1	0	3	0 1
Lane Group:	L		T	R	L		T	R	L		T	R	L		T	R
#LnsInGrps:	1		3	1	1		3	1	1		3	1	1		3	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.24	0.28	0.28		0.17	0.20	0.20		0.19	0.23	0.23		0.21	0.25	0.25	
ArrivalType:		4				4				4				4		
ProgFactor:	0.95	0.93	0.91		0.97	0.96	0.94		0.96	0.95	0.93		0.96	0.94	0.92	
Q1:	6.4	6.6	3.6		4.2	5.7	2.5		4.8	6.5	3.5		5.7	6.2	2.5	
UpstreamVC:	0.67	0.67	0.67		0.28	0.28	0.28		0.00	0.00	0.00		0.42	0.42	0.42	
UpstreamAdj:	0.69	0.69	0.69		0.97	0.97	0.97		0.00	0.00	0.00		0.91	0.91	0.91	
EarlyArrAdj:	0.31	0.34	0.31		0.34	0.39	0.35		1.00	1.00	1.00		0.37	0.42	0.38	
Q2:	0.5	0.4	0.2		0.4	0.6	0.2		1.3	1.6	0.8		0.6	0.6	0.2	
HCM2KQueue:	6.9	7.0	3.8		4.6	6.3	2.7		6.0	8.1	4.3		6.3	6.7	2.7	
70th%Factor:	1.18	1.18	1.19		1.19	1.19	1.19		1.19	1.18	1.19		1.19	1.18	1.19	
HCM2k70thQ:	8.2	8.3	4.5		5.5	7.5	3.2		7.2	9.5	5.1		7.4	8.0	3.2	
85th%Factor:	1.54	1.54	1.56		1.56	1.54	1.57		1.55	1.53	1.56		1.54	1.54	1.57	
HCM2k85thQ:	10.6	10.8	5.9		7.2	9.8	4.2		9.3	12.3	6.7		9.7	10.4	4.2	
90th%Factor:	1.68	1.68	1.73		1.72	1.69	1.75		1.70	1.67	1.72		1.69	1.69	1.75	
HCM2k90thQ:	11.6	11.8	6.5		7.9	10.7	4.7		10.2	13.4	7.4		10.6	11.3	4.7	
95th%Factor:	1.91	1.91	1.99		1.96	1.92	2.02		1.93	1.88	1.97		1.92	1.91	2.02	
HCM2k95thQ:	13.2	13.3	7.5		9.0	12.2	5.4		11.6	15.2	8.5		12.1	12.9	5.4	
98th%Factor:	2.29	2.28	2.45		2.40	2.31	2.51		2.33	2.24	2.42		2.32	2.30	2.51	
HCM2k98thQ:	15.8	16.0	9.2		11.0	14.7	6.8		14.1	18.0	10.4		14.5	15.4	6.7	

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 Morada Ln & SR99 W Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.654
Loss Time (sec):	12	Average Delay (sec/veh):	24.5
Optimal Cycle:	54	Level Of Service:	C

Street Name:	SR 99 West Frontage Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1 0 1	2	0	0 1 0	1	0	2 1 0	1	0	2 0 1
Volume Module:PM Peak Hour												
Base Vol:	5	63	89	468	26	11	29	701	2	96	694	507
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	63	89	468	26	11	29	701	2	96	694	507
Added Vol:	0	0	0	0	0	0	0	17	0	0	26	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	63	89	468	26	11	29	718	2	96	720	507
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	5	68	97	509	28	12	32	780	2	104	783	551
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	68	97	509	28	12	32	780	2	104	783	551
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	5	68	97	509	28	12	32	780	2	104	783	551
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.90	0.94	0.94	0.93	0.89	0.89	0.93	0.93	0.83
Lanes:	2.00	1.00	1.00	2.00	0.70	0.30	1.00	2.99	0.01	1.00	2.00	1.00
Final Sat.:	3432	1862	1583	3432	1250	529	1769	5069	14	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.04	0.06	0.15	0.02	0.02	0.02	0.15	0.15	0.06	0.22	0.35
Crit Moves:			****	****			****					****
Green/Cycle:	0.02	0.09	0.09	0.23	0.30	0.30	0.03	0.40	0.40	0.16	0.53	0.53
Volume/Cap:	0.08	0.39	0.65	0.65	0.08	0.08	0.65	0.38	0.38	0.38	0.42	0.65
Delay/Veh:	48.5	44.1	53.8	37.1	25.2	25.2	76.1	21.1	21.1	38.8	14.2	18.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.5	44.1	53.8	37.1	25.2	25.2	76.1	21.1	21.1	38.8	14.2	18.6
LOS by Move:	D	D	D	D	C	C	E	C	C	D	B	B
HCM2k95thQ:	8	120	202	379	40	40	53	239	239	136	254	438

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #22 Morada Ln & SR99 W Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2	0	1 0 1	2	0	0 1 0	1	0	2 1 0	1	0	2 0 1
Lane Group:	L	T	R	L	RT	RT	L	RT	RT	L	T	R
#LnsInGrps:	2	1	1	2	1	1	1	3	3	1	2	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	0.96	0.96	xxxx	1.00	1.00	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.94	0.94	0.93	0.98	0.98	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	1.00	1.00	0.97	1.00	1.00	1.00	0.91	0.91	1.00	0.95	1.00
Fnl Sat Adj:	0.90	0.98	0.83	0.90	0.94	0.94	0.93	0.89	0.89	0.93	0.93	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #22 Morada Ln & SR99 W Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.02	0.09	0.09	0.23	0.30	0.30	0.03	0.40	0.40	0.16	0.53	0.53
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.98	0.99	0.96	0.86	0.86	1.00	0.82	0.82	0.96	0.69	0.75
Q1:	0.1	1.8	2.6	6.3	0.7	0.7	0.9	4.6	4.6	2.5	4.7	8.3
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.63	0.63	0.31	0.31	0.31
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.73	0.73	0.96	0.96	0.96
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.09	0.46	0.46	0.32	0.70	0.64
Q2:	0.1	0.6	1.5	1.7	0.1	0.1	0.2	0.3	0.3	0.2	0.5	1.2
HCM2KQueue:	0.2	2.4	4.1	8.1	0.8	0.8	1.0	4.9	4.9	2.7	5.2	9.5
70th%Factor:	1.20	1.19	1.19	1.18	1.20	1.20	1.20	1.19	1.19	1.19	1.19	1.18
HCM2k70thQ:	0.2	2.8	4.9	9.5	0.9	0.9	1.2	5.8	5.8	3.2	6.2	11.1
85th%Factor:	1.60	1.58	1.56	1.53	1.59	1.59	1.59	1.55	1.55	1.57	1.55	1.52
HCM2k85thQ:	0.2	3.7	6.4	12.3	1.2	1.2	1.6	7.6	7.6	4.2	8.1	14.4
90th%Factor:	1.80	1.76	1.73	1.67	1.78	1.78	1.78	1.71	1.71	1.75	1.71	1.65
HCM2k90thQ:	0.3	4.2	7.1	13.4	1.4	1.4	1.8	8.4	8.4	4.7	8.9	15.6
95th%Factor:	2.09	2.03	1.98	1.88	2.07	2.07	2.07	1.96	1.96	2.02	1.95	1.85
HCM2k95thQ:	0.3	4.8	8.1	15.2	1.6	1.6	2.1	9.6	9.6	5.4	10.1	17.5
98th%Factor:	2.69	2.53	2.43	2.24	2.64	2.64	2.62	2.39	2.39	2.51	2.37	2.18
HCM2k98thQ:	0.4	6.0	9.9	18.0	2.0	2.0	2.7	11.7	11.7	6.8	12.3	20.6

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 West Ln & West Ln Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.858
Loss Time (sec):	12	Average Delay (sec/veh):	28.9
Optimal Cycle:	93	Level Of Service:	C

Street Name:	West Lane						West Lane Frontage Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3	1 0	1 0	3	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:	PM Peak Hour											
Base Vol:	312	2171	80	16	1770	26	62	39	256	98	25	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	312	2171	80	16	1770	26	62	39	256	98	25	10
Added Vol:	0	159	0	0	101	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	312	2330	80	16	1871	26	62	39	256	98	25	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	339	2533	87	17	2034	28	67	42	278	107	27	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	339	2533	87	17	2034	28	67	42	278	107	27	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	339	2533	87	17	2034	28	67	42	278	107	27	11
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.89	0.89	0.93	0.85	0.85	0.93	0.94	0.94
Lanes:	1.00	3.87	0.13	1.00	3.95	0.05	1.00	0.13	0.87	1.00	0.71	0.29
Final Sat.:	1769	6520	224	1769	6671	93	1769	214	1406	1769	1273	509
Capacity Analysis Module:												
Vol/Sat:	0.19	0.39	0.39	0.01	0.30	0.30	0.04	0.20	0.20	0.06	0.02	0.02
Crit Moves:	****				****			****		****		
Green/Cycle:	0.22	0.56	0.56	0.01	0.36	0.36	0.19	0.23	0.23	0.07	0.11	0.11
Volume/Cap:	0.86	0.69	0.69	0.69	0.86	0.86	0.20	0.86	0.86	0.86	0.20	0.20
Delay/Veh:	54.1	16.0	16.0	106.9	33.2	33.2	34.1	54.5	54.5	87.1	41.1	41.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.1	16.0	16.0	106.9	33.2	33.2	34.1	54.5	54.5	87.1	41.1	41.1
LOS by Move:	D	B	B	F	C	C	C	D	D	F	D	D
HCM2k95thQ:	447	494	494	79	787	787	87	551	551	273	61	61

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	3	1	0	1	0	3	1	0	1	0	0	1	0	1
Lane Group:	L	RT		RT	L	RT		RT	L	RT		RT	L	RT		RT
#LnsInGrps:	1	4		4	1	4		4	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	0.87	0.87		xxxx	0.96	0.96	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.98		0.93	0.98	0.98		0.93	0.85	0.85		0.93	0.94	0.94	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	0.91		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.89		0.93	0.89	0.89		0.93	0.85	0.85		0.93	0.94	0.94	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.22	0.56	0.56		0.01	0.36	0.36		0.19	0.23	0.23		0.07	0.11	0.11	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.72	0.72		1.00	0.96	0.96		0.93	0.98	0.98		1.00	0.97	0.97	
Q1:	8.9	10.3	10.3		0.5	13.9	13.9		1.5	8.4	8.4		2.9	0.9	0.9	
UpstreamVC:	0.89	0.89	0.89		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.34	0.34	0.34		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	0.14	0.26	0.26		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.8	0.6	0.6		1.1	4.4	4.4		0.2	3.8	3.8		2.7	0.2	0.2	
HCM2KQueue:	9.7	10.8	10.8		1.5	18.3	18.3		1.7	12.2	12.2		5.6	1.2	1.2	
70th%Factor:	1.18	1.18	1.18		1.20	1.16	1.16		1.20	1.17	1.17		1.19	1.20	1.20	
HCM2k70thQ:	11.4	12.7	12.7		1.8	21.3	21.3		2.0	14.3	14.3		6.7	1.4	1.4	
85th%Factor:	1.52	1.51	1.51		1.58	1.46	1.46		1.58	1.50	1.50		1.55	1.59	1.59	
HCM2k85thQ:	14.7	16.3	16.3		2.4	26.8	26.8		2.7	18.3	18.3		8.7	1.9	1.9	
90th%Factor:	1.65	1.63	1.63		1.77	1.56	1.56		1.77	1.62	1.62		1.70	1.78	1.78	
HCM2k90thQ:	15.9	17.7	17.7		2.7	28.6	28.6		3.0	19.7	19.7		9.6	2.1	2.1	
95th%Factor:	1.85	1.83	1.83		2.05	1.72	1.72		2.05	1.80	1.80		1.94	2.06	2.06	
HCM2k95thQ:	17.9	19.8	19.8		3.2	31.5	31.5		3.5	22.0	22.0		10.9	2.4	2.4	
98th%Factor:	2.18	2.14	2.14		2.59	1.94	1.94		2.58	2.09	2.09		2.35	2.61	2.61	
HCM2k98thQ:	21.0	23.1	23.1		4.0	35.6	35.6		4.4	25.5	25.5		13.2	3.1	3.1	

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 West Lane & Knickerbocker Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.887
Loss Time (sec):	12	Average Delay (sec/veh):	34.1
Optimal Cycle:	104	Level Of Service:	C

Street Name:	West Lane						Knickerbocker Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3	1 0	1 0	3	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:	PM Peak Hour											
Base Vol:	196	2446	58	114	2012	163	259	106	108	82	114	83
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	196	2446	58	114	2012	163	259	106	108	82	114	83
Added Vol:	0	159	0	0	101	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	196	2605	58	114	2113	163	259	106	108	82	114	83
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	213	2832	63	124	2297	177	282	115	117	89	124	90
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	213	2832	63	124	2297	177	282	115	117	89	124	90
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	213	2832	63	124	2297	177	282	115	117	89	124	90
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.88	0.88	0.93	0.91	0.91	0.93	0.92	0.92
Lanes:	1.00	3.91	0.09	1.00	3.71	0.29	1.00	0.50	0.50	1.00	0.58	0.42
Final Sat.:	1769	6610	147	1769	6223	480	1769	852	868	1769	1010	735
Capacity Analysis Module:												
Vol/Sat:	0.12	0.43	0.43	0.07	0.37	0.37	0.16	0.14	0.14	0.05	0.12	0.12
Crit Moves:		****		****			****				****	
Green/Cycle:	0.14	0.48	0.48	0.08	0.42	0.42	0.18	0.23	0.23	0.09	0.14	0.14
Volume/Cap:	0.87	0.89	0.89	0.89	0.87	0.87	0.89	0.58	0.58	0.58	0.89	0.89
Delay/Veh:	69.1	26.7	26.7	89.8	29.5	29.5	64.6	36.4	36.4	49.6	72.4	72.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.1	26.7	26.7	89.8	29.5	29.5	64.6	36.4	36.4	49.6	72.4	72.4
LOS by Move:	E	C	C	F	C	C	E	D	D	D	E	E
HCM2k95thQ:	287	804	804	195	762	762	528	323	323	178	442	442

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	3	1 0		1 0	3	1 0		1 0	0	1 0		1 0	0	1 0	
Lane Group:	L	RT	RT		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	4	4		1	4	4		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	1.00	1.00		xxxx	0.99	0.99		xxxx	0.92	0.92		xxxx	0.94	0.94	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.98		0.93	0.97	0.97		0.93	0.91	0.91		0.93	0.92	0.92	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	0.91		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.89		0.93	0.88	0.88		0.93	0.91	0.91		0.93	0.92	0.92	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.14	0.48	0.48	0.08	0.42	0.42	0.18	0.23	0.23	0.09	0.14	0.14
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.92	0.92	1.00	0.94	0.94	0.99	0.95	0.95	0.99	0.99	0.99
Q1:	5.8	18.3	18.3	3.4	16.2	16.2	7.6	5.4	5.4	2.3	5.8	5.8
UpstreamVC:	1.22	1.22	1.22	0.86	0.86	0.86	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.09	0.09	0.09	0.40	0.40	0.40	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.03	0.06	0.06	0.09	0.25	0.25	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.2	0.5	0.5	0.5	1.5	1.5	4.1	1.3	1.3	1.2	3.7	3.7
HCM2KQueue:	5.9	18.8	18.8	3.9	17.7	17.7	11.6	6.8	6.8	3.6	9.5	9.5
70th%Factor:	1.19	1.16	1.16	1.19	1.16	1.16	1.17	1.18	1.18	1.19	1.18	1.18
HCM2k70thQ:	7.0	21.9	21.9	4.7	20.6	20.6	13.7	8.0	8.0	4.2	11.2	11.2
85th%Factor:	1.55	1.46	1.46	1.56	1.47	1.47	1.50	1.54	1.54	1.57	1.52	1.52
HCM2k85thQ:	9.2	27.5	27.5	6.2	25.9	25.9	17.5	10.4	10.4	5.6	14.5	14.5
90th%Factor:	1.70	1.56	1.56	1.73	1.57	1.57	1.62	1.69	1.69	1.73	1.65	1.65
HCM2k90thQ:	10.1	29.3	29.3	6.8	27.7	27.7	18.9	11.4	11.4	6.2	15.7	15.7
95th%Factor:	1.93	1.71	1.71	1.98	1.72	1.72	1.81	1.91	1.91	1.99	1.85	1.85
HCM2k95thQ:	11.5	32.2	32.2	7.8	30.5	30.5	21.1	12.9	12.9	7.1	17.7	17.7
98th%Factor:	2.33	1.94	1.94	2.44	1.96	1.96	2.11	2.29	2.29	2.46	2.18	2.18
HCM2k98thQ:	13.8	36.4	36.4	9.6	34.6	34.6	24.6	15.5	15.5	8.8	20.8	20.8

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 1.224
Loss Time (sec): 12 Average Delay (sec/veh): 88.8
Optimal Cycle: 180 Level Of Service: F

Street Name:	West Lane						Hammer Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	4	0	1	2	0	4	0	1
Volume Module:	PM Peak Hour											
Base Vol:	188	1890	466	780	1300	133	244	1073	104	620	1093	617
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	188	1890	466	780	1300	133	244	1073	104	620	1093	617
Added Vol:	0	159	0	0	101	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	188	2049	466	780	1401	133	244	1073	104	620	1093	617
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	204	2227	507	848	1523	145	265	1166	113	674	1188	671
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	204	2227	507	848	1523	145	265	1166	113	674	1188	671
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	204	2227	507	848	1523	145	265	1166	113	674	1188	671
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.06	0.33	0.32	0.25	0.22	0.09	0.08	0.17	0.07	0.20	0.18	0.42
Crit Moves:		****		****			****					****
Green/Cycle:	0.10	0.27	0.27	0.20	0.37	0.37	0.06	0.19	0.19	0.22	0.35	0.35
Volume/Cap:	0.60	1.22	1.19	1.22	0.60	0.25	1.22	0.90	0.37	0.90	0.51	1.22
Delay/Veh:	46.3	142	143.9	153.1	25.9	21.9	181.4	48.3	36.0	51.9	26.1	148.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.3	142	143.9	153.1	25.9	21.9	181.4	48.3	36.0	51.9	26.1	148.8
LOS by Move:	D	F	F	F	C	C	F	D	D	D	C	F
HCM2k95thQ:	202	1394	1160	954	407	120	452	586	159	444	308	1359

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	4	0 1	2	0	4	0 1	2	0	4	0 1	2	0	4	0 1
Lane Group:	L		T	R	L		T	R	L		T	R	L		T	R
#LnsInGrps:	2		4	1	2		4	1	2		4	1	2		4	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.10	0.27	0.27		0.20	0.37	0.37		0.06	0.19	0.19		0.22	0.35	0.35	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	1.00	1.00		1.00	0.89	0.83		1.00	0.99	0.95		0.99	0.89	1.00	
Q1:	2.8	17.0	14.1		12.1	8.4	2.3		3.8	8.6	2.6		9.3	6.4	18.6	
UpstreamVC:	0.00	0.00	0.00		0.87	0.87	0.87		0.00	0.00	0.00		1.03	1.03	1.03	
UpstreamAdj:	0.00	0.00	0.00		0.37	0.37	0.37		0.00	0.00	0.00		0.09	0.09	0.09	
EarlyArrAdj:	1.00	1.00	1.00		0.15	0.22	0.20		1.00	1.00	1.00		0.04	0.05	0.05	
Q2:	1.3	18.2	14.5		10.7	0.3	0.1		6.0	4.5	0.6		0.3	0.1	15.6	
HCM2KQueue:	4.1	35.2	28.6		22.9	8.7	2.4		9.8	13.1	3.2		9.6	6.4	34.2	
70th%Factor:	1.19	1.14	1.15		1.16	1.18	1.19		1.18	1.17	1.19		1.18	1.19	1.14	
HCM2k70thQ:	4.9	40.2	32.9		26.4	10.3	2.8		11.5	15.3	3.8		11.3	7.6	39.1	
85th%Factor:	1.56	1.39	1.42		1.44	1.52	1.58		1.52	1.49	1.57		1.52	1.54	1.40	
HCM2k85thQ:	6.4	49.0	40.5		32.9	13.3	3.7		14.8	19.5	5.0		14.5	9.9	47.7	
90th%Factor:	1.73	1.47	1.50		1.53	1.66	1.76		1.65	1.61	1.74		1.65	1.69	1.47	
HCM2k90thQ:	7.0	51.7	42.8		34.9	14.4	4.2		16.1	21.0	5.5		15.8	10.9	50.3	
95th%Factor:	1.98	1.59	1.62		1.67	1.87	2.03		1.85	1.79	2.00		1.85	1.92	1.59	
HCM2k95thQ:	8.1	55.8	46.4		38.2	16.3	4.8		18.1	23.4	6.3		17.8	12.3	54.4	
98th%Factor:	2.43	1.77	1.81		1.87	2.21	2.53		2.17	2.07	2.48		2.18	2.31	1.77	
HCM2k98thQ:	9.9	62.1	51.8		42.8	19.2	6.0		21.2	27.0	7.9		20.9	14.8	60.6	

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	1.029
Loss Time (sec):	12	Average Delay (sec/veh):	51.4
Optimal Cycle:	180	Level Of Service:	D

Street Name:	Hammer Lane						Holman Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 2	1 0	2	0 3	0 1	2	0 3	1 0	2	0 3	1 0
Volume Module:	PM Peak Hour											
Base Vol:	521	672	148	215	574	320	532	2019	312	210	2022	151
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	521	672	148	215	574	320	532	2019	312	210	2022	151
Added Vol:	0	11	0	0	7	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	521	683	148	215	581	320	532	2019	312	210	2022	151
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	566	742	161	234	632	348	578	2195	339	228	2198	164
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	566	742	161	234	632	348	578	2195	339	228	2198	164
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	566	742	161	234	632	348	578	2195	339	228	2198	164
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.87	0.87	0.90	0.89	0.83	0.90	0.87	0.87	0.90	0.88	0.88
Lanes:	2.00	2.47	0.53	2.00	3.00	1.00	2.00	3.46	0.54	2.00	3.72	0.28
Final Sat.:	3432	4065	881	3432	5083	1583	3432	5753	889	3432	6244	466
Capacity Analysis Module:												
Vol/Sat:	0.17	0.18	0.18	0.07	0.12	0.22	0.17	0.38	0.38	0.07	0.35	0.35
Crit Moves:	****					****	****				****	
Green/Cycle:	0.16	0.27	0.27	0.10	0.21	0.21	0.16	0.43	0.43	0.08	0.34	0.34
Volume/Cap:	1.03	0.67	0.67	0.67	0.58	1.03	1.03	0.89	0.89	0.89	1.03	1.03
Delay/Veh:	87.9	33.7	33.7	48.3	36.1	95.9	87.3	29.9	29.9	74.2	59.5	59.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	87.9	33.7	33.7	48.3	36.1	95.9	87.3	29.9	29.9	74.2	59.5	59.5
LOS by Move:	F	C	C	D	D	F	F	C	C	E	E	E
HCM2k95thQ:	648	444	444	177	286	615	498	779	779	300	1147	1147

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L - T - R				L - T - R				L - T - R				L - T - R			
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	1	0	2	0 3	0	1	2	0 3	1	0	2	0 3	1	0
Lane Group:	L	RT	RT		L	T	R		L	RT	RT		L	RT	RT	
#LnsInGrps:	2	3	3		2	3	1		2	4	4		2	4	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.97	0.97		xxxx	xxxx	0.85		xxxx	0.98	0.98		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.95	0.95		0.93	0.98	0.83		0.93	0.96	0.96		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	0.91		0.97	0.91	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.87	0.87		0.90	0.89	0.83		0.90	0.87	0.87		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.16	0.27	0.27	0.10	0.21	0.21	0.16	0.43	0.43	0.08	0.34	0.34
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.95	0.95	0.99	0.95	1.00	1.00	0.94	0.94	1.00	1.00	1.00
Q1:	8.1	7.7	7.7	3.2	5.5	9.7	8.3	16.7	16.7	3.2	18.0	18.0
UpstreamVC:	0.00	0.00	0.00	0.63	0.63	0.63	0.90	0.90	0.90	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.73	0.73	0.73	0.31	0.31	0.31	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	0.19	0.31	0.28	0.11	0.20	0.20	1.00	1.00	1.00
Q2:	6.6	1.9	1.9	0.4	0.4	4.2	2.6	1.4	1.4	3.0	10.2	10.2
HCM2KQueue:	14.7	9.6	9.6	3.6	5.9	13.8	10.9	18.1	18.1	6.2	28.2	28.2
70th%Factor:	1.17	1.18	1.18	1.19	1.19	1.17	1.18	1.16	1.16	1.19	1.15	1.15
HCM2k70thQ:	17.2	11.3	11.3	4.2	7.0	16.2	12.8	21.1	21.1	7.4	32.5	32.5
85th%Factor:	1.48	1.52	1.52	1.57	1.55	1.49	1.51	1.46	1.46	1.54	1.42	1.42
HCM2k85thQ:	21.8	14.6	14.6	5.6	9.2	20.6	16.4	26.5	26.5	9.6	40.0	40.0
90th%Factor:	1.59	1.65	1.65	1.73	1.70	1.60	1.63	1.56	1.56	1.69	1.50	1.50
HCM2k90thQ:	23.4	15.8	15.8	6.2	10.1	22.1	17.8	28.3	28.3	10.5	42.3	42.3
95th%Factor:	1.77	1.85	1.85	1.99	1.93	1.78	1.83	1.72	1.72	1.92	1.62	1.62
HCM2k95thQ:	25.9	17.8	17.8	7.1	11.5	24.6	19.9	31.2	31.2	12.0	45.9	45.9
98th%Factor:	2.02	2.18	2.18	2.46	2.33	2.05	2.13	1.95	1.95	2.32	1.81	1.81
HCM2k98thQ:	29.7	20.9	20.9	8.7	13.8	28.3	23.2	35.3	35.3	14.4	51.2	51.2

Cumul + Reduce Proj Alt PM Pk Hr

Future Queue Length Report (feet)

Node	Intersection	Northbound L	-- T	-- R	Southbound L	-- T	-- R	Eastbound L	-- T	-- R	Westbound L	-- T	-- R
#3	[HCM2k95thQ]:	333	1024	380	1286	411	317	499	664	109	248	1395	1395
#4	[HCM2k95thQ]:	589	550	471	460	478	228	193	609	197	389	739	739
#5	[HCM2k95thQ]:	174	734	1164	854	328	111	356	1277	119	816	1387	1387
#6	[HCM2k95thQ]:	92	948	1364	1898	230	23	252	1022	39	1606	383	1322
#7	[HCM2k95thQ]:	212	212	212	161	161	161	126	232	232	130	230	230
#8	[HCM2k95thQ]:	1013	455	174	195	648	1178	1021	1271	1271	267	1281	1281
#9	[HCM2k95thQ]:	0	0	0	653	0	98	292	397	0	0	693	516
#10	[HCM2k95thQ]:	99	0	99	0	0	32	0	63	63	132	48	48
#11	[HCM2k95thQ]:	630	109	46	67	145	542	454	488	632	63	592	28
#12	[HCM2k95thQ]:	3	397	397	629	6	6	15	666	1	126	930	930
#13	[HCM2k95thQ]:	29	28	28	28	24	24	16	14	0	27	16	16
#17	[HCM2k95thQ]:	72	313	664	1016	157	35	177	969	27	787	1845	1845
#18	[HCM2k95thQ]:	568	546	230	158	656	116	154	281	676	382	243	122
#19	[HCM2k95thQ]:	330	334	187	226	304	136	291	380	212	301	322	134
#22	[HCM2k95thQ]:	8	120	202	379	40	40	53	239	239	136	254	438
#24	[HCM2k95thQ]:	447	494	494	79	787	787	87	551	551	273	61	61
#25	[HCM2k95thQ]:	287	804	804	195	762	762	528	323	323	178	442	442
#26	[HCM2k95thQ]:	202	1394	1160	954	407	120	452	586	159	444	308	1359
#27	[HCM2k95thQ]:	648	444	444	177	286	615	498	779	779	300	1147	1147

Cumul + Reduce Proj Alt PM Pk Hr Mitigated

Scenario Report

Scenario:	Cumul + Red Proj Alt PM
Command:	Cumul + Red Proj Alt PM
Volume:	Cumul Proj PM
Geometry:	Cumul Proj
Impact Fee:	Default Impact Fee
Trip Generation:	PM Pk Hr
Trip Distribution:	Cumul No Bridge PM
Paths:	Cumul Proj
Routes:	Default Route
Configuration:	Default Configuration

Cumul + Reduce Proj Alt PM Pk Hr Mitigated

Trip Generation Report

Forecast for PM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	725.00	ElemSchStudent	0.07	0.08	51	58	109	12.2
1	Village West	0.00	Tra Vigne SFDU	0.51	0.30	0	0	0	0.0
1	Village West	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	2.63	2.85	0	0	0	0.0
1	Village West	613.00	Red Proj SFDU	0.53	0.31	325	190	515	57.4
1	Village West	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
1	Village West	0.00	GP Alt MFDU	0.41	0.22	0	0	0	0.0
1	Village West	0.00	Tra V Internal	-64.00	-64.00	0	0	0	0.0
1	Village West	0.00	GP Alt Interna	-76.00	-76.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-106.00	-111.00	0	0	0	0
	Zone 1 Subtotal					376	248	624	69.6
2	Village East	0.00	Tra Vigne SFDU	0.51	0.30	0	0	0	0.0
2	Village East	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
2	Village East	325.00	Red Proj SFDU	0.53	0.31	172	101	273	30.4
2	Village East	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
	Zone 2 Subtotal					172	101	273	30.4
TOTAL						548	349	897	100.0

Cumul + Reduce Proj Alt PM Pk Hr Mitigated

Trip Distribution Report

Percent Of Trips Cumul No Bridge PM

To Gates

Zone	1	2	3	4	5	6	7	8	9	10	11
1	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	2.0
2	2.0	1.0	2.0	1.0	2.0	7.0	5.0	5.0	4.0	2.0	2.0

To Gates

Zone	14	15	16	17	18	19	20	21	22	23
1	1.0	2.0	5.0	1.0	2.0	29.0	10.0	1.0	2.0	14.0
2	1.0	2.0	5.0	1.0	2.0	29.0	10.0	1.0	2.0	14.0

Cumul + Reduce Proj Alt PM Pk Hr Mitigated

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 5 Eight Mile & Lower Sacto Rd	E	71.1	1.128	E	79.5	1.170	+ 8.376 D/V
# 8 Eight Mile Rd & West Ln	E	72.1	1.133	E	77.8	1.149	+ 5.785 D/V

Cumul + Reduce Proj Alt PM Pk Hr Mitigated

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]

Cumul + Reduce Proj Alt PM Pk Hr Mitigated

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.170
Loss Time (sec):	12	Average Delay (sec/veh):	79.5
Optimal Cycle:	180	Level Of Service:	E

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	4 0	1	2 0	4 0	1
Volume Module:	PM Peak Hour											
Base Vol:	183	817	455	610	526	103	199	1916	96	567	1922	498
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	183	817	455	610	526	103	199	1916	96	567	1922	498
Added Vol:	0	0	27	11	0	0	0	60	0	17	38	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	183	817	482	621	526	103	199	1976	96	584	1960	505
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	199	888	524	675	572	112	216	2148	104	635	2130	549
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	199	888	524	675	572	112	216	2148	104	635	2130	549
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	199	888	524	675	572	112	216	2148	104	635	2130	549
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.06	0.25	0.33	0.20	0.16	0.07	0.06	0.32	0.07	0.18	0.31	0.35
Crit Moves:			****	****				****		****		
Green/Cycle:	0.12	0.28	0.28	0.17	0.33	0.33	0.07	0.27	0.27	0.16	0.36	0.36
Volume/Cap:	0.49	0.89	1.17	1.17	0.49	0.21	0.96	1.17	0.24	1.17	0.87	0.96
Delay/Veh:	42.1	44.1	133.9	135.6	26.9	24.2	93.8	119	28.8	137.0	33.1	57.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.1	44.1	133.9	135.6	26.9	24.2	93.8	119	28.8	137.0	33.1	57.8
LOS by Move:	D	D	F	F	C	C	F	F	C	F	C	E
HCM2k95thQ:	174	734	1164	854	328	111	312	1277	119	816	813	903

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt PM Pk Hr Mitigated

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0 1	2	0	2	0 1	2	0	4	0 1	2	0	4	0 1
Lane Group:	L		T	R	L		T	R	L		T	R	L		T	R
#LnsInGrps:	2		2	1	2		2	1	2		4	1	2		4	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Cumul + Reduce Proj Alt PM Pk Hr Mitigated

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.12	0.28	0.28		0.17	0.33	0.33		0.07	0.27	0.27		0.16	0.36	0.36	
ArrivalType:	4				4				4				4			
ProgFactor:	0.97	0.98	1.00		1.00	0.89	0.86		1.00	1.00	0.90		1.00	0.96	0.98	
Q1:	2.6	12.2	14.6		9.7	5.9	1.9		3.1	16.4	2.0		9.1	14.4	14.6	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.9	4.8	14.1		10.5	0.9	0.3		3.4	15.5	0.3		10.0	4.6	6.8	
HCM2KQueue:	3.5	16.9	28.7		20.1	6.9	2.2		6.5	31.9	2.3		19.1	19.0	21.5	
70th%Factor:	1.19	1.17	1.15		1.16	1.18	1.19		1.18	1.15	1.19		1.16	1.16	1.16	
HCM2k70thQ:	4.2	19.7	33.0		23.4	8.1	2.6		7.7	36.5	2.8		22.2	22.1	24.9	
85th%Factor:	1.57	1.47	1.42		1.45	1.54	1.58		1.54	1.40	1.58		1.46	1.46	1.45	
HCM2k85thQ:	5.5	24.9	40.6		29.3	10.6	3.4		10.0	44.7	3.7		27.9	27.8	31.1	
90th%Factor:	1.74	1.57	1.50		1.55	1.68	1.76		1.69	1.48	1.76		1.55	1.55	1.54	
HCM2k90thQ:	6.1	26.6	42.9		31.1	11.6	3.8		11.0	47.2	4.1		29.7	29.6	33.0	
95th%Factor:	1.99	1.73	1.62		1.70	1.91	2.03		1.92	1.60	2.03		1.71	1.71	1.68	
HCM2k95thQ:	7.0	29.4	46.5		34.2	13.1	4.4		12.5	51.1	4.8		32.6	32.5	36.1	
98th%Factor:	2.46	1.97	1.81		1.91	2.29	2.55		2.31	1.79	2.53		1.93	1.93	1.89	
HCM2k98thQ:	8.6	33.4	51.9		38.5	15.7	5.6		15.0	56.9	6.0		36.9	36.8	40.6	

Cumul + Reduce Proj Alt PM Pk Hr Mitigated

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	1.149
Loss Time (sec):	12	Average Delay (sec/veh):	77.8
Optimal Cycle:	180	Level Of Service:	E

Street Name:	West Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	3	0	2 0 1	2	0	2 0 1	2	0	3 1 0	2	0	3 1 0
Volume Module:	PM Peak Hour											
Base Vol:	757	748	108	150	687	445	718	1787	474	159	1781	102
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	757	748	108	150	687	445	718	1787	474	159	1781	102
Added Vol:	27	7	67	17	10	0	0	57	42	57	36	11
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	784	755	175	167	697	445	718	1844	516	216	1817	113
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	852	821	190	182	758	484	780	2004	561	235	1975	123
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	852	821	190	182	758	484	780	2004	561	235	1975	123
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	852	821	190	182	758	484	780	2004	561	235	1975	123
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.86	0.86	0.90	0.88	0.88
Lanes:	3.00	2.00	1.00	2.00	2.00	1.00	2.00	3.13	0.87	2.00	3.77	0.23
Final Sat.:	5147	3538	1583	3432	3538	1583	3432	5121	1433	3432	6323	393
Capacity Analysis Module:												
Vol/Sat:	0.17	0.23	0.12	0.05	0.21	0.31	0.23	0.39	0.39	0.07	0.31	0.31
Crit Moves:	****					****	****				****	
Green/Cycle:	0.14	0.33	0.33	0.08	0.27	0.27	0.20	0.40	0.40	0.07	0.27	0.27
Volume/Cap:	1.15	0.69	0.36	0.69	0.80	1.15	1.15	0.98	0.98	0.98	1.15	1.15
Delay/Veh:	125.0	30.7	25.6	52.9	39.4	127.9	123.5	42.5	42.5	98.3	110	110.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	125.0	30.7	25.6	52.9	39.4	127.9	123.5	42.5	42.5	98.3	110	110.3
LOS by Move:	F	C	C	D	D	F	F	D	D	F	F	F
HCM2k95thQ:	643	491	186	208	592	1069	931	1124	1124	240	1139	1139

Note: Queue reported is the distance per lane in feet.

Cumul + Reduce Proj Alt PM Pk Hr Mitigated

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	3	0	2	0 1	2	0	2	0 1	2	0	3	1 0	2	0	3	1 0
Lane Group:	L		T	R	L		T	R	L		RT	RT	L		RT	RT
#LnsInGrps:	3		2	1	2		2	1	2		4	4	2		4	4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1		xxxx	xxxx	1		xxxx	xxxx	1		xxxx	xxxx	1		xxxx	xxxx
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Hev Veh Adj:	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98
Grade Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Parking Adj:	xxxx		xxxx	1.00	xxxx		xxxx	1.00	xxxx		1.00	1.00	xxxx		1.00	1.00
Bus Stp Adj:	xxxx		xxxx	1.00	xxxx		xxxx	1.00	xxxx		1.00	1.00	xxxx		1.00	1.00
Area Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
RT Adj:	xxxx		xxxx	0.85	xxxx		xxxx	0.85	xxxx		0.97	0.97	xxxx		0.99	0.99
LT Adj:	0.95		xxxx	xxxxx	0.95		xxxx	xxxxx	0.95		xxxx	xxxxx	0.95		xxxx	xxxxx
PedBike Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
HCM Sat Adj:	0.93		0.98	0.83	0.93		0.98	0.83	0.93		0.95	0.95	0.93		0.97	0.97
Usr Sat Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
MLF Sat Adj:	0.97		0.95	1.00	0.97		0.95	1.00	0.97		0.91	0.91	0.97		0.91	0.91
Fnl Sat Adj:	0.90		0.93	0.83	0.90		0.93	0.83	0.90		0.86	0.86	0.90		0.88	0.88
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00

Cumul + Reduce Proj Alt PM Pk Hr Mitigated

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.14	0.33	0.33	0.08	0.27	0.27	0.20	0.40	0.40	0.07	0.27	0.27
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.93	0.87	0.99	0.97	1.00	1.00	0.99	0.99	1.00	1.00	1.00
Q1:	8.1	9.6	3.5	2.5	10.0	13.4	11.2	19.1	19.1	3.4	16.0	16.0
UpstreamVC:	0.44	0.44	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.41	0.41
UpstreamAdj:	0.90	0.90	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.92	0.92	0.92
EarlyArrAdj:	0.29	0.50	0.45	1.00	1.00	1.00	1.00	1.00	1.00	0.19	0.45	0.45
Q2:	6.4	1.1	0.3	1.7	3.3	12.6	11.1	8.5	8.5	1.5	12.0	12.0
HCM2KQueue:	14.5	10.7	3.7	4.2	13.3	26.1	22.2	27.6	27.6	4.9	28.0	28.0
70th%Factor:	1.17	1.18	1.19	1.19	1.17	1.15	1.16	1.15	1.15	1.19	1.15	1.15
HCM2k70thQ:	17.0	12.6	4.5	5.0	15.5	30.0	25.7	31.7	31.7	5.8	32.2	32.2
85th%Factor:	1.48	1.51	1.56	1.56	1.49	1.43	1.44	1.42	1.42	1.55	1.42	1.42
HCM2k85thQ:	21.6	16.2	5.9	6.6	19.8	37.2	32.1	39.2	39.2	7.6	39.7	39.7
90th%Factor:	1.59	1.63	1.73	1.72	1.61	1.51	1.53	1.50	1.50	1.71	1.50	1.50
HCM2k90thQ:	23.2	17.5	6.5	7.3	21.3	39.3	34.1	41.4	41.4	8.4	42.0	42.0
95th%Factor:	1.77	1.83	1.99	1.97	1.79	1.64	1.67	1.63	1.63	1.96	1.63	1.63
HCM2k95thQ:	25.7	19.6	7.4	8.3	23.7	42.8	37.2	44.9	44.9	9.6	45.6	45.6
98th%Factor:	2.03	2.14	2.45	2.42	2.06	1.83	1.88	1.82	1.82	2.39	1.82	1.82
HCM2k98thQ:	29.5	22.9	9.2	10.2	27.3	47.8	41.8	50.2	50.2	11.7	50.9	50.9

Cumul + Reduce Proj Alt PM Pk Hr Mitigated

Future Queue Length Report (feet)

Node	Intersection	Northbound L	-- T	-- R	Southbound L	-- T	-- R	Eastbound L	-- T	-- R	Westbound L	-- T	-- R
#5	[HCM2k95thQ]:	174	734	1164	854	328	111	312	1277	119	816	813	903
#8	[HCM2k95thQ]:	643	491	186	208	592	1069	931	1124	1124	240	1139	1139

EPAP With Bridge Alternative AM Pk Hr

Scenario Report

Scenario:	EPAP + Bridge Alt AM
Command:	EPAP + Bridge Alt AM
Volume:	EPAP Bridge Alt AM
Geometry:	EPAP Proj
Impact Fee:	Default Impact Fee
Trip Generation:	AM Pk Hr
Trip Distribution:	EPAP With Bridge AM
Paths:	EPAP Bridge Alt
Routes:	Default Route
Configuration:	Default Configuration

EPAP With Bridge Alternative AM Pk Hr

Trip Generation Report

Forecast for AM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	750.00	ElemSchStudent	0.25	0.20	188	150	338	24.1
1	Village West	738.00	Tra Vigne SFDU	0.18	0.53	133	391	524	37.3
1	Village West	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	0.60	0.36	0	0	0	0.0
1	Village West	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt MFDU	0.10	0.41	0	0	0	0.0
1	Village West	1.00	Tra V Internal	-6.00	-6.00	-6	-6	-12	-0.9
1	Village West	0.00	GP Alt Interna	-7.00	-7.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-11.00	-7.00	0	0	0	0.0
1	Village West	0.00	Tra Vigne MFDU	0.10	0.40	0	0	0	0.0
	Zone 1 Subtotal					315	535	850	60.5
2	Village East	418.00	Tra Vigne SFDU	0.18	0.53	75	222	297	21.1
2	Village East	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
	Zone 2 Subtotal					75	222	297	21.1
3	Commercial	101.50	Tra V Comm KSF	0.60	0.36	61	37	98	7.0
3	Commercial	1.00	Tra V Pass-By	-9.00	-5.00	-9	-5	-14	-1.0
	Zone 3 Subtotal					52	32	84	6.0
4	Industrial	21.40	Indust KSF	0.15	0.03	3	1	4	0.3
	Zone 4 Subtotal					3	1	4	0.3
5	Hi Dens Res	340.00	Tra Vigne MFDU	0.10	0.40	34	136	170	12.1
	Zone 5 Subtotal					34	136	170	12.1
TOTAL						479	926	1405	100.0

EPAP With Bridge Alternative AM Pk Hr

Trip Distribution Report

Percent Of Trips EPAP With Bridge AM

Zone	To Gates 1	2	5	6	8	9	10	11	13	14	15
1	2.0	1.0	2.0	4.0	5.0	2.0	2.0	2.0	7.0	1.0	3.0
2	2.0	1.0	2.0	4.0	5.0	2.0	2.0	2.0	7.0	1.0	3.0
3	2.0	1.0	2.0	4.0	5.0	2.0	2.0	2.0	7.0	1.0	3.0
4	2.0	1.0	2.0	4.0	5.0	2.0	2.0	2.0	7.0	1.0	3.0
5	2.0	1.0	2.0	4.0	5.0	2.0	2.0	2.0	7.0	1.0	3.0

Zone	To Gates 16	17	18	19	20	22	23	24	26
1	5.0	1.0	2.0	29.0	3.0	7.0	14.0	6.0	2.0
2	5.0	1.0	2.0	29.0	3.0	7.0	14.0	6.0	2.0
3	5.0	1.0	2.0	29.0	3.0	7.0	14.0	6.0	2.0
4	5.0	1.0	2.0	29.0	3.0	7.0	14.0	6.0	2.0
5	5.0	1.0	2.0	29.0	3.0	7.0	14.0	6.0	2.0

EPAP With Bridge Alternative AM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	E	57.2	1.021	E	60.0	1.037	+ 2.829 D/V
# 4 Eight Mile Rd & Davis Rd	C	34.4	0.828	D	36.0	0.857	+ 1.587 D/V
# 5 Eight Mile & Lower Sacto Rd	D	40.9	0.920	D	49.2	0.993	+ 8.269 D/V
# 6 West Lane & Armstrong Road	C	32.2	0.632	C	32.2	0.645	-0.064 D/V
# 7 West Lane & Ham Lane	A	8.8	0.271	A	9.1	0.277	+ 0.316 D/V
# 8 Eight Mile Rd & West Ln	D	43.2	0.915	D	53.6	1.003	+10.394 D/V
# 9 Eight Mile Road & Ham Lane	B	10.9	0.049	B	11.9	0.063	+ 1.017 D/V
# 10 Eight Mile & Leach Rd/St G	A	1.3	0.317	B	11.8	0.496	+10.497 D/V
# 11 Eight Mile & MickeGrove/Holman	A	3.0	0.282	A	9.6	0.382	+ 6.576 D/V
# 14 SR99 W Front & SB Ramps 8 Mile	B	11.3	0.332	B	11.9	0.343	+ 0.564 D/V
# 15 SR99 E Front & NB Ramps 8 Mile	C	20.5	0.377	D	27.2	0.555	+ 6.778 D/V
# 16 West & L.C.MarkTaylor/Marlette	A	6.0	0.271	C	21.1	0.488	+15.060 D/V
# 17 Holman & Lt Col Mark Taylor	C	29.9	0.299	C	31.5	0.331	+ 1.619 D/V
# 18 Morada Lane & West Lane	C	27.1	0.490	C	28.1	0.557	+ 0.993 D/V
# 19 Morada Lane & Holman Road	C	34.8	0.576	D	35.2	0.605	+ 0.401 D/V
# 20 SR99 W Front & SB Ramps Morada	D	29.2	0.701	D	31.2	0.721	+ 2.014 D/V
# 21 SR99 E Front & NB Ramps Morada	F	69.2	1.054	F	66.4	1.054	-2.755 D/V
# 24 West Ln & West Ln Frontage Rd	C	20.9	0.600	C	20.5	0.697	-0.416 D/V
# 25 West Lane & Knickerbocker Dr	C	25.2	0.476	C	23.2	0.542	-1.964 D/V
# 26 West Lane & Hammer Lane	C	32.8	0.551	C	32.6	0.600	-0.185 D/V
# 27 Hammer Lane & Holman Road	D	37.6	0.872	D	38.5	0.887	+ 0.869 D/V
# 51 Eight Mile & Commercial DW #1	A	0.0	0.000	B	12.0	0.004	+11.969 D/V
# 52 Eight Mile & Commercial DW #2	A	0.0	0.000	B	10.5	0.011	+10.501 D/V
# 53 Eight Mile Road & Road C	A	0.3	0.271	B	12.9	0.464	+12.581 D/V

EPAP With Bridge Alternative AM Pk Hr

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 54 West Lane & Commercial DW #3	A	0.0	0.000	B	10.2	0.006	+10.221 D/V
# 55 West Lane & Commercial DW #4	A	0.0	0.000	B	10.2	0.002	+10.212 D/V
# 56 West Lane & Road A	A	0.0	0.000	B	10.9	0.083	+10.885 D/V
# 57 Eight Mile & Hi Dens Res DW #1	A	0.0	0.000	B	14.1	0.157	+14.059 D/V
# 58 Eight Mile & Hi Dens Res DW #2	A	0.0	0.000	B	14.5	0.164	+14.521 D/V
# 60 Eight Mile & Industrial DW #1	A	0.0	0.000	B	13.0	0.002	+13.001 D/V
# 61 Eight Mile & Industrial DW #2	A	0.0	0.000	B	13.0	0.002	+12.994 D/V

EPAP With Bridge Alternative AM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 9 Eight Mile Road & Ham Lane	??? / ???	No / No
# 14 SR99 W Front & SB Ramps 8 Mile	??? / ???	No / No
# 15 SR99 E Front & NB Ramps 8 Mile	??? / ???	No / No
# 20 SR99 W Front & SB Ramps Morada	??? / ???	No / No
# 21 SR99 E Front & NB Ramps Morada	??? / ???	Yes / Yes
# 51 Eight Mile & Commercial DW #1	??? / ???	No / No
# 52 Eight Mile & Commercial DW #2	??? / ???	No / No
# 54 West Lane & Commercial DW #3	??? / ???	No / No
# 55 West Lane & Commercial DW #4	??? / ???	No / No
# 56 West Lane & Road A	??? / ???	No / No
# 57 Eight Mile & Hi Dens Res DW #1	??? / ???	No / No
# 58 Eight Mile & Hi Dens Res DW #2	??? / ???	No / No
# 60 Eight Mile & Industrial DW #1	??? / ???	No / No
# 61 Eight Mile & Industrial DW #2	??? / ???	No / No

EPAP With Bridge Alternative AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #9 Eight Mile Road & Ham Lane

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	1	1	0
Initial Vol:	0		0		0	0		0		32	0	1078			0	0	801			35
ApproachDel:	xxxxxx					11.9					xxxxxx					xxxxxx				

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=32]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1946]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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EPAP With Bridge Alternative AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #9 Eight Mile Road & Ham Lane

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	1	1	0
Initial Vol:	0		0		0	0		0		32	0	1078			0	0	801			35

Major Street Volume: 1914
Minor Approach Volume: 32
Minor Approach Volume Threshold: 61 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
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EPAP With Bridge Alternative AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	103			1	442	106			0	0		0		0	14		0	297	
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					11.9				

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.0]
   FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=311]
   SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=963]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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EPAP With Bridge Alternative AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	103			1	442	106			0	0		0		0	14		0	297	

Major Street Volume: 652
Minor Approach Volume: 311
Minor Approach Volume Threshold: 427

SIGNAL WARRANT DISCLAIMER
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EPAP With Bridge Alternative AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	152	197			0		0	301	233		141		0		50		0		0	0
ApproachDel:	xxxxxx					xxxxxx					27.2					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.4]
   FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=191]
   SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1074]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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EPAP With Bridge Alternative AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	152	197			0		0	301	233		141		0		50		0		0	0

Major Street Volume: 883
Minor Approach Volume: 191
Minor Approach Volume Threshold: 428

SIGNAL WARRANT DISCLAIMER
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EPAP With Bridge Alternative AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #20 SR99 W Front & SB Ramps Morada

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	62	825			31	50		0		0	0		0		282	0		19	
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					31.2				

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=2.6]
   FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=301]
   SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1269]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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EPAP With Bridge Alternative AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #20 SR99 W Front & SB Ramps Morada

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	62	825			31	50		0		0	0		0		282	0		19	

Major Street Volume: 968
Minor Approach Volume: 301
Minor Approach Volume Threshold: 303

SIGNAL WARRANT DISCLAIMER
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EPAP With Bridge Alternative AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #21 SR99 E Front & NB Ramps Morada

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0
Initial Vol:	230	451		0		0	511		2		95		0	236		0		0		0
ApproachDel:	xxxxxx					xxxxxx					66.4					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=6.1]
   SUCCEED - Vehicle-hours >= 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=331]
   SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1525]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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EPAP With Bridge Alternative AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #21 SR99 E Front & NB Ramps Morada

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0
Initial Vol:	230	451		0		0	511		2		95		0	236		0		0		0

Major Street Volume: 1194
Minor Approach Volume: 331
Minor Approach Volume Threshold: 237

SIGNAL WARRANT DISCLAIMER
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EPAP With Bridge Alternative AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #51 Eight Mile & Commercial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	2	0	1	0	0	2	0	0
Initial Vol:	0		0		2	0		0		0	0		914		8	0		863		0
ApproachDel:	12.0					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=2]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1787]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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EPAP With Bridge Alternative AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #51 Eight Mile & Commercial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	2	0	1	0	0	2	0	0
Initial Vol:	0		0		2	0		0		0	0		914		8	0		863		0

Major Street Volume: 1785
Minor Approach Volume: 2
Minor Approach Volume Threshold: 85 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
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EPAP With Bridge Alternative AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #52 Eight Mile & Commercial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	2	1	0	0	0	2	0	0
Initial Vol:	0		0		7	0		0		0	0		909		8	0		863		0
ApproachDel:	10.5					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=7]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1787]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP With Bridge Alternative AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #52 Eight Mile & Commercial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	2	1	0	0	0	2	0	0
Initial Vol:	0		0		7	0		0		0	0		909		8	0		863		0

Major Street Volume: 1780
Minor Approach Volume: 7
Minor Approach Volume Threshold: 86 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP With Bridge Alternative AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #54 West Lane & Commercial DW #3

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	816			12	0	1152			0	0		0		0	0		0		4
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					10.2				

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=4]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1984]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP With Bridge Alternative AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #54 West Lane & Commercial DW #3

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	816			12	0	1152			0	0		0		0	0		0		4

Major Street Volume: 1980
Minor Approach Volume: 4
Minor Approach Volume Threshold: 49 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP With Bridge Alternative AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #55 West Lane & Commercial DW #4

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	826			9	0	1152			0	0		0		0	0		0		1
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					10.2				

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=1]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1988]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP With Bridge Alternative AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #55 West Lane & Commercial DW #4

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	826			9	0	1152			0	0		0		0	0		0		1

Major Street Volume: 1987
Minor Approach Volume: 1
Minor Approach Volume Threshold: 48 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP With Bridge Alternative AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #56 West Lane & Road A

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	784			82	0	1152			0	0		0		0	0		0	0	51
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					10.9				

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=51]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2069]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP With Bridge Alternative AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #56 West Lane & Road A

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	784			82	0	1152			0	0		0		0	0		0	0	51

Major Street Volume: 2018
Minor Approach Volume: 51
Minor Approach Volume Threshold: 43 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP With Bridge Alternative AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #57 Eight Mile & Hi Dens Res DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		68	0		0		0	0		1015		17	0		853		0
ApproachDel:	14.1					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=68]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1953]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP With Bridge Alternative AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #57 Eight Mile & Hi Dens Res DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		68	0		0		0	0		1015		17	0		853		0

Major Street Volume: 1885
Minor Approach Volume: 68
Minor Approach Volume Threshold: 66 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP With Bridge Alternative AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #58 Eight Mile & Hi Dens Res DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		68	0		0		0	0		1066		17	0		853		0
ApproachDel:	14.5					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=68]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2004]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP With Bridge Alternative AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #58 Eight Mile & Hi Dens Res DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		68	0		0		0	0		1066		17	0		853		0

Major Street Volume: 1936
Minor Approach Volume: 68
Minor Approach Volume Threshold: 57 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
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EPAP With Bridge Alternative AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #60 Eight Mile & Industrial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		1	0		0		0	0		1083		2	0		807		0
ApproachDel:	13.0					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=1]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1893]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP With Bridge Alternative AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #60 Eight Mile & Industrial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		1	0		0		0	0		1083		2	0		807		0

Major Street Volume: 1892
Minor Approach Volume: 1
Minor Approach Volume Threshold: 65 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP With Bridge Alternative AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #61 Eight Mile & Industrial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		1	0		0		0	0		1082		2	0		807		0
ApproachDel:	13.0					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=1]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1892]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP With Bridge Alternative AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #61 Eight Mile & Industrial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		1	0		0		0	0		1082		2	0		807		0

Major Street Volume: 1891
Minor Approach Volume: 1
Minor Approach Volume Threshold: 65 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.037
Loss Time (sec):	12	Average Delay (sec/veh):	60.0
Optimal Cycle:	180	Level Of Service:	E

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1 0 1	1	0	0 1 0	1	0	2 0 1	1	0	1 1 0
Volume Module:	AM Peak Hour											
Base Vol:	836	46	103	5	26	229	169	983	326	80	1148	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	836	46	103	5	26	229	169	983	326	80	1148	14
Added Vol:	0	0	5	0	0	0	0	24	0	9	46	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	836	46	108	5	26	229	169	1007	326	89	1194	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	909	50	117	5	28	249	184	1095	354	97	1298	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	909	50	117	5	28	249	184	1095	354	97	1298	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	909	50	117	5	28	249	184	1095	354	97	1298	15
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.85	0.85	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	2.00	1.00	1.00	1.00	0.10	0.90	1.00	2.00	1.00	1.00	1.98	0.02
Final Sat.:	3432	1862	1583	1769	164	1446	1769	3538	1583	1769	3490	41
Capacity Analysis Module:												
Vol/Sat:	0.26	0.03	0.07	0.00	0.17	0.17	0.10	0.31	0.22	0.05	0.37	0.37
Crit Moves:	****				****		****				****	
Green/Cycle:	0.26	0.40	0.40	0.02	0.17	0.17	0.10	0.39	0.39	0.07	0.36	0.36
Volume/Cap:	1.04	0.07	0.18	0.18	1.04	1.04	1.04	0.79	0.57	0.79	1.04	1.04
Delay/Veh:	77.6	18.3	19.3	51.5	107	106.7	122.7	30.2	25.3	74.9	67.5	67.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	77.6	18.3	19.3	51.5	107	106.7	122.7	30.2	25.3	74.9	67.5	67.5
LOS by Move:	E	B	B	D	F	F	F	C	C	E	E	E
HCM2k95thQ:	914	38	96	19	631	631	370	658	350	158	1106	1106

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	2	0	1	0	1		1	0	0	1	0		1	0	2	0	1		1	0	1	1	0	
Lane Group:	L		T		R		L		RT		RT		L		T		R		L		RT		RT	
#LnsInGrps:	2		1		1		1		1		1		1		2		1		1		2		2	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:			8						8						8						8			
% Hev Veh:			2						2						2						2			
Grade:			0%						0%						0%						0%			
Parking/Hr:			No						No						No						No			
Bus Stp/Hr:			0						0						0						0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0						0						0						0			
ExclusiveRT:			Include						Include						Include						Include			
% RT Prtct:			0						0						0						0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx	xxxx				1	xxxx	xxxx				1	xxxx	xxxx				1	xxxx	xxxx			
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Hev Veh Adj:	0.98	0.98	0.98				0.98	0.98	0.98				0.98	0.98	0.98				0.98	0.98	0.98			
Grade Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Parking Adj:	xxxx	xxxx	1.00				xxxx	1.00	1.00				xxxx	xxxx	1.00				xxxx	1.00	1.00			
Bus Stp Adj:	xxxx	xxxx	1.00				xxxx	1.00	1.00				xxxx	xxxx	1.00				xxxx	1.00	1.00			
Area Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
RT Adj:	xxxx	xxxx	0.85				xxxx	0.87	0.87				xxxx	xxxx	0.85				xxxx	1.00	1.00			
LT Adj:	0.95	xxxx	xxxxx				0.95	xxxx	xxxxx				0.95	xxxx	xxxxx				0.95	xxxx	xxxxx			
PedBike Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
HCM Sat Adj:	0.93	0.98	0.83				0.93	0.85	0.85				0.93	0.98	0.83				0.93	0.98	0.98			
Usr Sat Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
MLF Sat Adj:	0.97	1.00	1.00				1.00	1.00	1.00				1.00	0.95	1.00				1.00	0.95	0.95			
Fnl Sat Adj:	0.90	0.98	0.83				0.93	0.85	0.85				0.93	0.93	0.83				0.93	0.93	0.93			
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.26	0.40	0.40	0.02	0.17	0.17	0.10	0.39	0.39	0.07	0.36	0.36
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.78	0.80	1.00	1.00	1.00	1.00	0.93	0.87	0.99	1.00	1.00
Q1:	13.0	0.7	1.7	0.1	7.7	7.7	5.1	13.1	6.7	2.6	19.2	19.2
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.48	0.48	0.48	0.61	0.61	0.61
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.87	0.87	0.76	0.76	0.76
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.23	0.53	0.48	0.16	0.44	0.44
Q2:	8.8	0.1	0.2	0.2	6.5	6.5	2.7	1.8	0.6	0.5	7.9	7.9
HCM2KQueue:	21.8	0.7	1.9	0.4	14.2	14.2	7.8	14.9	7.4	3.2	27.1	27.1
70th%Factor:	1.16	1.20	1.20	1.20	1.17	1.17	1.18	1.17	1.18	1.19	1.15	1.15
HCM2k70thQ:	25.2	0.9	2.3	0.4	16.7	16.7	9.3	17.5	8.7	3.8	31.2	31.2
85th%Factor:	1.45	1.59	1.58	1.60	1.49	1.49	1.53	1.48	1.53	1.57	1.42	1.42
HCM2k85thQ:	31.5	1.2	3.0	0.6	21.2	21.2	12.0	22.1	11.3	5.0	38.5	38.5
90th%Factor:	1.53	1.79	1.76	1.79	1.60	1.60	1.67	1.59	1.68	1.74	1.50	1.50
HCM2k90thQ:	33.4	1.3	3.3	0.6	22.7	22.7	13.1	23.7	12.4	5.5	40.7	40.7
95th%Factor:	1.68	2.08	2.04	2.09	1.77	1.77	1.89	1.76	1.90	2.00	1.63	1.63
HCM2k95thQ:	36.6	1.5	3.9	0.7	25.2	25.2	14.8	26.3	14.0	6.3	44.2	44.2
98th%Factor:	1.89	2.65	2.56	2.67	2.03	2.03	2.25	2.02	2.27	2.48	1.82	1.82
HCM2k98thQ:	41.1	1.9	4.9	1.0	29.0	29.0	17.6	30.1	16.7	7.8	49.4	49.4

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec): 100 Critical Vol./Cap.(X): 0.857
Loss Time (sec): 12 Average Delay (sec/veh): 36.0
Optimal Cycle: 93 Level Of Service: D

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1 0 1	1	0	0 1 0	1	0	1 1 0	1	0	2 0 1
Volume Module:	AM Peak Hour											
Base Vol:	251	120	150	6	161	68	111	957	163	134	780	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	251	120	150	6	161	68	111	957	163	134	780	6
Added Vol:	0	0	14	0	0	0	0	29	0	28	56	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	251	120	164	6	161	68	111	986	163	162	836	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	273	130	178	7	175	74	121	1072	177	176	909	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	273	130	178	7	175	74	121	1072	177	176	909	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	273	130	178	7	175	74	121	1072	177	176	909	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.94	0.94	0.93	0.91	0.91	0.93	0.93	0.83
Lanes:	1.00	1.00	1.00	1.00	0.70	0.30	1.00	1.72	0.28	1.00	2.00	1.00
Final Sat.:	1769	1862	1583	1769	1250	528	1769	2972	491	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.15	0.07	0.11	0.00	0.14	0.14	0.07	0.36	0.36	0.10	0.26	0.00
Crit Moves:	****				****			****		****		
Green/Cycle:	0.18	0.33	0.33	0.01	0.16	0.16	0.11	0.42	0.42	0.12	0.42	0.42
Volume/Cap:	0.86	0.21	0.34	0.34	0.86	0.86	0.61	0.86	0.86	0.86	0.61	0.01
Delay/Veh:	59.7	24.1	25.5	59.3	62.2	62.2	47.5	31.5	31.5	71.6	23.0	16.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	59.7	24.1	25.5	59.3	62.2	62.2	47.5	31.5	31.5	71.6	23.0	16.7
LOS by Move:	E	C	C	E	E	E	D	C	C	E	C	B
HCM2k95thQ:	498	126	186	31	470	470	167	742	742	376	472	5

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	1	0 1	1	0	0	1 0	1	0	1	1 0	1	0	2	0 1
Lane Group:	L		T	R	L		RT	RT	L		RT	RT	L		T	R
#LnsInGrps:	1		1	1	1		1	1	1		2	2	1		2	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.96	0.96		xxxx	0.98	0.98		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.94	0.94		0.93	0.96	0.96		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	0.95		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	0.98	0.83		0.93	0.94	0.94		0.93	0.91	0.91		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.18	0.33	0.33		0.01	0.16	0.16		0.11	0.42	0.42		0.12	0.42	0.42	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.86	0.87		1.00	0.99	0.99		0.98	0.93	0.93		0.99	0.85	0.76	
Q1:	7.3	2.2	3.2		0.2	6.7	6.7		3.1	15.4	15.4		4.8	8.8	0.1	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.79	0.79	0.79		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.51	0.51	0.51		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.14	0.32	0.32		1.00	1.00	1.00	
Q2:	3.7	0.3	0.5		0.4	3.6	3.6		0.2	1.7	1.7		3.2	1.5	0.0	
HCM2KQueue:	10.9	2.5	3.8		0.6	10.2	10.2		3.3	17.2	17.2		8.0	10.3	0.1	
70th%Factor:	1.18	1.19	1.19		1.20	1.18	1.18		1.19	1.17	1.17		1.18	1.18	1.20	
HCM2k70thQ:	12.8	3.0	4.5		0.7	12.0	12.0		4.0	20.0	20.0		9.4	12.1	0.1	
85th%Factor:	1.51	1.58	1.56		1.59	1.51	1.51		1.57	1.47	1.47		1.53	1.51	1.60	
HCM2k85thQ:	16.5	3.9	5.9		0.9	15.5	15.5		5.2	25.2	25.2		12.2	15.5	0.1	
90th%Factor:	1.63	1.75	1.73		1.79	1.64	1.64		1.74	1.57	1.57		1.67	1.64	1.80	
HCM2k90thQ:	17.8	4.4	6.5		1.1	16.7	16.7		5.8	26.9	26.9		13.3	16.8	0.2	
95th%Factor:	1.83	2.02	1.99		2.08	1.84	1.84		2.00	1.73	1.73		1.89	1.84	2.10	
HCM2k95thQ:	19.9	5.0	7.5		1.2	18.8	18.8		6.7	29.7	29.7		15.0	18.9	0.2	
98th%Factor:	2.13	2.53	2.45		2.66	2.16	2.16		2.47	1.97	1.97		2.24	2.15	2.69	
HCM2k98thQ:	23.3	6.3	9.2		1.6	22.0	22.0		8.3	33.7	33.7		17.9	22.1	0.2	

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.993
Loss Time (sec):	12	Average Delay (sec/veh):	49.2
Optimal Cycle:	180	Level Of Service:	D

Street Name:	Lower Sacramento Road							Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Y+R:	4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0		
Lanes:	2	0	1	0	1	1	0	1	0	1	1	0	2	0	1	1	0	2	0	1
Volume Module:	AM Peak Hour																			
Base Vol:	44	268	393			57	412	103			86	1020	21			311	814	61		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	44	268	393			57	412	103			86	1020	21			311	814	61		
Added Vol:	0	0	24			10	0	0			0	43	0			46	83	19		
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0		
Initial Fut:	44	268	417			67	412	103			86	1063	21			357	897	80		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92		
PHF Volume:	48	291	453			73	448	112			93	1155	23			388	975	87		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	48	291	453			73	448	112			93	1155	23			388	975	87		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
FinalVolume:	48	291	453			73	448	112			93	1155	23			388	975	87		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900		
Adjustment:	0.90	0.98	0.83			0.93	0.98	0.83			0.93	0.93	0.83			0.93	0.93	0.83		
Lanes:	2.00	1.00	1.00			1.00	1.00	1.00			2.00	1.00	1.00			1.00	2.00	1.00		
Final Sat.:	3432	1862	1583			1769	1862	1583			1769	3538	1583			1769	3538	1583		
Capacity Analysis Module:																				
Vol/Sat:	0.01	0.16	0.29			0.04	0.24	0.07			0.05	0.33	0.01			0.22	0.28	0.05		
Crit Moves:			****			****						****				****				
Green/Cycle:	0.02	0.29	0.29			0.04	0.31	0.31			0.09	0.33	0.33			0.22	0.46	0.46		
Volume/Cap:	0.77	0.54	0.99			0.99	0.77	0.23			0.60	0.99	0.04			0.99	0.60	0.12		
Delay/Veh:	92.7	31.1	75.6			150.3	37.5	25.7			50.0	58.0	22.9			82.3	20.6	15.4		
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
AdjDel/Veh:	92.7	31.1	75.6			150.3	37.5	25.7			50.0	58.0	22.9			82.3	20.6	15.4		
LOS by Move:	F		C			E		F			D		C			D		E		
HCM2k95thQ:	104	353	843			245	605	116			186	1040	21			757	465	59		

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes:	2	0	1	0	1	1	0	1	0	1	1	0	2	0	1	1	0	2	0	1
Lane Group:	L		T		R	L		T		R	L		T		R	L		T		R
#LnsInGrps:	2		1		1	1		1		1	1		2		1	1		2		1
HCM Ops Adjusted Lane Utilization Module:																				
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12
CrsswalkWid:	8					8					8					8				
% Hev Veh:	2					2					2					2				
Grade:	0%					0%					0%					0%				
Parking/Hr:	No					No					No					No				
Bus Stp/Hr:	0					0					0					0				
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																			
Cnft Ped/Hr:	0					0					0					0				
ExclusiveRT:	Include					Include					Include					Include				
% RT Prtct:	0					0					0					0				
HCM Ops f(lt) Adj Case Module:																				
f(lt) Case:	1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx		
HCM Ops Saturation Adj Module:																				
Ln Wid Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Hev Veh Adj:	0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98		
Grade Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Parking Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00		
Bus Stp Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00		
Area Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
RT Adj:	xxxx	xxxx	0.85			xxxx	xxxx	0.85			xxxx	xxxx	0.85			xxxx	xxxx	0.85		
LT Adj:	0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx		
PedBike Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
HCM Sat Adj:	0.93	0.98	0.83			0.93	0.98	0.83			0.93	0.98	0.83			0.93	0.98	0.83		
Usr Sat Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Sat Adj:	0.97	1.00	1.00			1.00	1.00	1.00			1.00	0.95	1.00			1.00	0.95	1.00		
Fnl Sat Adj:	0.90	0.98	0.83			0.93	0.98	0.83			0.93	0.93	0.83			0.93	0.93	0.83		
Delay Adjustment Factor Module:																				
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																			
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >																			
DelAdjFctr:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.02	0.29	0.29	0.04	0.31	0.31	0.09	0.33	0.33	0.22	0.46	0.46
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.92	1.00	1.00	0.95	0.87	0.99	1.00	0.84	1.00	0.82	0.73
Q1:	0.7	6.3	12.5	2.0	10.7	2.0	2.5	16.8	0.4	10.7	8.7	1.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	1.4	1.1	7.3	3.0	2.9	0.3	1.3	8.4	0.0	6.8	1.4	0.1
HCM2KQueue:	2.0	7.4	19.9	5.0	13.6	2.3	3.7	25.2	0.4	17.5	10.1	1.1
70th%Factor:	1.20	1.18	1.16	1.19	1.17	1.19	1.19	1.15	1.20	1.16	1.18	1.20
HCM2k70thQ:	2.4	8.8	23.0	5.9	15.9	2.7	4.5	29.1	0.5	20.4	11.9	1.4
85th%Factor:	1.58	1.53	1.45	1.55	1.49	1.58	1.56	1.43	1.60	1.47	1.51	1.59
HCM2k85thQ:	3.2	11.4	28.9	7.8	20.2	3.6	5.9	36.1	0.7	25.7	15.3	1.8
90th%Factor:	1.76	1.68	1.55	1.71	1.60	1.76	1.73	1.51	1.79	1.57	1.64	1.78
HCM2k90thQ:	3.6	12.5	30.7	8.6	21.8	4.0	6.5	38.2	0.7	27.5	16.6	2.0
95th%Factor:	2.04	1.90	1.70	1.95	1.78	2.03	1.99	1.65	2.09	1.73	1.84	2.06
HCM2k95thQ:	4.1	14.1	33.7	9.8	24.2	4.7	7.4	41.6	0.9	30.3	18.6	2.3
98th%Factor:	2.55	2.26	1.92	2.38	2.05	2.54	2.45	1.84	2.67	1.96	2.16	2.62
HCM2k98thQ:	5.2	16.8	38.1	11.9	27.8	5.8	9.2	46.5	1.1	34.4	21.8	3.0

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.645
Loss Time (sec): 12 Average Delay (sec/veh): 32.2
Optimal Cycle: 53 Level Of Service: C

Street Name:	West Lane						Armstrong Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	1 0	1	0 1	1 0	0	0 1!	0 0	0	0 1!	0 0
Volume Module:AM Peak Hour												
Base Vol:	4	387	75	201	526	33	46	172	5	59	96	95
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	387	75	201	526	33	46	172	5	59	96	95
Added Vol:	0	37	0	0	19	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	424	75	201	545	33	46	172	5	59	96	95
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	4	461	82	218	592	36	50	187	5	64	104	103
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	461	82	218	592	36	50	187	5	64	104	103
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	461	82	218	592	36	50	187	5	64	104	103
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.91	0.91	0.93	0.92	0.92	0.97	0.97	0.97	0.92	0.92	0.92
Lanes:	1.00	1.70	0.30	1.00	1.89	0.11	0.21	0.77	0.02	0.24	0.38	0.38
Final Sat.:	1769	2940	520	1769	3306	200	379	1418	41	412	670	663
Capacity Analysis Module:												
Vol/Sat:	0.00	0.16	0.16	0.12	0.18	0.18	0.13	0.13	0.13	0.16	0.16	0.16
Crit Moves:		****		****				****				****
Green/Cycle:	0.01	0.24	0.24	0.19	0.43	0.43	0.20	0.20	0.20	0.24	0.24	0.24
Volume/Cap:	0.42	0.65	0.65	0.65	0.42	0.42	0.65	0.65	0.65	0.65	0.65	0.65
Delay/Veh:	74.5	35.7	35.7	41.6	20.1	20.1	40.3	40.3	40.3	37.5	37.5	37.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	74.5	35.7	35.7	41.6	20.1	20.1	40.3	40.3	40.3	37.5	37.5	37.5
LOS by Move:	E	D	D	D	C	C	D	D	D	D	D	D
HCM2k95thQ:	30	396	396	336	284	284	360	360	360	383	383	383

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 1	1	0	1	0 1	1	0	0	0 1!	0	0	0	0 1!	0	0
Lane Group:	L	RT		RT	L	RT		RT	LTR	LTR		LTR	LTR	LTR		LTR
#LnsInGrps:	1	2		2	1	2		2	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		4	4		4	4	4		4
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98		0.98	0.98	0.98		0.98
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
RT Adj:	xxxx	0.98	0.98		xxxx	0.99	0.99		1.00	1.00		1.00	0.95	0.95		0.95
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.99	0.99		0.99	0.99	0.99		0.99
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
HCM Sat Adj:	0.93	0.96	0.96		0.93	0.97	0.97		0.97	0.97		0.97	0.92	0.92		0.92
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
MLF Sat Adj:	1.00	0.95	0.95		1.00	0.95	0.95		1.00	1.00		1.00	1.00	1.00		1.00
Fnl Sat Adj:	0.93	0.91	0.91		0.93	0.92	0.92		0.97	0.97		0.97	0.92	0.92		0.92
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.01	0.24	0.24		0.19	0.43	0.43		0.20	0.20	0.20		0.24	0.24	0.24	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.95	0.95		0.97	0.81	0.81		0.96	0.96	0.96		0.95	0.95	0.95	
Q1:		0.1	6.8	6.8		5.4	5.2	5.2		5.9	5.9	5.9		6.5	6.5	6.5
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:		0.5	1.7	1.7		1.6	0.7	0.7		1.7	1.7	1.7		1.7	1.7	1.7
HCM2KQueue:		0.6	8.5	8.5		7.1	5.9	5.9		7.6	7.6	7.6		8.1	8.1	8.1
70th%Factor:	1.20	1.18	1.18		1.18	1.19	1.19		1.18	1.18	1.18		1.18	1.18	1.18	
HCM2k70thQ:		0.7	10.0	10.0		8.3	7.0	7.0		9.0	9.0	9.0		9.6	9.6	9.6
85th%Factor:	1.59	1.53	1.53		1.54	1.55	1.55		1.53	1.53	1.53		1.53	1.53	1.53	
HCM2k85thQ:		0.9	12.9	12.9		10.8	9.1	9.1		11.6	11.6	11.6		12.4	12.4	12.4
90th%Factor:	1.79	1.66	1.66		1.68	1.70	1.70		1.67	1.67	1.67		1.67	1.67	1.67	
HCM2k90thQ:		1.0	14.1	14.1		11.9	10.0	10.0		12.7	12.7	12.7		13.5	13.5	13.5
95th%Factor:	2.08	1.88	1.88		1.91	1.93	1.93		1.89	1.89	1.89		1.88	1.88	1.88	
HCM2k95thQ:		1.2	15.9	15.9		13.4	11.4	11.4		14.4	14.4	14.4		15.3	15.3	15.3
98th%Factor:	2.66	2.22	2.22		2.28	2.34	2.34		2.26	2.26	2.26		2.23	2.23	2.23	
HCM2k98thQ:		1.5	18.8	18.8		16.1	13.7	13.7		17.2	17.2	17.2		18.2	18.2	18.2

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.277
Loss Time (sec): 9 | Average Delay (sec/veh): 9.1
Optimal Cycle: 25 | Level Of Service: A

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0	1	1	0
Volume Module:AM Peak Hour												
Base Vol:	1	3	30	31	6	35	4	461	0	14	609	17
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	3	30	31	6	35	4	461	0	14	609	17
Added Vol:	0	0	13	0	0	0	0	24	0	3	16	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	3	43	31	6	35	4	485	0	17	625	17
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	1	3	47	34	7	38	4	527	0	18	679	18
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	3	47	34	7	38	4	527	0	18	679	18
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	3	47	34	7	38	4	527	0	18	679	18
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.86	0.86	0.86	0.80	0.80	0.80	0.93	0.93	0.95	0.93	0.93	0.93
Lanes:	0.02	0.06	0.92	0.43	0.08	0.49	1.00	2.00	0.00	1.00	1.95	0.05
Final Sat.:	35	104	1488	654	127	738	1769	3538	0	1769	3430	93
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.03	0.05	0.05	0.05	0.00	0.15	0.00	0.01	0.20	0.20
Crit Moves:					****		****				****	
Green/Cycle:	0.19	0.19	0.19	0.19	0.19	0.19	0.01	0.68	0.00	0.05	0.72	0.72
Volume/Cap:	0.17	0.17	0.17	0.28	0.28	0.28	0.28	0.22	0.00	0.22	0.28	0.28
Delay/Veh:	34.5	34.5	34.5	35.5	35.5	35.5	58.6	6.2	0.0	47.2	5.1	5.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.5	34.5	34.5	35.5	35.5	35.5	58.6	6.2	0.0	47.2	5.1	5.1
LOS by Move:	C	C	C	D	D	D	E	A	A	D	A	A
HCM2k95thQ:	68	68	68	108	108	108	23	63	0	39	53	53

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	0	0	1! 0	0			0	0	1! 0	0			1	0	1	1	0		1	0	1	1	0	
Lane Group:	LTR		LTR		LTR		LTR		LTR		LTR		L		RT		RT		L		RT		RT	
#LnsInGrps:	1		1		1		1		1		1		1		2		2		1		2		2	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:			8						8						8						8			
% Hev Veh:			2						2						2						2			
Grade:			0%						0%						0%						0%			
Parking/Hr:			No						No						No						No			
Bus Stp/Hr:			0						0						0						0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0						0						0						0			
ExclusiveRT:			Include						Include						Include						Include			
% RT Prtct:			0						0						0						0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	5		5		5		5		5		5		1	xxxx		xxxx			1	xxxx		xxxx		
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	xxxxx	1.00	1.00	1.00												
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	xxxxx	0.98	0.98	0.98												
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	xxxxx	1.00	1.00	1.00												
Parking Adj:	1.00	1.00	1.00	1.00	1.00	1.00	xxxx	1.00	xxxxx	xxxx	1.00	1.00												
Bus Stp Adj:	1.00	1.00	1.00	1.00	1.00	1.00	xxxx	1.00	xxxxx	xxxx	1.00	1.00												
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	xxxxx	1.00	1.00	1.00												
RT Adj:	0.88	0.88	0.88	0.93	0.93	0.93	xxxx	xxxx	xxxxx	xxxx	1.00	1.00												
LT Adj:	1.00	1.00	1.00	0.87	0.87	0.87	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx												
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
HCM Sat Adj:	0.86	0.86	0.86	0.80	0.80	0.80	0.93	0.98	1.00	0.93	0.98	0.98												
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95												
Fnl Sat Adj:	0.86	0.86	0.86	0.80	0.80	0.80	0.93	0.93	0.95	0.93	0.93	0.93												
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00												

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	100	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	17.61	17.61	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	18.61	18.61	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	18.61	18.61	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	1	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	1	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	1	34	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	0.02	0.43	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	0.43	0.02	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	0.03	0.94	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	78	51	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	2.17	1.42	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	1.33	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	3.00	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	13.01	4.72	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	0.75	0.75	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	3.58	1.76	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	5.60	13.89	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	0.00	0.00	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	0.57	0.98	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	1.52	1.48	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	1.00	1.00	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	0.11	0.15	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	1.00	0.87	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	1.00	0.87	xxxxxx	xxxxxx

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.19	0.19	0.19	0.19	0.19	0.19	0.01	0.68	0.00	0.05	0.72	0.72
ArrivalType:	4			4			4			4		
ProgFactor:	0.93	0.93	0.93	0.94	0.94	0.94	1.00	0.32	1.00	0.99	0.18	0.18
Q1:	1.1	1.1	1.1	1.8	1.8	1.8	0.1	0.9	0.0	0.5	0.6	0.6
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Q2:	0.2	0.2	0.2	0.4	0.4	0.4	0.3	0.3	0.0	0.3	0.4	0.4
HCM2KQueue:	1.3	1.3	1.3	2.1	2.1	2.1	0.4	1.2	0.0	0.8	1.0	1.0
70th%Factor:	1.20	1.20	1.20	1.19	1.19	1.19	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	1.6	1.6	1.6	2.5	2.5	2.5	0.5	1.5	0.0	0.9	1.2	1.2
85th%Factor:	1.59	1.59	1.59	1.58	1.58	1.58	1.60	1.59	1.60	1.59	1.59	1.59
HCM2k85thQ:	2.1	2.1	2.1	3.4	3.4	3.4	0.7	1.9	0.0	1.2	1.6	1.6
90th%Factor:	1.77	1.77	1.77	1.76	1.76	1.76	1.79	1.78	1.80	1.79	1.78	1.78
HCM2k90thQ:	2.3	2.3	2.3	3.8	3.8	3.8	0.8	2.2	0.0	1.4	1.8	1.8
95th%Factor:	2.06	2.06	2.06	2.03	2.03	2.03	2.09	2.06	2.10	2.08	2.07	2.07
HCM2k95thQ:	2.7	2.7	2.7	4.3	4.3	4.3	0.9	2.5	0.0	1.6	2.1	2.1
98th%Factor:	2.60	2.60	2.60	2.55	2.55	2.55	2.67	2.61	2.70	2.64	2.62	2.62
HCM2k98thQ:	3.4	3.4	3.4	5.4	5.4	5.4	1.2	3.2	0.0	2.0	2.7	2.7

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	1.003
Loss Time (sec):	12	Average Delay (sec/veh):	53.6
Optimal Cycle:	180	Level Of Service:	D

Street Name:	West Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:	AM Peak Hour											
Base Vol:	398	273	64	31	445	185	194	735	522	106	584	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	398	273	64	31	445	185	194	735	522	106	584	8
Added Vol:	46	11	28	12	4	0	0	51	25	50	102	13
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	444	284	92	43	449	185	194	786	547	156	686	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	483	309	100	47	488	201	211	854	595	170	746	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	483	309	100	47	488	201	211	854	595	170	746	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	483	309	100	47	488	201	211	854	595	170	746	23
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.27	0.09	0.06	0.03	0.14	0.13	0.12	0.24	0.38	0.10	0.21	0.01
Crit Moves:	****				****				****	****		
Green/Cycle:	0.27	0.31	0.31	0.10	0.14	0.14	0.17	0.37	0.37	0.10	0.30	0.30
Volume/Cap:	1.00	0.28	0.20	0.28	1.00	0.92	0.70	0.64	1.00	1.00	0.70	0.05
Delay/Veh:	78.1	25.9	25.3	42.9	84.6	82.9	46.4	26.9	68.9	115.1	33.1	24.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	78.1	25.9	25.3	42.9	84.6	82.9	46.4	26.9	68.9	115.1	33.1	24.9
LOS by Move:	E	C	C	D	F	F	D	C	E	F	C	C
HCM2k95thQ:	794	158	95	79	576	443	350	500	1039	334	469	21

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	2 0	1		1 0	2 0	1		1 0	2 0	1		1 0	2 0	1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	2	1		1	2	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.27	0.31	0.31	0.10	0.14	0.14	0.17	0.37	0.37	0.10	0.30	0.30
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.88	0.87	0.97	1.00	1.00	0.98	0.90	1.00	1.00	0.94	0.86
Q1:	13.4	3.0	1.8	1.2	7.1	5.5	5.4	9.2	16.5	4.7	9.1	0.4
UpstreamVC:	0.46	0.46	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.33	0.33
UpstreamAdj:	0.89	0.89	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.95	0.95	0.95
EarlyArrAdj:	0.42	0.47	0.43	1.00	1.00	1.00	1.00	1.00	1.00	0.24	0.49	0.45
Q2:	5.1	0.2	0.1	0.4	5.7	4.1	2.0	1.7	8.7	2.3	1.1	0.0
HCM2KQueue:	18.5	3.1	1.9	1.5	12.8	9.6	7.4	10.9	25.2	7.0	10.2	0.4
70th%Factor:	1.16	1.19	1.20	1.20	1.17	1.18	1.18	1.18	1.15	1.18	1.18	1.20
HCM2k70thQ:	21.5	3.8	2.2	1.9	15.1	11.3	8.7	12.9	29.1	8.3	12.0	0.5
85th%Factor:	1.46	1.57	1.58	1.58	1.50	1.52	1.53	1.51	1.43	1.54	1.51	1.60
HCM2k85thQ:	27.1	4.9	3.0	2.5	19.2	14.5	11.3	16.5	36.1	10.8	15.4	0.7
90th%Factor:	1.56	1.74	1.76	1.77	1.61	1.65	1.68	1.63	1.51	1.68	1.64	1.79
HCM2k90thQ:	28.9	5.5	3.3	2.7	20.7	15.8	12.4	17.8	38.2	11.8	16.7	0.7
95th%Factor:	1.71	2.00	2.04	2.05	1.79	1.85	1.90	1.83	1.65	1.91	1.84	2.09
HCM2k95thQ:	31.8	6.3	3.8	3.2	23.0	17.7	14.0	20.0	41.6	13.3	18.8	0.9
98th%Factor:	1.94	2.48	2.57	2.59	2.07	2.18	2.27	2.13	1.84	2.28	2.16	2.67
HCM2k98thQ:	36.0	7.8	4.8	4.0	26.6	20.9	16.7	23.3	46.5	16.0	22.0	1.1

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[11.9]

Street Name:	Ham Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	0	0	0	0	0	0	1	0	0	0
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	0	0	29	0	779	0	0	637	22
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	29	0	779	0	0	637	22
Added Vol:	0	0	0	0	0	3	0	299	0	0	164	13
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	32	0	1078	0	0	801	35
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	0	0	35	0	1172	0	0	871	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	35	0	1172	0	0	871	38
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	454	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	553	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	553	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	0.06	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	5.0	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	B	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			11.9			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			12 feet			12 feet			12 feet	

Time Period: 0.25 hour

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St G

Cycle (sec): 100 Critical Vol./Cap.(X): 0.496
Loss Time (sec): 12 Average Delay (sec/veh): 11.8
Optimal Cycle: 40 Level Of Service: B

Street Name:	Leach Road/Street G						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	5	0	6	5	908	0	0	650	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	5	0	6	5	908	0	0	650	6
Added Vol:	61	0	87	0	0	0	58	225	21	29	110	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	61	0	87	5	0	6	63	1133	21	29	760	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	66	0	95	5	0	7	68	1232	23	32	826	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	66	0	95	5	0	7	68	1232	23	32	826	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	66	0	95	5	0	7	68	1232	23	32	826	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	0.93	1.00	0.83	0.93	0.93	0.93	0.93	0.93	0.93
Lanes:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.96	0.04	1.00	1.98	0.02
Final Sat.:	1769	0	1583	1769	0	1583	1769	3463	64	1769	3507	28
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.06	0.00	0.00	0.00	0.04	0.36	0.36	0.02	0.24	0.24
Crit Moves:			****	****				****		****		
Green/Cycle:	0.11	0.00	0.12	0.01	0.00	0.01	0.11	0.72	0.72	0.04	0.65	0.65
Volume/Cap:	0.33	0.00	0.50	0.50	0.00	0.66	0.36	0.50	0.50	0.50	0.36	0.36
Delay/Veh:	41.7	0.0	43.2	80.8	0.0	153.8	42.7	6.4	6.4	53.3	8.3	8.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.7	0.0	43.2	80.8	0.0	153.8	42.7	6.4	6.4	53.3	8.3	8.3
LOS by Move:	D	A	D	F	A	F	D	A	A	D	A	A
HCM2k95thQ:	108	0	165	36	0	47	115	126	126	85	151	151

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St G

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0	1	0	1	0
Lane Group:	L	RT		RT	L	RT		RT	L	RT		RT	L	RT		RT
#LnsInGrps:	1	1		1	1	1		1	1	2		2	1	2		2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	xxxx	0.98		0.98	xxxx	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	1.00	1.00		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	1.00	0.83		0.93	1.00	0.83		0.93	0.98	0.98		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	0.95		1.00	0.95	0.95	
Fnl Sat Adj:	0.93	1.00	0.83		0.93	1.00	0.83		0.93	0.93	0.93		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	1.00		1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St G

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.11	0.00	0.12		0.01	0.00	0.01		0.11	0.72	0.72		0.04	0.65	0.65	
ArrivalType:		4				4				4				4		
ProgFactor:	0.97	1.00	0.97		1.00	1.00	1.00		0.97	0.19	0.19		0.99	0.43	0.43	
Q1:	1.6	0.0	2.4		0.2	0.0	0.2		1.7	1.5	1.5		0.9	2.4	2.4	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	0.00	1.00		1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.5	0.0	0.9		0.5	0.0	0.7		0.6	1.0	1.0		0.8	0.6	0.6	
HCM2KQueue:	2.1	0.0	3.3		0.7	0.0	0.9		2.3	2.5	2.5		1.7	3.0	3.0	
70th%Factor:	1.19	1.20	1.19		1.20	1.20	1.20		1.19	1.19	1.19		1.20	1.19	1.19	
HCM2k70thQ:	2.5	0.0	3.9		0.8	0.0	1.1		2.7	3.0	3.0		2.0	3.6	3.6	
85th%Factor:	1.58	1.60	1.57		1.59	1.60	1.59		1.58	1.58	1.58		1.58	1.57	1.57	
HCM2k85thQ:	3.3	0.0	5.2		1.1	0.0	1.4		3.6	3.9	3.9		2.6	4.7	4.7	
90th%Factor:	1.76	1.80	1.74		1.79	1.80	1.78		1.76	1.75	1.75		1.77	1.74	1.74	
HCM2k90thQ:	3.7	0.0	5.8		1.2	0.0	1.6		4.0	4.4	4.4		3.0	5.3	5.3	
95th%Factor:	2.03	2.10	2.00		2.08	2.10	2.07		2.03	2.02	2.02		2.05	2.01	2.01	
HCM2k95thQ:	4.3	0.0	6.6		1.5	0.0	1.9		4.6	5.1	5.1		3.4	6.0	6.0	
98th%Factor:	2.55	2.70	2.48		2.65	2.70	2.63		2.54	2.53	2.53		2.58	2.49	2.49	
HCM2k98thQ:	5.4	0.0	8.2		1.8	0.0	2.4		5.8	6.3	6.3		4.3	7.5	7.5	

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Cycle (sec):	100	Critical Vol./Cap.(X):	0.382
Loss Time (sec):	12	Average Delay (sec/veh):	9.6
Optimal Cycle:	34	Level Of Service:	A

Street Name:	Micke Grove Road/Holman Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:	AM Peak Hour											
Base Vol:	0	0	0	12	0	11	15	785	0	0	660	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	12	0	11	15	785	0	0	660	14
Added Vol:	51	0	0	0	0	24	46	129	137	0	64	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	51	0	0	12	0	35	61	914	137	0	724	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	55	0	0	13	0	38	66	993	149	0	787	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	55	0	0	13	0	38	66	993	149	0	787	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	55	0	0	13	0	38	66	993	149	0	787	15
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	1.00	0.93	1.00	0.83	0.93	0.93	0.83	1.00	0.93	0.83
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1769	1900	1900	1769	1900	1583	1769	3538	1583	1900	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.00	0.00	0.01	0.00	0.02	0.04	0.28	0.09	0.00	0.22	0.01
Crit Moves:	****					****		****		****		
Green/Cycle:	0.08	0.00	0.00	0.14	0.00	0.06	0.11	0.74	0.74	0.00	0.63	0.63
Volume/Cap:	0.38	0.00	0.00	0.05	0.00	0.38	0.35	0.38	0.13	0.00	0.35	0.02
Delay/Veh:	45.2	0.0	0.0	36.9	0.0	47.4	42.7	5.0	3.9	0.0	8.9	7.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.2	0.0	0.0	36.9	0.0	47.4	42.7	5.0	3.9	0.0	8.9	7.0
LOS by Move:	D	A	A	D	A	D	D	A	A	A	A	A
HCM2k95thQ:	103	0	0	18	0	81	111	56	13	0	151	4

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	1 0	1		1 0	1 0	1		1 0	2 0	1		1 0	2 0	1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	1	1		1	1	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		xxxx	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	xxxxx		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
Hev Veh Adj:	0.98	xxxx	xxxxx		0.98	xxxx	0.98		0.98	0.98	0.98		xxxx	0.98	0.98	
Grade Adj:	1.00	xxxx	xxxxx		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
Parking Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	xxxx	xxxxx		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
RT Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		xxxx	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	1.00	1.00		0.93	1.00	0.83		0.93	0.98	0.83		1.00	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	1.00	1.00		0.93	1.00	0.83		0.93	0.93	0.83		1.00	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	0.00		1.00	0.00	1.00		1.00	1.00	1.00		0.00	1.00	1.00	

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.08	0.00	0.00	0.14	0.00	0.06	0.11	0.74	0.74	0.00	0.63	0.63
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	1.00	1.00	0.95	1.00	0.99	0.97	0.09	0.08	1.00	0.48	0.44
Q1:	1.4	0.0	0.0	0.3	0.0	1.0	1.7	0.5	0.1	0.0	2.6	0.1
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.51
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.85
EarlyArrAdj:	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.69	0.62
Q2:	0.6	0.0	0.0	0.1	0.0	0.6	0.5	0.6	0.1	0.0	0.4	0.0
HCM2KQueue:	2.0	0.0	0.0	0.3	0.0	1.6	2.2	1.1	0.2	0.0	3.0	0.1
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.20	1.19	1.20	1.20	1.20	1.19	1.20
HCM2k70thQ:	2.4	0.0	0.0	0.4	0.0	1.9	2.6	1.3	0.3	0.0	3.6	0.1
85th%Factor:	1.58	1.60	1.60	1.60	1.60	1.58	1.58	1.59	1.60	1.60	1.57	1.60
HCM2k85thQ:	3.2	0.0	0.0	0.6	0.0	2.5	3.5	1.7	0.4	0.0	4.7	0.1
90th%Factor:	1.76	1.80	1.80	1.79	1.80	1.77	1.76	1.78	1.80	1.80	1.74	1.80
HCM2k90thQ:	3.6	0.0	0.0	0.6	0.0	2.8	3.9	1.9	0.4	0.0	5.3	0.1
95th%Factor:	2.04	2.10	2.10	2.09	2.10	2.05	2.03	2.06	2.09	2.10	2.01	2.10
HCM2k95thQ:	4.1	0.0	0.0	0.7	0.0	3.2	4.5	2.2	0.5	0.0	6.1	0.2
98th%Factor:	2.56	2.70	2.70	2.67	2.70	2.59	2.54	2.62	2.68	2.70	2.49	2.69
HCM2k98thQ:	5.2	0.0	0.0	0.9	0.0	4.1	5.6	2.8	0.6	0.0	7.5	0.2

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Average Delay (sec/veh): 7.8 Worst Case Level Of Service: B[11.9]

Street Name:	SR 99 West Frontage Rd						SR 99 SB Ramps (Eight Mile Rd)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0	1 0	0	1 0	0 0	0 0	0	0 0	1 0	0	0 1
Volume Module:	AM Peak Hour											
Base Vol:	0	103	1	350	106	0	0	0	0	14	0	287
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	103	1	350	106	0	0	0	0	14	0	287
Added Vol:	0	0	0	92	0	0	0	0	0	0	0	10
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	103	1	442	106	0	0	0	0	14	0	297
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	112	1	480	115	0	0	0	0	15	0	323
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	112	1	480	115	0	0	0	0	15	0	323
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	113	xxxx	xxxxx	xxxx	xxxx	xxxxx	1189	xxxx	112
Potent Cap.:	xxxx	xxxx	xxxxx	1476	xxxx	xxxxx	xxxx	xxxx	xxxxx	208	xxxx	940
Move Cap.:	xxxx	xxxx	xxxxx	1476	xxxx	xxxxx	xxxx	xxxx	xxxxx	136	xxxx	940
Volume/Cap:	xxxx	xxxx	xxxx	0.33	xxxx	xxxx	xxxx	xxxx	xxxx	0.11	xxxx	0.34
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	35.8	xxxx	xxxxx	xxxx	xxxx	xxxxx	9.3	xxxx	38.4
Control Del:	xxxxx	xxxx	xxxxx	8.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	34.9	xxxx	10.8
LOS by Move:	*	*	*	A	*	*	*	*	*	D	*	B
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	1.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	8.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			11.9		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

```
Intersection #14 SR99 W Front & SB Ramps 8 Mile
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:       #218             #183
Dist(miles):      0.250            0.250
Speed (mph):       1.00             1.00
SignalIndex:      #22              #12
Cycle Time:         100 secs         100 secs
InitVolume:   533    15        148    22
Saturation:  1769  1335       1769   872
ArrivalType:    4     4          4     4
G/C:         0.36  0.19       0.14  0.04
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:          0.486 0.258      0.193 0.058
gq1:        15.49  0.83       6.75  2.38
gq2:        10.40  0.01       0.85  0.08
gq:         25.89  0.85       7.60  2.46
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:            0.550            0.550
beta:             0.645            0.645
ta (secs):       900.000          900.000
F:                0.003            0.003
f:          0.206 1.000      1.000 1.000
vcmax:         28     4         42     7
vcg:           32     4         45     7
vcmin:       1000  1000       1000  1000
tp:           0.0   0.0        0.0   0.0
p:                0.000            0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx  113 xxxxx xxxxx 1350  1189   115 1189  1189   112
AdjCnflVol:    0 xxxxx xxxxx  113 xxxxx xxxxx 1350  1189   115 1189  1189   112
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx  113 xxxxx xxxxx 1350  1189   115 1189  1189   112
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1623 xxxxx xxxxx 1476 xxxxx xxxxx  128   188   937  208   188   940
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1623 xxxxx xxxxx 1476 xxxxx xxxxx  128   188   937  208   188   940
```


EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

```
Intersection #15 SR99 E Front & NB Ramps 8 Mile
Average Delay (sec/veh):      6.2       Worst Case Level Of Service: D[ 27.2]
Street Name:      SR 99 East Frontage Rd        SR 99 NB Ramps (Eight Mile Rd)
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  0  0    0  0  1  0  1    1  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:AM Peak Hour
Base Vol:     152  197     0     0  301   214    96    0    50     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  152  197     0     0  301   214    96    0    50     0    0     0
Added Vol:      0    0     0     0    0    19    45    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  152  197     0     0  301   233   141    0    50     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:   165  214     0     0  327   253   153    0    54     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:  165  214     0     0  327   253   153    0    54     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4 xxxx   6.2 xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  580 xxxx xxxxx  xxxx xxxx xxxxx   872 xxxx   327  xxxx xxxx xxxxx
Potent Cap.:  994 xxxx xxxxx  xxxx xxxx xxxxx   321 xxxx   714  xxxx xxxx xxxxx
Move Cap.:    994 xxxx xxxxx  xxxx xxxx xxxxx   276 xxxx   714  xxxx xxxx xxxxx
Volume/Cap:  0.17 xxxx  xxxx  xxxx xxxx  xxxx  0.56 xxxx  0.08  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   14.9 xxxx xxxxx  xxxx xxxx xxxxx  77.8 xxxx   6.2  xxxx xxxx xxxxx
Control Del:  9.3 xxxx xxxxx xxxxx xxxx xxxxx  33.2 xxxx  10.5 xxxxx xxxx xxxxx
LOS by Move:    A    *     *     *    *     *     D    *     B     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:  0.6 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:  9.3 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     A    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx              27.2           xxxxxx
ApproachLOS:         *                *                 D                *
Note: Queue reported is the distance per lane in feet.
```

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:	#222			#188								
Dist(miles):	0.250			0.250								
Speed (mph):	1.00			1.00								
SignalIndex:	#23			#13								
Cycle Time:	100 secs			100 secs								
InitVolume:	535	84		50	19							
Saturation:	1410	1040		1769	1597							
ArrivalType:	4	4		4	4							
G/C:	0.35	0.23		0.05	0.07							
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:	0.466	0.310		0.064	0.099							
gq1:	20.26	5.57		2.65	1.07							
gq2:	20.74	0.67		0.10	0.02							
gq:	34.97	6.25		2.75	1.09							
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:	0.550			0.550								
beta:	0.645			0.645								
ta (secs):	900.000			900.000								
F:	0.003			0.003								
f:	0.613	1.000		1.000	1.000							
vcmax:	89	20		15	5							
vcg:	89	25		15	6							
vcmin:	1000	1000		1000	1000							
tp:	0.0	0.0		0.0	0.0							
p:	0.000			0.000								
*** Computation 3: Platoon Event Periods												
pdom/psubo:	0.000/0.000/Unconstrained											
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	580	xxxxx	xxxxx	0	xxxxx	xxxxx	872	872	327	1026	1125	214
AdjCnflVol:	580	xxxxx	xxxxx	0	xxxxx	xxxxx	872	872	327	1026	1125	214
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	580	xxxxx	xxxxx	0	xxxxx	xxxxx	872	872	327	1026	1125	214
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	994	xxxxx	xxxxx	1623	xxxxx	xxxxx	321	289	714	213	205	826
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
Potent Cap.:	994	xxxxx	xxxxx	1623	xxxxx	xxxxx	321	289	714	213	205	826

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 West & L.C.MarkTaylor/Marlette

Cycle (sec): 100 Critical Vol./Cap.(X): 0.488
Loss Time (sec): 9 Average Delay (sec/veh): 21.1
Optimal Cycle: 33 Level Of Service: C

Street Name:	West Lane						Lt.Col.Mark Taylor/Marlette Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	2	0	1	1	0	2	0	0	0	0	0	0	0	0	1	0	0	0	1
Volume Module: AM Peak Hour												
Base Vol:	0	461	27	31	715	0	0	0	0	44	0	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	461	27	31	715	0	0	0	0	44	0	14
Added Vol:	0	119	77	34	45	0	0	0	0	299	0	12
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	580	104	65	760	0	0	0	0	343	0	26
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	630	113	71	826	0	0	0	0	373	0	28
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	630	113	71	826	0	0	0	0	373	0	28
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	630	113	71	826	0	0	0	0	373	0	28
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.93	0.83	0.93	0.93	1.00	1.00	1.00	1.00	0.93	1.00	0.83
Lanes:	0.00	2.00	1.00	1.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	3538	1583	1769	3538	0	0	0	0	1769	0	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.18	0.07	0.04	0.23	0.00	0.00	0.00	0.00	0.21	0.00	0.02
Crit Moves:	****				****					****		
Green/Cycle:	0.00	0.39	0.39	0.09	0.48	0.00	0.00	0.00	0.00	0.43	0.00	0.43
Volume/Cap:	0.00	0.46	0.18	0.46	0.49	0.00	0.00	0.00	0.00	0.49	0.00	0.04
Delay/Veh:	0.0	22.8	20.1	45.5	18.0	0.0	0.0	0.0	0.0	21.0	0.0	16.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	22.8	20.1	45.5	18.0	0.0	0.0	0.0	0.0	21.0	0.0	16.5
LOS by Move:	A	C	C	D	B	A	A	A	A	C	A	B
HCM2k95thQ:	0	317	96	94	308	0	0	0	0	336	0	20

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #16 West & L.C.MarkTaylor/Marlette

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	0	0	2	0 1	1	0	2	0 0	0	0	0	0 0	1	0	0	0 1
Lane Group:	xxxx		T	R	L		T	xxxx	xxxx	xxxx		xxxx	L	xxxx		R
#LnsInGrps:	0		2	1	1		2	0	0	0		0	1	0		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	xxxx	xxxx	xxxx		1	xxxx	xxxx	xxxx	xxxx	xxxx		1	xxxx	xxxx		
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	xxxx	1.00	1.00	1.00	1.00	xxxxx	xxxx	xxxx	xxxxx	1.00	xxxx	1.00				
Hev Veh Adj:	xxxx	0.98	0.98	0.98	0.98	xxxxx	xxxx	xxxx	xxxxx	0.98	xxxx	0.98				
Grade Adj:	xxxx	1.00	1.00	1.00	1.00	xxxxx	xxxx	xxxx	xxxxx	1.00	xxxx	1.00				
Parking Adj:	xxxx	xxxx	1.00	xxxx	1.00	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00				
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	1.00	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00				
Area Adj:	xxxx	1.00	1.00	1.00	1.00	xxxxx	xxxx	xxxx	xxxxx	1.00	xxxx	1.00				
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.85				
LT Adj:	xxxx	xxxx	xxxxx	0.95	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.95	xxxx	xxxxx				
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
HCM Sat Adj:	1.00	0.98	0.83	0.93	0.98	1.00	1.00	1.00	1.00	0.93	1.00	0.83				
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Sat Adj:	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Fnl Sat Adj:	1.00	0.93	0.83	0.93	0.93	1.00	1.00	1.00	1.00	0.93	1.00	0.83				
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00				

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #16 West & L.C.MarkTaylor/Marlette

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.00	0.39	0.39	0.09	0.48	0.00	0.00	0.00	0.00	0.43	0.00	0.43				
ArrivalType:		4			4			4			4					
ProgFactor:	1.00	0.85	0.81	0.98	0.77	1.00	1.00	1.00	1.00	0.82	1.00	0.75				
Q1:	0.0	5.8	1.7	1.8	6.4	0.0	0.0	0.0	0.0	6.1	0.0	0.3				
UpstreamVC:	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
UpstreamAdj:	0.00	0.00	0.00	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
EarlyArrAdj:	0.00	1.00	1.00	0.02	0.06	0.00	0.00	0.00	0.00	1.00	0.00	1.00				
Q2:	0.0	0.8	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.9	0.0	0.0				
HCM2KQueue:	0.0	6.6	1.9	1.8	6.4	0.0	0.0	0.0	0.0	7.1	0.0	0.4				
70th%Factor:	1.20	1.18	1.20	1.20	1.19	1.20	1.20	1.20	1.20	1.18	1.20	1.20				
HCM2k70thQ:	0.0	7.8	2.3	2.2	7.6	0.0	0.0	0.0	0.0	8.3	0.0	0.5				
85th%Factor:	1.60	1.54	1.58	1.58	1.54	1.60	1.60	1.60	1.60	1.54	1.60	1.60				
HCM2k85thQ:	0.0	10.2	3.0	2.9	9.9	0.0	0.0	0.0	0.0	10.8	0.0	0.6				
90th%Factor:	1.80	1.69	1.76	1.76	1.69	1.80	1.80	1.80	1.80	1.68	1.80	1.79				
HCM2k90thQ:	0.0	11.2	3.3	3.3	10.8	0.0	0.0	0.0	0.0	11.9	0.0	0.7				
95th%Factor:	2.10	1.92	2.04	2.04	1.92	2.10	2.10	2.10	2.10	1.91	2.10	2.09				
HCM2k95thQ:	0.0	12.7	3.8	3.8	12.3	0.0	0.0	0.0	0.0	13.4	0.0	0.8				
98th%Factor:	2.70	2.30	2.56	2.57	2.31	2.70	2.70	2.70	2.70	2.28	2.70	2.67				
HCM2k98thQ:	0.0	15.2	4.8	4.7	14.8	0.0	0.0	0.0	0.0	16.1	0.0	1.0				

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

Cycle (sec):	100	Critical Vol./Cap.(X):	0.331
Loss Time (sec):	12	Average Delay (sec/veh):	31.5
Optimal Cycle:	32	Level Of Service:	C

Street Name:	Holman Road						Lt. Col. Mark Taylor Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	3 0	1	1 0	1 0	1	1 0	0 1	0
Volume Module:AM Peak Hour												
Base Vol:	98	84	110	11	148	4	5	112	88	173	82	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	98	84	110	11	148	4	5	112	88	173	82	4
Added Vol:	3	20	0	45	68	3	4	20	5	0	14	20
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	101	104	110	56	216	7	9	132	93	173	96	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	110	113	120	61	235	8	10	143	101	188	104	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	110	113	120	61	235	8	10	143	101	188	104	26
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	110	113	120	61	235	8	10	143	101	188	104	26
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.89	0.83	0.93	0.98	0.83	0.93	0.95	0.95
Lanes:	1.00	2.00	1.00	1.00	3.00	1.00	1.00	1.00	1.00	1.00	0.80	0.20
Final Sat.:	1769	3538	1583	1769	5083	1583	1769	1862	1583	1769	1445	361
Capacity Analysis Module:												
Vol/Sat:	0.06	0.03	0.08	0.03	0.05	0.00	0.01	0.08	0.06	0.11	0.07	0.07
Crit Moves:	****				****			****		****		
Green/Cycle:	0.19	0.22	0.22	0.10	0.14	0.14	0.04	0.23	0.23	0.32	0.51	0.51
Volume/Cap:	0.33	0.14	0.34	0.34	0.33	0.03	0.14	0.33	0.27	0.33	0.14	0.14
Delay/Veh:	35.8	31.2	33.1	42.8	39.1	37.3	47.3	32.4	31.9	26.2	12.8	12.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.8	31.2	33.1	42.8	39.1	37.3	47.3	32.4	31.9	26.2	12.8	12.8
LOS by Move:	D	C	C	D	D	D	D	C	C	C	B	B
HCM2k95thQ:	135	66	140	103	129	11	15	164	115	197	73	73

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Lanes:	1 0	2 0	1		1 0	3 0	1		1 0	1 0	1		1 0	0 1	0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	2	1		1	3	1		1	1	1		1	1	1	
HCM Ops Adjusted Lane Utilization Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.89	0.83		0.93	0.98	0.83		0.93	0.95	0.95	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.19	0.22	0.22	0.10	0.14	0.14	0.04	0.23	0.23	0.32	0.51	0.51
ArrivalType:		4			4			4			4	
ProgFactor:	0.94	0.91	0.93	0.97	0.96	0.95	0.99	0.92	0.92	0.88	0.67	0.67
Q1:	2.5	1.2	2.6	1.5	2.1	0.2	0.3	3.1	2.1	3.5	1.3	1.3
UpstreamVC:	0.20	0.20	0.20	0.00	0.00	0.00	0.02	0.02	0.02	0.00	0.00	0.00
UpstreamAdj:	0.99	0.99	0.99	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
EarlyArrAdj:	0.37	0.43	0.39	1.00	1.00	1.00	0.15	0.44	0.40	1.00	1.00	1.00
Q2:	0.2	0.1	0.2	0.5	0.5	0.0	0.0	0.2	0.2	0.5	0.2	0.2
HCM2KQueue:	2.7	1.3	2.8	2.0	2.6	0.2	0.3	3.3	2.3	4.0	1.4	1.4
70th%Factor:	1.19	1.20	1.19	1.20	1.19	1.20	1.20	1.19	1.19	1.19	1.20	1.20
HCM2k70thQ:	3.2	1.5	3.3	2.4	3.1	0.3	0.3	3.9	2.7	4.7	1.7	1.7
85th%Factor:	1.57	1.59	1.57	1.58	1.58	1.60	1.60	1.57	1.58	1.56	1.59	1.59
HCM2k85thQ:	4.2	2.0	4.4	3.2	4.0	0.3	0.5	5.2	3.6	6.2	2.3	2.3
90th%Factor:	1.75	1.78	1.75	1.76	1.75	1.80	1.79	1.74	1.76	1.73	1.77	1.77
HCM2k90thQ:	4.7	2.3	4.9	3.6	4.5	0.4	0.5	5.7	4.0	6.9	2.5	2.5
95th%Factor:	2.02	2.06	2.01	2.04	2.02	2.09	2.09	2.00	2.03	1.98	2.05	2.05
HCM2k95thQ:	5.4	2.6	5.6	4.1	5.2	0.4	0.6	6.6	4.6	7.9	2.9	2.9
98th%Factor:	2.51	2.61	2.51	2.56	2.52	2.68	2.68	2.48	2.54	2.44	2.60	2.60
HCM2k98thQ:	6.7	3.3	7.0	5.2	6.4	0.6	0.8	8.1	5.8	9.7	3.7	3.7

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.557
Loss Time (sec):	12	Average Delay (sec/veh):	28.1
Optimal Cycle:	45	Level Of Service:	C

Street Name:	West Lane						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:	AM Peak Hour											
Base Vol:	82	458	252	345	669	31	25	89	69	252	61	205
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	82	458	252	345	669	31	25	89	69	252	61	205
Added Vol:	0	139	0	70	249	26	14	0	0	20	2	42
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	82	597	252	415	918	57	39	89	69	272	63	247
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	89	649	274	451	998	62	42	97	75	296	68	268
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	649	274	451	998	62	42	97	75	296	68	268
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	649	274	451	998	62	42	97	75	296	68	268
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	5083	1583	3432	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.18	0.17	0.13	0.28	0.04	0.01	0.02	0.05	0.09	0.01	0.17
Crit Moves:	****				****		****					****
Green/Cycle:	0.05	0.32	0.32	0.23	0.51	0.51	0.02	0.12	0.12	0.21	0.30	0.30
Volume/Cap:	0.56	0.57	0.54	0.57	0.56	0.08	0.56	0.16	0.41	0.41	0.04	0.56
Delay/Veh:	51.0	28.8	28.9	35.0	17.4	12.7	57.2	40.0	42.5	34.5	24.5	30.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.0	28.8	28.9	35.0	17.4	12.7	57.2	40.0	42.5	34.5	24.5	30.6
LOS by Move:	D	C	C	D	B	B	E	D	D	C	C	C
HCM2k95thQ:	115	395	323	319	412	35	76	54	128	203	24	330

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	0	1	2	0 2	0	1	2	0 3	0	1	2	0 3	0	1
Lane Group:	L	T		R	L	T		R	L	T		R	L	T		R
#LnsInGrps:	2	2		1	2	2		1	2	3		1	2	3		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.05	0.32	0.32		0.23	0.51	0.51		0.02	0.12	0.12		0.21	0.30	0.30	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.91	0.90		0.95	0.76	0.67		1.00	0.96	0.97		0.94	0.86	0.92	
Q1:	1.2	7.2	5.6		5.4	7.6	0.6		0.6	0.9	1.9		3.4	0.4	5.7	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	1.0	1.3	1.1		1.3	1.2	0.1		0.9	0.2	0.7		0.7	0.0	1.2	
HCM2KQueue:	2.3	8.4	6.8		6.7	8.8	0.7		1.5	1.0	2.5		4.1	0.5	6.9	
70th%Factor:	1.19	1.18	1.18		1.18	1.18	1.20		1.20	1.20	1.19		1.19	1.20	1.18	
HCM2k70thQ:	2.7	10.0	8.0		7.9	10.4	0.8		1.8	1.3	3.0		4.9	0.6	8.2	
85th%Factor:	1.58	1.53	1.54		1.54	1.52	1.59		1.59	1.59	1.58		1.56	1.60	1.54	
HCM2k85thQ:	3.6	12.9	10.4		10.3	13.4	1.1		2.4	1.7	4.0		6.4	0.7	10.7	
90th%Factor:	1.76	1.66	1.69		1.69	1.66	1.79		1.77	1.78	1.75		1.73	1.79	1.68	
HCM2k90thQ:	4.0	14.0	11.4		11.3	14.6	1.2		2.6	1.9	4.4		7.1	0.8	11.7	
95th%Factor:	2.03	1.88	1.91		1.91	1.87	2.08		2.05	2.07	2.02		1.98	2.08	1.91	
HCM2k95thQ:	4.6	15.8	12.9		12.8	16.5	1.4		3.1	2.2	5.1		8.1	1.0	13.2	
98th%Factor:	2.54	2.22	2.29		2.30	2.21	2.65		2.59	2.62	2.52		2.43	2.66	2.29	
HCM2k98thQ:	5.8	18.7	15.5		15.3	19.5	1.8		3.9	2.7	6.4		10.0	1.2	15.8	

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.605
Loss Time (sec):	12	Average Delay (sec/veh):	35.2
Optimal Cycle:	49	Level Of Service:	D

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:	AM Peak Hour											
Base Vol:	229	107	112	318	206	181	143	591	166	176	506	190
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	229	107	112	318	206	181	143	591	166	176	506	190
Added Vol:	11	22	0	0	46	27	1	37	19	0	22	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	240	129	112	318	252	208	144	628	185	176	528	190
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	261	140	122	346	274	226	157	683	201	191	574	207
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	261	140	122	346	274	226	157	683	201	191	574	207
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	261	140	122	346	274	226	157	683	201	191	574	207
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.15	0.03	0.08	0.20	0.05	0.14	0.09	0.13	0.13	0.11	0.11	0.13
Crit Moves:	****					****		****		****		
Green/Cycle:	0.24	0.14	0.14	0.34	0.24	0.24	0.16	0.22	0.22	0.18	0.24	0.24
Volume/Cap:	0.61	0.20	0.57	0.57	0.23	0.61	0.55	0.61	0.57	0.61	0.47	0.55
Delay/Veh:	36.0	38.6	44.0	28.0	30.9	36.9	40.8	35.9	37.0	41.2	33.0	35.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.0	38.6	44.0	28.0	30.9	36.9	40.8	35.9	37.0	41.2	33.0	35.0
LOS by Move:	D	D	D	C	C	D	D	D	D	D	C	D
HCM2k95thQ:	319	66	170	364	111	285	244	351	289	240	236	239

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	3 0	1		1 0	3 0	1		1 0	3 0	1		1 0	3 0	1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	3	1		1	3	1		1	3	1		1	3	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.24	0.14	0.14	0.34	0.24	0.24	0.16	0.22	0.22	0.18	0.24	0.24
ArrivalType:		4			4			4			4	
ProgFactor:	0.95	0.96	0.97	0.90	0.91	0.95	0.97	0.95	0.95	0.97	0.94	0.94
Q1:		6.1	1.2	3.1	7.0	2.1	5.3	3.9	6.0	4.7	4.7	4.7
UpstreamVC:	0.49	0.49	0.49	0.33	0.33	0.33	0.00	0.00	0.00	0.90	0.90	0.90
UpstreamAdj:	0.86	0.86	0.86	0.95	0.95	0.95	0.00	0.00	0.00	0.32	0.32	0.32
EarlyArrAdj:	0.38	0.28	0.25	0.52	0.43	0.39	1.00	1.00	1.00	0.12	0.14	0.13
Q2:		0.6	0.1	0.3	0.7	0.1	0.6	1.1	1.4	1.3	0.2	0.1	0.2
HCM2KQueue:		6.7	1.3	3.4	7.7	2.2	5.9	5.0	7.4	6.0	4.9	4.8	4.9
70th%Factor:	1.18	1.20	1.19	1.18	1.19	1.19	1.19	1.18	1.19	1.19	1.19	1.19
HCM2k70thQ:		7.9	1.5	4.1	9.1	2.6	7.0	5.9	8.7	7.1	5.8	5.7	5.8
85th%Factor:	1.54	1.59	1.57	1.53	1.58	1.55	1.55	1.53	1.55	1.55	1.56	1.55
HCM2k85thQ:		10.3	2.0	5.3	11.8	3.4	9.1	7.8	11.3	9.3	7.6	7.5	7.6
90th%Factor:	1.69	1.78	1.74	1.67	1.76	1.70	1.71	1.68	1.70	1.71	1.71	1.71
HCM2k90thQ:		11.2	2.3	5.9	12.9	3.8	10.0	8.5	12.4	10.2	8.4	8.3	8.4
95th%Factor:	1.91	2.06	2.00	1.89	2.03	1.93	1.95	1.90	1.93	1.96	1.96	1.96
HCM2k95thQ:		12.8	2.6	6.8	14.6	4.4	11.4	9.8	14.0	11.6	9.6	9.4	9.6
98th%Factor:	2.30	2.61	2.47	2.25	2.55	2.34	2.38	2.27	2.33	2.39	2.39	2.39
HCM2k98thQ:		15.3	3.3	8.4	17.3	5.6	13.8	11.9	16.8	14.0	11.7	11.5	11.7

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 SR99 W Front & SB Ramps Morada

Average Delay (sec/veh): 7.7 Worst Case Level Of Service: D[31.2]

Street Name:	SR 99 West Frontage Rd						SR 99 SB Ramps (Morada Lane)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Volume Module:	AM Peak Hour																				
Base Vol:	0	62	788	31	50	0	0	0	0	282	0	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	62	788	31	50	0	0	0	0	282	0	19
Added Vol:	0	0	37	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	62	825	31	50	0	0	0	0	282	0	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	67	897	34	54	0	0	0	0	307	0	21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	67	897	34	54	0	0	0	0	307	0	21
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	964	xxxx	xxxxx	xxxx	xxxx	xxxxx	638	xxxx	516
Potent Cap.:	xxxx	xxxx	xxxxx	714	xxxx	xxxxx	xxxx	xxxx	xxxxx	441	xxxx	559
Move Cap.:	xxxx	xxxx	xxxxx	714	xxxx	xxxxx	xxxx	xxxx	xxxxx	425	xxxx	559
Volume/Cap:	xxxx	xxxx	xxxx	0.05	xxxx	xxxx	xxxx	xxxx	xxxx	0.72	xxxx	0.04
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	3.7	xxxx	xxxxx	xxxx	xxxx	xxxxx	141	xxxx	2.9
Control Del:	xxxxx	xxxx	xxxxx	10.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	32.5	xxxx	11.7
LOS by Move:	*	*	*	B	*	*	*	*	*	D	*	B
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	10.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	B	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			31.2		
ApproachLOS:	*			*			*			D		

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #20 SR99 W Front & SB Ramps Morada

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HevVeh:		2%				2%				2%				2%		
Grade:		0%				0%				0%				0%		
Peds/Hour:		0				0				0				0		
Pedestrian Walk Speed: 4.00 feet/sec																
LaneWidth:		12 feet				12 feet				12 feet				12 feet		
Time Period: 0.25 hour																
Upstream Signals:																
Link Index:		#218				#183										
Dist(miles):		0.250				0.250										
Speed (mph):		1.00				1.00										
SignalIndex:		#22				#12										
Cycle Time:		100 secs				100 secs										
InitVolume:	533	15			148	22										
Saturation:	1769	1335			1769	872										
ArrivalType:	4	4			4	4										
G/C:	0.36	0.19			0.14	0.04										
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection																
P:	0.486	0.258			0.193	0.058										
gq1:	15.49	0.83			6.75	2.38										
gq2:	10.40	0.01			0.85	0.08										
gq:	25.89	0.85			7.60	2.46										
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons																
alpha:		0.550				0.550										
beta:		0.645				0.645										
ta (secs):		900.000				900.000										
F:		0.003				0.003										
f:	1.000	1.000			0.518	1.000										
vcmax:	138	4			22	7										
vcg:	156	4			23	7										
vcmin:	1000	1000			1000	1000										
tp:	0.0	0.0			0.0	0.0										
p:		0.000				0.000										
*** Computation 3: Platoon Event Periods																
pdom/psubo:		0.000/0.000/Unconstrained														
*** Computation 4: Conflicting Flows During Each Unblocked Period																
InitCnflVol:	0	xxxxx	xxxxx	964	xxxxx	xxxxx	648	1086	54	638	638	516				
AdjCnflVol:	0	xxxxx	xxxxx	964	xxxxx	xxxxx	648	1086	54	638	638	516				
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000				
ConflictVol:	0	xxxxx	xxxxx	964	xxxxx	xxxxx	648	1086	54	638	638	516				
*** Computation 5: Capacity for Subject Movement During Unblocked Period																
InitPotCap:	1623	xxxxx	xxxxx	714	xxxxx	xxxxx	384	216	1013	441	395	559				
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000				
Potent Cap.:	1623	xxxxx	xxxxx	714	xxxxx	xxxxx	384	216	1013	441	395	559				

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #21 SR99 E Front & NB Ramps Morada

Average Delay (sec/veh): 15.9 Worst Case Level Of Service: F[66.4]

Street Name:	SR 99 East Frontage Rd								SR 99 NB Ramps (Morada Lane)							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	1	0	0	0	0	0	0	1	0	1	0	0	1	0	0
Volume Module:	AM Peak Hour															
Base Vol:	230	451	0	0	511	2	95	0	214	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	230	451	0	0	511	2	95	0	214	0	0	0				
Added Vol:	0	0	0	0	0	0	0	0	22	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	230	451	0	0	511	2	95	0	236	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92				
PHF Volume:	250	490	0	0	555	2	103	0	257	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	250	490	0	0	555	2	103	0	257	0	0	0				
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx				
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	558	xxxx	xxxxx	xxxx	xxxx	xxxxx	1547	xxxx	557	xxxx	xxxx	xxxxx				
Potent Cap.:	1013	xxxx	xxxxx	xxxx	xxxx	xxxxx	126	xxxx	530	xxxx	xxxx	xxxxx				
Move Cap.:	1013	xxxx	xxxxx	xxxx	xxxx	xxxxx	98	xxxx	530	xxxx	xxxx	xxxxx				
Volume/Cap:	0.25	xxxx	xxxx	xxxx	xxxx	xxxx	1.05	xxxx	0.48	xxxx	xxxx	xxxx				
Level Of Service Module:																
2Way95thQ:	24.3	xxxx	xxxxx	xxxx	xxxx	xxxxx	164	xxxx	65.3	xxxx	xxxx	xxxxx				
Control Del:	9.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	186.7	xxxx	18.0	xxxxx	xxxx	xxxxx				
LOS by Move:	A	*	*	*	*	*	F	*	C	*	*	*				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	1.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	9.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*				
ApproachDel:	xxxxxx			xxxxxx			66.4			xxxxxx						
ApproachLOS:	*			*			F			*						

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #21 SR99 E Front & NB Ramps Morada

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			12 feet			12 feet			12 feet	
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:		#222			#188							
Dist(miles):		0.250			0.250							
Speed (mph):		1.00			1.00							
SignalIndex:		#23			#13							
Cycle Time:		100 secs			100 secs							
InitVolume:	535	84		50	19							
Saturation:	1410	1040		1769	1597							
ArrivalType:	4	4		4	4							
G/C:	0.35	0.23		0.05	0.07							
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:	0.466	0.310		0.064	0.099							
gq1:	20.26	5.57		2.65	1.07							
gq2:	20.74	0.67		0.10	0.02							
gq:	34.97	6.25		2.75	1.09							
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:		0.550			0.550							
beta:		0.645			0.645							
ta (secs):		900.000			900.000							
F:		0.003			0.003							
f:	1.000	1.000		1.000	1.000							
vcmax:	146	20		15	5							
vcg:	146	25		15	6							
vcmin:	1000	1000		1000	1000							
tp:	0.0	0.0		0.0	0.0							
p:		0.000			0.000							
*** Computation 3: Platoon Event Periods												
pdom/psubo:		0.000/0.000/Unconstrained										
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	558	xxxxx	xxxxx	0	xxxxx	xxxxx	1547	1547	557	1675	1548	490
AdjCnflVol:	558	xxxxx	xxxxx	0	xxxxx	xxxxx	1547	1547	557	1675	1548	490
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	558	xxxxx	xxxxx	0	xxxxx	xxxxx	1547	1547	557	1675	1548	490
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	1013	xxxxx	xxxxx	1623	xxxxx	xxxxx	126	114	530	76	114	578
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
Potent Cap.:	1013	xxxxx	xxxxx	1623	xxxxx	xxxxx	126	114	530	76	114	578

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 West Ln & West Ln Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.697
Loss Time (sec):	9	Average Delay (sec/veh):	20.5
Optimal Cycle:	51	Level Of Service:	C

Street Name:	West Lane						West Lane Frontage Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	1	0	1	0 1	1	0	0 1	0 0	1	1 0 0 1 0
Volume Module:	AM Peak Hour											
Base Vol:	109	625	51	48	919	70	119	14	113	177	17	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	109	625	51	48	919	70	119	14	113	177	17	4
Added Vol:	0	139	0	0	269	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	109	764	51	48	1188	70	119	14	113	177	17	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	118	830	55	52	1291	76	129	15	123	192	18	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	830	55	52	1291	76	129	15	123	192	18	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	118	830	55	52	1291	76	129	15	123	192	18	4
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.92	0.92	0.93	0.92	0.92	0.70	0.70	0.83	0.57	0.95	0.95
Lanes:	1.00	1.87	0.13	1.00	1.89	0.11	0.89	0.11	1.00	1.00	0.81	0.19
Final Sat.:	1769	3287	219	1769	3314	195	1198	141	1583	1084	1465	345
Capacity Analysis Module:												
Vol/Sat:	0.07	0.25	0.25	0.03	0.39	0.39	0.11	0.11	0.08	0.18	0.01	0.01
Crit Moves:	****				****					****		
Green/Cycle:	0.10	0.59	0.59	0.07	0.56	0.56	0.25	0.25	0.25	0.25	0.25	0.25
Volume/Cap:	0.70	0.43	0.43	0.43	0.70	0.70	0.42	0.42	0.30	0.70	0.05	0.05
Delay/Veh:	55.8	11.6	11.6	47.2	17.0	17.0	32.0	32.0	30.5	41.4	28.2	28.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	55.8	11.6	11.6	47.2	17.0	17.0	32.0	32.0	30.5	41.4	28.2	28.2
LOS by Move:	E	B	B	D	B	B	C	C	C	D	C	C
HCM2k95thQ:	181	234	234	105	573	573	189	189	148	314	25	25

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	1	1	0	1	0	1	1	0	0	1	0	1	0	0
Lane Group:	L	RT		RT	L	RT		RT	LT	LT		R	L	RT		RT
#LnsInGrps:	1	2		2	1	2		2	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		5	5	xxxx		2	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.99	0.99		xxxx	0.99	0.99		xxxx	xxxx	0.85		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.72	0.72	xxxxx		0.58	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.97	0.97		0.93	0.97	0.97		0.70	0.70	0.83		0.57	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	0.95		1.00	0.95	0.95		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.92	0.92		0.93	0.92	0.92		0.70	0.70	0.83		0.57	0.95	0.95	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North	South	East	West
Cycle Length, C:	xxxxxx	xxxxxx	100	100
Actual Green Time Per Lane Group, G:	xxxxxx	xxxxxx	24.47	24.47
Effective Green Time Per Lane Group, g:	xxxxxx	xxxxxx	25.47	25.47
Opposing Effective Green Time, go:	xxxxxx	xxxxxx	25.47	25.47
Number Of Opposing Lanes, No:	xxxxxx	xxxxxx	1	1
Number Of Lanes In Lane Group, N:	xxxxxx	xxxxxx	1	1
Adjusted Left-Turn Flow Rate, Vlt:	xxxxxx	xxxxxx	129	192
Proportion of Left Turns in Lane Group, Plt:	xxxxxx	xxxxxx	0.90	1.00
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	xxxxxx	xxxxxx	3.59	5.34
Adjusted Opposing Flow Rate, Vo:	xxxxxx	xxxxxx	23	145
Opposing Flow Per Lane Per Cycle, Volc:	xxxxxx	xxxxxx	0.64	4.03
Opposing Platoon Ratio, Rpo:	xxxxxx	xxxxxx	1.33	1.33
Lost Time Per Phase, tl:	xxxxxx	xxxxxx	3.00	3.00
Eff grn until arrival of left-turn car, gf:	xxxxxx	xxxxxx	0.00	0.00
Opposing Queue Ratio, qro:	xxxxxx	xxxxxx	0.66	0.66
Eff grn blocked by opposing queue, gq:	xxxxxx	xxxxxx	0.00	2.96
Eff grn while left turns filter thru, gu:	xxxxxx	xxxxxx	25.47	22.51
Max opposing cars arriving during gq-gf, n:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	0.86	0.78
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	0.90	1.00
Through-car Equivalents, el1:	xxxxxx	xxxxxx	1.43	1.52
Single Lane Through-car Equivalents, el2:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	xxxxxx	xxxxxx	0.15	0.16
Single Lane Left Turn Adjustment Factor, fm:	xxxxxx	xxxxxx	0.72	0.58
Left Turn Adjustment Factor, flt:	xxxxxx	xxxxxx	0.72	0.58

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.10	0.59	0.59	0.07	0.56	0.56	0.25	0.25	0.25	0.25	0.25	0.25
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.59	0.59	0.99	0.73	0.73	0.92	0.92	0.91	0.95	0.89	0.89
Q1:	3.2	4.3	4.3	1.4	10.6	10.6	3.1	3.1	2.5	4.6	0.4	0.4
UpstreamVC:	0.46	0.46	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.89	0.89	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.23	0.68	0.68	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.5	0.5	0.5	0.7	2.2	2.2	0.7	0.7	0.4	1.9	0.1	0.1
HCM2KQueue:	3.6	4.8	4.8	2.1	12.8	12.8	3.8	3.8	2.9	6.6	0.5	0.5
70th%Factor:	1.19	1.19	1.19	1.19	1.17	1.17	1.19	1.19	1.19	1.18	1.20	1.20
HCM2k70thQ:	4.3	5.7	5.7	2.5	15.0	15.0	4.5	4.5	3.5	7.8	0.6	0.6
85th%Factor:	1.57	1.56	1.56	1.58	1.50	1.50	1.56	1.56	1.57	1.54	1.60	1.60
HCM2k85thQ:	5.7	7.4	7.4	3.3	19.1	19.1	6.0	6.0	4.6	10.1	0.8	0.8
90th%Factor:	1.73	1.72	1.72	1.76	1.61	1.61	1.73	1.73	1.75	1.69	1.79	1.79
HCM2k90thQ:	6.3	8.2	8.2	3.6	20.6	20.6	6.6	6.6	5.1	11.1	0.9	0.9
95th%Factor:	1.99	1.96	1.96	2.03	1.80	1.80	1.99	1.99	2.01	1.92	2.08	2.08
HCM2k95thQ:	7.2	9.3	9.3	4.2	22.9	22.9	7.6	7.6	5.9	12.6	1.0	1.0
98th%Factor:	2.46	2.39	2.39	2.55	2.07	2.07	2.45	2.45	2.50	2.30	2.66	2.66
HCM2k98thQ:	8.9	11.4	11.4	5.3	26.5	26.5	9.3	9.3	7.4	15.1	1.3	1.3

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 West Lane & Knickerbocker Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.542
Loss Time (sec): 12 Average Delay (sec/veh): 23.2
Optimal Cycle: 44 Level Of Service: C

Street Name:	West Lane						Knickerbocker Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:	AM Peak Hour											
Base Vol:	24	690	78	124	1007	49	71	56	39	192	87	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	24	690	78	124	1007	49	71	56	39	192	87	30
Added Vol:	0	139	0	0	269	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	24	829	78	124	1276	49	71	56	39	192	87	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	26	901	85	135	1387	53	77	61	42	209	95	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	901	85	135	1387	53	77	61	42	209	95	33
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	26	901	85	135	1387	53	77	61	42	209	95	33
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.89	0.93	0.92	0.92	0.93	0.94	0.94
Lanes:	1.00	3.00	1.00	1.00	2.89	0.11	1.00	0.59	0.41	1.00	0.74	0.26
Final Sat.:	1769	5083	1583	1769	4866	187	1769	1030	717	1769	1332	459
Capacity Analysis Module:												
Vol/Sat:	0.01	0.18	0.05	0.08	0.29	0.29	0.04	0.06	0.06	0.12	0.07	0.07
Crit Moves:	****				****			****		****		
Green/Cycle:	0.03	0.39	0.39	0.17	0.53	0.53	0.12	0.11	0.11	0.22	0.20	0.20
Volume/Cap:	0.54	0.46	0.14	0.46	0.54	0.54	0.35	0.54	0.54	0.54	0.35	0.35
Delay/Veh:	60.0	23.0	20.0	38.8	15.9	15.9	41.1	45.3	45.3	36.3	34.8	34.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.0	23.0	20.0	38.8	15.9	15.9	41.1	45.3	45.3	36.3	34.8	34.8
LOS by Move:	E	C	B	D	B	B	D	D	D	D	C	C
HCM2k95thQ:	44	302	67	171	361	361	123	186	186	290	169	169

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	3	0	1	1	0	2	1	0	1	0	0	1	0	1
Lane Group:	L	T	R		L	RT		RT	L	RT		RT	L	RT		RT
#LnsInGrps:	1	3	1		1	3		3	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.99	0.99		xxxx	0.94	0.94		xxxx	0.96	0.96	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.97	0.97		0.93	0.92	0.92		0.93	0.94	0.94	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.89		0.93	0.92	0.92		0.93	0.94	0.94	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.03	0.39	0.39		0.17	0.53	0.53		0.12	0.11	0.11		0.22	0.20	0.20	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.85	0.81		0.96	0.73	0.73		0.97	0.98	0.98		0.95	0.94	0.94	
Q1:		0.7	5.8		1.2	3.2	7.1		7.1	1.9	2.7		2.7	4.9	2.8	
UpstreamVC:	0.35	0.35	0.35		0.70	0.70	0.70		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.95	0.95	0.95		0.65	0.65	0.65		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	0.11	0.57	0.52		0.23	0.47	0.47		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:		0.1	0.5		0.1	0.2	0.6		0.6	0.5	1.1		1.1	1.1	0.5	
HCM2KQueue:		0.8	6.3		1.3	3.4	7.6		7.6	2.4	3.7		3.7	6.0	3.4	
70th%Factor:	1.20	1.19	1.20		1.19	1.18	1.18		1.19	1.19	1.19		1.19	1.19	1.19	
HCM2k70thQ:		1.0	7.5		1.6	4.1	9.0		9.0	2.9	4.5		4.5	7.1	4.0	
85th%Factor:	1.59	1.54	1.59		1.57	1.53	1.53		1.58	1.56	1.56		1.55	1.57	1.57	
HCM2k85thQ:		1.3	9.7		2.1	5.4	11.7		11.7	3.8	5.8		5.8	9.3	5.3	
90th%Factor:	1.78	1.69	1.77		1.74	1.67	1.67		1.75	1.73	1.73		1.70	1.74	1.74	
HCM2k90thQ:		1.5	10.6		2.3	6.0	12.7		12.7	4.3	6.5		6.5	10.2	5.9	
95th%Factor:	2.07	1.92	2.06		2.00	1.89	1.89		2.02	1.99	1.99		1.93	2.00	2.00	
HCM2k95thQ:		1.7	12.1		2.7	6.9	14.4		14.4	4.9	7.4		7.4	11.6	6.8	
98th%Factor:	2.64	2.32	2.60		2.47	2.26	2.26		2.53	2.45	2.45		2.33	2.47	2.47	
HCM2k98thQ:		2.2	14.6		3.4	8.5	17.2		17.2	6.1	9.2		9.2	14.0	8.4	

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.600
Loss Time (sec):	12	Average Delay (sec/veh):	32.6
Optimal Cycle:	48	Level Of Service:	C

Street Name:	West Lane						Hammer Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4 0 1	2	0	4 0 1	2	0	4 0 1	2	0	4 0 1
Volume Module:AM Peak Hour												
Base Vol:	214	461	118	171	923	198	315	841	216	381	654	60
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	214	461	118	171	923	198	315	841	216	381	654	60
Added Vol:	0	139	0	0	269	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	214	600	118	171	1192	198	315	841	216	381	654	60
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	233	652	128	186	1296	215	342	914	235	414	711	65
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	233	652	128	186	1296	215	342	914	235	414	711	65
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	233	652	128	186	1296	215	342	914	235	414	711	65
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.07	0.10	0.08	0.05	0.19	0.14	0.10	0.13	0.15	0.12	0.10	0.04
Crit Moves:	****				****				****	****		
Green/Cycle:	0.11	0.28	0.28	0.16	0.32	0.32	0.22	0.25	0.25	0.20	0.23	0.23
Volume/Cap:	0.60	0.35	0.29	0.35	0.60	0.43	0.46	0.55	0.60	0.60	0.46	0.18
Delay/Veh:	44.8	29.1	28.9	38.1	29.2	27.5	34.4	33.1	35.9	37.8	33.3	31.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.8	29.1	28.9	38.1	29.2	27.5	34.4	33.1	35.9	37.8	33.3	31.2
LOS by Move:	D	C	C	D	C	C	C	C	D	D	C	C
HCM2k95thQ:	218	204	147	123	389	221	236	327	327	277	232	73

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2 0	4 0	1	2 0	4 0	1	2 0	4 0	1	2 0	4 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	4	1	2	4	1	2	4	1	2	4	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Fnl Sat Adj:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.11	0.28	0.28	0.16	0.32	0.32	0.22	0.25	0.25	0.20	0.23	0.23
ArrivalType:	4				4				4				4			
ProgFactor:	0.98	0.91	0.90	0.96	0.92	0.89	0.94	0.94	0.95	0.96	0.94	0.91
Q1:	3.1	3.6	2.5	2.3	7.6	4.2	4.0	5.7	5.4	5.2	4.4	1.3
UpstreamVC:	0.00	0.00	0.00	0.54	0.54	0.54	0.00	0.00	0.00	0.29	0.29	0.29
UpstreamAdj:	0.00	0.00	0.00	0.82	0.82	0.82	0.00	0.00	0.00	0.97	0.97	0.97
EarlyArrAdj:	1.00	1.00	1.00	0.28	0.44	0.40	1.00	1.00	1.00	0.38	0.43	0.39
Q2:	1.3	0.5	0.4	0.1	0.6	0.3	0.8	1.1	1.4	0.6	0.4	0.1
HCM2KQueue:	4.4	4.1	2.9	2.4	8.3	4.5	4.8	6.9	6.8	5.7	4.7	1.4
70th%Factor:	1.19	1.19	1.19	1.19	1.18	1.19	1.19	1.18	1.18	1.19	1.19	1.20
HCM2k70thQ:	5.3	4.9	3.5	2.9	9.8	5.3	5.7	8.1	8.1	6.8	5.6	1.7
85th%Factor:	1.56	1.56	1.57	1.58	1.53	1.56	1.56	1.54	1.54	1.55	1.56	1.59
HCM2k85thQ:	6.9	6.5	4.6	3.8	12.7	7.0	7.5	10.5	10.5	8.9	7.4	2.2
90th%Factor:	1.72	1.73	1.75	1.75	1.66	1.72	1.71	1.68	1.68	1.70	1.72	1.77
HCM2k90thQ:	7.6	7.1	5.1	4.2	13.8	7.7	8.3	11.5	11.5	9.7	8.1	2.5
95th%Factor:	1.97	1.98	2.01	2.02	1.88	1.97	1.96	1.91	1.91	1.94	1.96	2.05
HCM2k95thQ:	8.7	8.2	5.9	4.9	15.6	8.8	9.4	13.1	13.1	11.1	9.3	2.9
98th%Factor:	2.41	2.43	2.50	2.53	2.23	2.41	2.39	2.29	2.29	2.34	2.40	2.60
HCM2k98thQ:	10.7	10.0	7.3	6.1	18.5	10.8	11.5	15.7	15.7	13.4	11.3	3.7

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.887
Loss Time (sec): 12 Average Delay (sec/veh): 38.5
Optimal Cycle: 104 Level Of Service: D

Street Name:	Hammer Lane								Holman Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	2	0	2	1 0	2	0	3	0 1	2	0	3	1 0	2	0	3	1 0
Volume Module:	AM Peak Hour															
Base Vol:	466	380	240		94	636	90		125	780	413		644	698	28	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	466	380	240		94	636	90		125	780	413		644	698	28	
Added Vol:	0	33	0		0	65	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	466	413	240		94	701	90		125	780	413		644	698	28	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	507	449	261		102	762	98		136	848	449		700	759	30	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	507	449	261		102	762	98		136	848	449		700	759	30	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	507	449	261		102	762	98		136	848	449		700	759	30	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.90	0.84	0.84		0.90	0.89	0.83		0.90	0.85	0.85		0.90	0.89	0.89	
Lanes:	2.00	2.00	1.00		2.00	3.00	1.00		2.00	3.00	1.00		2.00	3.85	0.15	
Final Sat.:	3432	3202	1601		3432	5083	1583		3432	4819	1606		3432	6477	260	
Capacity Analysis Module:																
Vol/Sat:	0.15	0.14	0.16		0.03	0.15	0.06		0.04	0.18	0.28		0.20	0.12	0.12	
Crit Moves:	****					****					****		****			
Green/Cycle:	0.17	0.28	0.28		0.05	0.17	0.17		0.14	0.31	0.31		0.23	0.41	0.41	
Volume/Cap:	0.89	0.49	0.57		0.57	0.89	0.37		0.29	0.56	0.89		0.89	0.29	0.29	
Delay/Veh:	56.4	30.1	31.3		50.9	51.7	37.7		39.1	28.8	39.6		49.2	20.0	20.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	56.4	30.1	31.3		50.9	51.7	37.7		39.1	28.8	39.6		49.2	20.0	20.0	
LOS by Move:	E	C	C		D	D	D		D	C	D		D	B	B	
HCM2k95thQ:	503	298	361		84	439	126		91	337	668		621	182	182	

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	1	0	2	0	3	0	1	2	0	3	1	0	
Lane Group:	L	RT		RT	L	T		R	L	RT		RT	L	RT		RT
#LnsInGrps:	2	3		3	2	3		1	2	4		4	2	4		4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.95	0.95		xxxx	xxxx	0.85		xxxx	0.95	0.95		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.93	0.93		0.93	0.98	0.83		0.93	0.93	0.93		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	0.91		0.97	0.91	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.84	0.84		0.90	0.89	0.83		0.90	0.85	0.85		0.90	0.89	0.89	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.17	0.28	0.28		0.05	0.17	0.17		0.14	0.31	0.31		0.23	0.41	0.41	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.92	0.93		0.99	0.99	0.95		0.96	0.91	0.97		0.98	0.81	0.81	
Q1:		7.0	5.2		6.3	1.4	7.5		2.3	1.7	6.5		12.7	9.5	3.3	3.3
UpstreamVC:	0.00	0.00	0.00		0.23	0.23	0.23		0.55	0.55	0.55		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.98	0.98	0.98		0.82	0.82	0.82		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		0.17	0.36	0.33		0.26	0.42	0.42		1.00	1.00	1.00	
Q2:		4.0	0.9		1.3	0.2	2.0		0.2	0.1	0.5		2.5	4.4	0.4	0.4
HCM2KQueue:		11.0	6.2		7.6	1.6	9.5		2.5	1.8	7.1		15.2	14.0	3.7	3.7
70th%Factor:	1.18	1.19	1.18		1.20	1.18	1.19		1.20	1.18	1.17		1.17	1.19	1.19	
HCM2k70thQ:		13.0	7.3		9.0	2.0	11.2		3.0	2.1	8.4		17.8	16.4	4.4	4.4
85th%Factor:	1.51	1.54	1.53		1.58	1.52	1.58		1.58	1.54	1.48		1.49	1.57	1.57	
HCM2k85thQ:		16.6	9.6		11.7	2.6	14.4		3.9	2.8	10.9		22.5	20.8	5.7	5.7
90th%Factor:	1.63	1.69	1.67		1.77	1.65	1.75		1.77	1.68	1.59		1.60	1.73	1.73	
HCM2k90thQ:		18.0	10.5		12.7	2.9	15.6		4.4	3.1	11.9		24.1	22.4	6.4	6.4
95th%Factor:	1.83	1.93	1.89		2.05	1.85	2.02		2.04	1.91	1.76		1.78	1.99	1.99	
HCM2k95thQ:		20.1	11.9		14.4	3.4	17.6		5.0	3.6	13.5		26.7	24.8	7.3	7.3
98th%Factor:	2.13	2.32	2.26		2.58	2.18	2.53		2.57	2.28	2.01		2.04	2.45	2.45	
HCM2k98thQ:		23.5	14.4		17.2	4.2	20.7		6.3	4.6	16.1		30.6	28.5	9.0	9.0

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #51 Eight Mile & Commercial DW #1

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[12.0]

Street Name:	Commercial Site Driveway #1						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 1			0 0 0 0 0			0 0 2 0 1			0 0 2 0 0		
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	0	0	0	0	830	0	0	698	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	830	0	0	698	0
Added Vol:	0	0	0	0	0	0	0	87	5	0	165	0
Pass-By Vol:	0	0	2	0	0	0	0	-3	3	0	0	0
Initial Fut:	0	0	2	0	0	0	0	914	8	0	863	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	2	0	0	0	0	993	9	0	938	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	2	0	0	0	0	993	9	0	938	0
Critical Gap Module:												
Critical Gp:xxxxx xxxx			6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:xxxxx xxxx			3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	497	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	519	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	519	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.3	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:xxxxx xxxx			12.0	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:xxxxx xxxx			xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:xxxxx xxxx			xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	12.0			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #51 Eight Mile & Commercial DW #1

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:							#17			#22		
Dist(miles):							0.250			0.250		
Speed (mph):							1.00			1.00		
SignalIndex:							#8			#53		
Cycle Time:							100 secs			100 secs		
InitVolume:							43	786		62	801	
Saturation:							1769	3538		1769	3538	
ArrivalType:							4	4		4	4	
G/C:							0.10	0.37		0.20	0.74	
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:							0.127	0.499		0.268	0.985	
gq1:							2.12	11.12		2.56	0.35	
gq2:							0.07	4.68		0.13	0.15	
gq:							2.19	15.80		2.69	0.50	
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:							0.400			0.400		
beta:							0.714			0.714		
ta (secs):							900.000			900.000		
F:							0.004			0.004		
f:							1.000	1.000		1.000	1.000	
vcmax:							15	210		18	7	
vcg:							16	278		23	270	
vcmin:							2000	2000		2000	2000	
tp:							0.0	0.0		0.0	0.0	
p:							0.000			0.000		
*** Computation 3: Platoon Event Periods												
pdom/psubo:							0.000/0.000/Unconstrained					
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	1463	1932	497	1435	1940	469	0	xxxxx	xxxxx	0	xxxxx	xxxxx
AdjCnflVol:	1463	1932	497	1435	1940	469	0	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
ConflictVol:	1463	1932	497	1435	1940	469	0	xxxxx	xxxxx	0	xxxxx	xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	119	65	519	94	65	541	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
Potent Cap.:	119	65	519	94	65	541	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #52 Eight Mile & Commercial DW #2

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[10.5]

Street Name:	Commercial Site Driveway #2						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 1			0 0 0 0 0			0 0 2 1 0			0 0 2 0 0		
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	0	0	0	0	830	0	0	698	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	830	0	0	698	0
Added Vol:	0	0	5	0	0	0	0	82	5	0	165	0
Pass-By Vol:	0	0	2	0	0	0	0	-3	3	0	0	0
Initial Fut:	0	0	7	0	0	0	0	909	8	0	863	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	8	0	0	0	0	988	9	0	938	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	8	0	0	0	0	988	9	0	938	0
Critical Gap Module:												
Critical Gp:xxxxx xxxx			6.9	xxxxx xxxx			xxxxx xxxx			xxxxx xxxx		
FollowUpTim:xxxxx xxxx			3.3	xxxxx xxxx			xxxxx xxxx			xxxxx xxxx		
Capacity Module:												
Cnflict Vol: xxxx xxxx			334	xxxx xxxx			xxxxx xxxx			xxxxx xxxx		
Potent Cap.: xxxx xxxx			662	xxxx xxxx			xxxxx xxxx			xxxxx xxxx		
Move Cap.: xxxx xxxx			662	xxxx xxxx			xxxxx xxxx			xxxxx xxxx		
Volume/Cap: xxxx xxxx			0.01	xxxx xxxx			xxxx xxxx			xxxx xxxx		
Level Of Service Module:												
2Way95thQ: xxxx xxxx			0.9	xxxx xxxx			xxxxx xxxx			xxxxx xxxx		
Control Del:xxxxx xxxx			10.5	xxxxx xxxx			xxxxx xxxx			xxxxx xxxx		
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.: xxxx xxxx			xxxxx	xxxx xxxx			xxxxx xxxx			xxxxx xxxx		
SharedQueue:xxxxx xxxx			xxxxx	xxxxx xxxx			xxxxx xxxx			xxxxx xxxx		
Shrd ConDel:xxxxx xxxx			xxxxx	xxxxx xxxx			xxxxx xxxx			xxxxx xxxx		
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	10.5			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #52 Eight Mile & Commercial DW #2

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:							#17			#22		
Dist(miles):							0.250			0.250		
Speed (mph):							1.00			1.00		
SignalIndex:							#8			#53		
Cycle Time:							100 secs			100 secs		
InitVolume:							43	786		62	801	
Saturation:							1769	3538		1769	3538	
ArrivalType:							4	4		4	4	
G/C:							0.10	0.37		0.20	0.74	
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:							0.127	0.499		0.268	0.985	
gq1:							2.12	11.12		2.56	0.35	
gq2:							0.07	4.68		0.13	0.15	
gq:							2.19	15.80		2.69	0.50	
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:							0.400			0.400		
beta:							0.714			0.714		
ta (secs):							900.000			900.000		
F:							0.004			0.004		
f:							1.000	1.000		1.000	1.000	
vcmax:							15	210		18	7	
vcg:							16	278		23	270	
vcmin:							2000	2000		2000	2000	
tp:							0.0	0.0		0.0	0.0	
p:							0.000			0.000		
*** Computation 3: Platoon Event Periods												
pdom/psubo:							0.000/0.000/Unconstrained					
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:1461	1930	334	1267	1935	469	0	xxxxx	xxxxx	0	xxxxx	xxxxx	
AdjCnflVol: 1461	1930	334	1267	1935	469	0	xxxxx	xxxxx	0	xxxxx	xxxxx	
UpstreamAdj:1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	
ConflictVol:1461	1930	334	1267	1935	469	0	xxxxx	xxxxx	0	xxxxx	xxxxx	
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap: 120	65	662	125	65	541	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx	
UpstreamAdj:1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	
Potent Cap.: 120	65	662	125	65	541	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx	

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #53 Eight Mile Road & Road C

Cycle (sec):	100	Critical Vol./Cap.(X):	0.464
Loss Time (sec):	6	Average Delay (sec/veh):	12.9
Optimal Cycle:	26	Level Of Service:	B

Street Name:	Road C					Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0
	0	0	2	0	1	1	0	2	0	0		
Volume Module:	AM Peak Hour											
Base Vol:	0	0	0	0	0	0	0	830	0	0	698	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	830	0	0	698	0
Added Vol:	62	0	136	0	0	0	0	55	32	115	103	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	62	0	136	0	0	0	0	885	32	115	801	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	67	0	148	0	0	0	0	962	35	125	871	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	67	0	148	0	0	0	0	962	35	125	871	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	67	0	148	0	0	0	0	962	35	125	871	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.93	0.83	0.93	0.93	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	1769	0	1583	0	0	0	0	3538	1583	1769	3538	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.09	0.00	0.00	0.00	0.00	0.27	0.02	0.07	0.25	0.00
Crit Moves:			****					****		****		
Green/Cycle:	0.20	0.00	0.20	0.00	0.00	0.00	0.00	0.59	0.59	0.15	0.74	0.00
Volume/Cap:	0.19	0.00	0.46	0.00	0.00	0.00	0.00	0.46	0.04	0.46	0.33	0.00
Delay/Veh:	33.4	0.0	36.2	0.0	0.0	0.0	0.0	11.9	8.8	39.9	4.6	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.4	0.0	36.2	0.0	0.0	0.0	0.0	11.9	8.8	39.9	4.6	0.0
LOS by Move:	C	A	D	A	A	A	A	B	A	D	A	A
HCM2k95thQ:	86	0	210	0	0	0	0	258	12	193	41	0

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #53 Eight Mile Road & Road C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	0 1	0	0	0	0 0	0	0	2	0 1	1	0	2	0 0
Lane Group:	L	xxxx		R	xxxx	xxxx	xxxx	xxxx		T		R	L		T	xxxx
#LnsInGrps:	1	0		1	0	0	0	0		2		1	1		2	0
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx				1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	1.00	1.00	1.00	1.00	xxxxx				
Hev Veh Adj:	0.98	xxxx	0.98	xxxx	xxxx	xxxxx	xxxx	0.98	0.98	0.98	0.98	xxxxx				
Grade Adj:	1.00	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	1.00	1.00	1.00	1.00	xxxxx				
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	1.00	xxxxx				
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	1.00	xxxxx				
Area Adj:	1.00	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	1.00	1.00	1.00	1.00	xxxxx				
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	xxxxx	xxxx	xxxx	0.85	xxxx	xxxx	xxxxx				
LT Adj:	0.95	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.95	xxxx	xxxxx				
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
HCM Sat Adj:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.98	0.83	0.93	0.98	1.00				
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00				
Fnl Sat Adj:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.93	0.83	0.93	0.93	1.00				
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00				

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #53 Eight Mile Road & Road C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.20	0.00	0.20	0.00	0.00	0.00	0.00	0.59	0.59	0.15	0.74	0.00
ArrivalType:		4			4			4			4	
ProgFactor:	0.93	1.00	0.95	1.00	1.00	1.00	1.00	0.60	0.53	0.96	0.07	1.00
Q1:	1.4	0.0	3.4	0.0	0.0	0.0	0.0	4.8	0.2	3.1	0.3	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.64	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.72	0.72	0.00	0.00	0.00
EarlyArrAdj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.56	0.51	1.00	1.00	0.00
Q2:	0.2	0.0	0.8	0.0	0.0	0.0	0.0	0.5	0.0	0.8	0.5	0.0
HCM2KQueue:	1.7	0.0	4.3	0.0	0.0	0.0	0.0	5.3	0.2	3.9	0.8	0.0
70th%Factor:	1.20	1.20	1.19	1.20	1.20	1.20	1.20	1.19	1.20	1.19	1.20	1.20
HCM2k70thQ:	2.0	0.0	5.1	0.0	0.0	0.0	0.0	6.3	0.3	4.6	0.9	0.0
85th%Factor:	1.58	1.60	1.56	1.60	1.60	1.60	1.60	1.55	1.60	1.56	1.59	1.60
HCM2k85thQ:	2.7	0.0	6.7	0.0	0.0	0.0	0.0	8.2	0.4	6.1	1.3	0.0
90th%Factor:	1.77	1.80	1.72	1.80	1.80	1.80	1.80	1.71	1.80	1.73	1.78	1.80
HCM2k90thQ:	3.0	0.0	7.3	0.0	0.0	0.0	0.0	9.0	0.4	6.7	1.4	0.0
95th%Factor:	2.05	2.10	1.97	2.10	2.10	2.10	2.10	1.95	2.09	1.98	2.07	2.10
HCM2k95thQ:	3.4	0.0	8.4	0.0	0.0	0.0	0.0	10.3	0.5	7.7	1.6	0.0
98th%Factor:	2.58	2.70	2.42	2.70	2.70	2.70	2.70	2.37	2.68	2.44	2.64	2.70
HCM2k98thQ:	4.3	0.0	10.3	0.0	0.0	0.0	0.0	12.5	0.6	9.5	2.1	0.0

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #54 West Lane & Commercial DW #3

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[10.2]

Street Name:	West Lane						Commercial Site Driveway #3					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	1
Volume Module:AM Peak Hour																		
Base Vol:	0	735	0	0	1073	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	735	0	0	1073	0	0	0	0	0	0	0
Added Vol:	0	84	9	0	79	0	0	0	0	0	0	2
Pass-By Vol:	0	-3	3	0	0	0	0	0	0	0	0	2
Initial Fut:	0	816	12	0	1152	0	0	0	0	0	0	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	887	13	0	1252	0	0	0	0	0	0	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	887	13	0	1252	0	0	0	0	0	0	4
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	302
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	694
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	694
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.5
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	10.2
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	B
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			10.2		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

```
Intersection #54 West Lane & Commercial DW #3
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                        #99
Dist(miles):                       0.250
Speed (mph):                        1.00
SignalIndex:                       #8
Cycle Time:                          100 secs
InitVolume:                    156   449
Saturation:                   1769  3538
ArrivalType:                     4     4
G/C:                           0.10  0.14
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                            0.127 0.183
gq1:                           7.70 10.36
gq2:                           1.03  2.11
gq:                            8.72 12.47
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                             0.350
beta:                              0.741
ta (secs):                        900.000
F:                                  0.004
f:                            1.000 1.000
vcmax:                           65   184
vcg:                             65   186
vcmin:                        3000  3000
tp:                            0.0   0.0
p:                                 0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1548  2152   417 1311  2146   302
AdjCnflVol:    0 xxxxx xxxxx    0 xxxxx xxxxx 1548  2152   417 1311  2146   302
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1548  2152   417 1311  2146   302
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1622 xxxxx xxxxx 1622 xxxxx xxxxx   78    47   584  150    48   694
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1622 xxxxx xxxxx 1622 xxxxx xxxxx   78    47   584  150    48   694
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EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

```
Intersection #55 West Lane & Commercial DW #4
Average Delay (sec/veh):      0.0       Worst Case Level Of Service: B[ 10.2]
Street Name:            West Lane                Commercial Site Driveway #4
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  2  1  0    0  0  3  0  0    0  0  0  0  0    0  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:AM Peak Hour
Base Vol:       0  735     0     0 1073     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  735     0     0 1073     0     0    0     0     0    0     0
Added Vol:      0   91     9     0   79     0     0    0     0     0    0     1
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0  826     9     0 1152     0     0    0     0     0    0     1
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0  898    10     0 1252     0     0    0     0     0    0     1
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0  898    10     0 1252     0     0    0     0     0    0     1
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.9
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   304
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   692
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   692
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.00
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.1
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  10.2
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     B
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             10.2
ApproachLOS:         *                *                *                B
Note: Queue reported is the distance per lane in feet.
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EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #55 West Lane & Commercial DW #4

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			12 feet			12 feet			12 feet	

Time Period: 0.25 hour

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #56 West Lane & Road A

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[10.9]

Street Name:	West Lane									Road A								
Approach:	North Bound					South Bound					East Bound					West Bound		
Movement:	L	T	R			L	T	R			L	T	R			L	T	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign		
Rights:	Include					Include					Include					Include		
Lanes:	0	0	2	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
Volume Module:AM Peak Hour																				
Base Vol:	0	735	0		0	1073	0		0	0	0	0	0		0	0	0	0
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Initial Bse:	0	735	0		0	1073	0		0	0	0	0	0		0	0	0	0
Added Vol:	0	49	82		0	79	0		0	0	0	0	0		0	0	0	51
PasserByVol:	0	0	0		0	0	0		0	0	0	0	0		0	0	0	0
Initial Fut:	0	784	82		0	1152	0		0	0	0	0	0		0	0	0	51
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92		0.92	0.92	0.92	0.92
PHF Volume:	0	852	89		0	1252	0		0	0	0	0	0		0	0	0	55
Reduct Vol:	0	0	0		0	0	0		0	0	0	0	0		0	0	0	0
FinalVolume:	0	852	89		0	1252	0		0	0	0	0	0		0	0	0	55
Critical Gap Module:																		
Critical Gp:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx	xxxx		xxxxx	xxxxx	xxxx	6.9
FollowUpTim:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx	xxxx		xxxxx	xxxxx	xxxx	3.3
Capacity Module:																		
Cnflict Vol:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	329
Potent Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	667
Move Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	667
Volume/Cap:	xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		xxxx	0.08
Level Of Service Module:																		
2Way95thQ:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	6.8
Control Del:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxx	10.9
LOS by Move:	*	*	*		*	*	*		*	*	*		*	*	*		*	B
Movement:	LT - LTR - RT					LT - LTR - RT					LT - LTR - RT					LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxx	xxxxx
Shared LOS:	*	*	*		*	*	*		*	*	*		*	*	*		*	*
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				10.9					
ApproachLOS:	*				*				*				B					

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #56 West Lane & Road A

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:       #106             #99
Dist(miles):      0.250            0.250
Speed (mph):       1.00             1.00
SignalIndex:      #16              #8
Cycle Time:         100 secs         100 secs
InitVolume:     0   580        156   449
Saturation:     0  3538       1769  3538
ArrivalType:    0     4          4     4
G/C:         0.00  0.39       0.10  0.14
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:          0.000 0.521      0.127 0.183
gq1:         0.00  7.86       7.70 10.36
gq2:         0.00  2.20       1.03  2.11
gq:          0.00 10.05       8.72 12.47
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:            0.400            0.400
beta:             0.714            0.714
ta (secs):       900.000           900.000
F:                0.004            0.004
f:          1.000 1.000      1.000 1.000
vcmax:          0   135         59   167
vcg:            0   203         59   169
vcmin:       2000  2000       2000  2000
tp:           0.0   0.0        0.0   0.0
p:                0.000            0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1536  2193   626 1523  2149   329
AdjCnflVol:    0 xxxxx xxxxx    0 xxxxx xxxxx 1536  2193   626 1523  2149   329
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1536  2193   626 1523  2149   329
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1622 xxxxx xxxxx 1622 xxxxx xxxxx   79    45   427  109    48   667
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1622 xxxxx xxxxx 1622 xxxxx xxxxx   79    45   427  109    48   667
```


EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #57 Eight Mile & Hi Dens Res DW #1

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[14.1]

```
Street Name:  High Density Resid Driveway #1          Eight Mile Road
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  0    0  0  1  1  0    0  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:AM Peak Hour
Base Vol:       0    0     0     0    0     0     0  830     0     0  698     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0     0    0     0     0  830     0     0  698     0
Added Vol:      0    0    68     0    0     0     0  185    17     0  155     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0    68     0    0     0     0 1015    17     0  853     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0    74     0    0     0     0 1103    18     0  927     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0    74     0    0     0     0 1103    18     0  927     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   561  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx   471  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx   471  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.16  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx  13.8  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx  14.1 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     B     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      14.1           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
```

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #57 Eight Mile & Hi Dens Res DW #1

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #58 Eight Mile & Hi Dens Res DW #2

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[14.5]

Street Name:	High Density Resid Driveway #2									Eight Mile Road		
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 1			0 0 0 0 0			0 0 1 1 0			0 0 2 0 0		
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	0	0	0	0	830	0	0	698	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	830	0	0	698	0
Added Vol:	0	0	68	0	0	0	0	236	17	0	155	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	68	0	0	0	0	1066	17	0	853	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	74	0	0	0	0	1159	18	0	927	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	74	0	0	0	0	1159	18	0	927	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	589	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	452	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	452	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.16	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	14.5	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	14.5	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	14.5			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #58 Eight Mile & Hi Dens Res DW #2

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	2%	2%	2%	2%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0
Pedestrian Walk Speed: 4.00 feet/sec				
LaneWidth:	12 feet	12 feet	12 feet	12 feet
Time Period: 0.25 hour				

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #60 Eight Mile & Industrial DW #1

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[13.0]

Street Name:	Industrial Site Driveway #2								Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Volume Module:AM Peak Hour																				
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	779	0	0	637	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	779	0	0	637	0				
Added Vol:	0	0	1	0	0	0	0	0	0	0	0	304	2	0	170	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	1	0	0	0	0	0	0	0	0	1083	2	0	807	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92				
PHF Volume:	0	0	1	0	0	0	0	0	0	0	0	1177	2	0	877	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	0	0	1	0	0	0	0	0	0	0	0	1177	2	0	877	0				
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	590	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	451	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	451	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	0.2	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	13.0	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*								
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT								
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	13.0			xxxxxx			xxxxxx			xxxxxx										
ApproachLOS:	B			*			*			*										

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #60 Eight Mile & Industrial DW #1

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	2%	2%	2%	2%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0
Pedestrian Walk Speed: 4.00 feet/sec				
LaneWidth:	12 feet	12 feet	12 feet	12 feet
Time Period: 0.25 hour				

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #61 Eight Mile & Industrial DW #2

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[13.0]

Street Name:	Industrial Site Driveway #2												Eight Mile Road					
Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Rights:	Include						Include						Include						Include					
Lanes:	0	0	0	0	1		0	0	0	0	0		0	0	1	1	0		0	0	2	0	0	
Volume Module:AM Peak Hour																								
Base Vol:	0		0		0		0		0		0		0		779		0		0		637		0	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0		0		0		0		0		0		0		779		0		0		637		0	
Added Vol:	0		0		1		0		0		0		0		303		2		0		170		0	
PasserByVol:	0		0		0		0		0		0		0		0		0		0		0		0	
Initial Fut:	0		0		1		0		0		0		0		1082		2		0		807		0	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0		0		1		0		0		0		0		1176		2		0		877		0	
Reduct Vol:	0		0		0		0		0		0		0		0		0		0		0		0	
FinalVolume:	0		0		1		0		0		0		0		1176		2		0		877		0	
Critical Gap Module:																								
Critical Gp:	xxxxx	xxxx			6.9		xxxxx	xxxx			xxxxx		xxxxx		xxxx		xxxxx		xxxxx		xxxx		xxxxx	
FollowUpTim:	xxxxx	xxxx			3.3		xxxxx	xxxx			xxxxx		xxxxx		xxxx		xxxxx		xxxxx		xxxx		xxxxx	
Capacity Module:																								
Cnflict Vol:	xxxx	xxxx			589		xxxx	xxxx			xxxxx		xxxx		xxxx		xxxxx		xxxx		xxxx		xxxxx	
Potent Cap.:	xxxx	xxxx			451		xxxx	xxxx			xxxxx		xxxx		xxxx		xxxxx		xxxx		xxxx		xxxxx	
Move Cap.:	xxxx	xxxx			451		xxxx	xxxx			xxxxx		xxxx		xxxx		xxxxx		xxxx		xxxx		xxxxx	
Volume/Cap:	xxxx	xxxx			0.00		xxxx	xxxx			xxxx		xxxx		xxxx		xxxx		xxxx		xxxx		xxxx	
Level Of Service Module:																								
2Way95thQ:	xxxx	xxxx			0.2		xxxx	xxxx			xxxxx		xxxx		xxxx		xxxxx		xxxx		xxxx		xxxxx	
Control Del:	xxxxx	xxxx			13.0		xxxxx	xxxx			xxxxx		xxxxx		xxxx		xxxxx		xxxxx		xxxx		xxxxx	
LOS by Move:	*		*		B		*		*		*		*		*		*		*		*		*	
Movement:	LT -	LTR -	RT				LT -	LTR -	RT				LT -	LTR -	RT				LT -	LTR -	RT			
Shared Cap.:	xxxx	xxxx	xxxxx				xxxx	xxxx	xxxxx				xxxx	xxxx	xxxxx				xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*		*		*		*		*		*		*		*		*		*		*		*	
ApproachDel:	13.0						xxxxxx						xxxxxx						xxxxxx					
ApproachLOS:	B						*						*						*					

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #61 Eight Mile & Industrial DW #2

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	2%	2%	2%	2%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0
LaneWidth:	12 feet	12 feet	12 feet	12 feet

Pedestrian Walk Speed: 4.00 feet/sec
Time Period: 0.25 hour

EPAP With Bridge Alternative AM Pk Hr

Future Queue Length Report (feet)

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
#3	[HCM2k95thQ]:	914	38	96	19	631	631	370	658	350	158	1106	1106
#4	[HCM2k95thQ]:	498	126	186	31	470	470	167	742	742	376	472	5
#5	[HCM2k95thQ]:	104	353	843	245	605	116	186	1040	21	757	465	59
#6	[HCM2k95thQ]:	30	396	396	336	284	284	360	360	360	383	383	383
#7	[HCM2k95thQ]:	68	68	68	108	108	108	23	63	0	39	53	53
#8	[HCM2k95thQ]:	794	158	95	79	576	443	350	500	1039	334	469	21
#9	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	5.0	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#10	[HCM2k95thQ]:	108	0	165	36	0	47	115	126	126	85	151	151
#11	[HCM2k95thQ]:	103	0	0	18	0	81	111	56	13	0	151	4
#14	[2Way95thQ]:	xxxx	xxxx	xxxx	35.8	35.8	xxxx	xxxx	xxxx	xxxx	9.3	xxxx	38.4
#15	[2Way95thQ]:	14.9	14.9	xxxx	xxxx	xxxx	xxxx	77.8	xxxx	6.2	xxxx	xxxx	xxxx
#16	[HCM2k95thQ]:	0	317	96	94	308	0	0	0	0	336	0	20
#17	[HCM2k95thQ]:	135	66	140	103	129	11	15	164	115	197	73	73
#18	[HCM2k95thQ]:	115	395	323	319	412	35	76	54	128	203	24	330
#19	[HCM2k95thQ]:	319	66	170	364	111	285	244	351	289	240	236	239
#20	[2Way95thQ]:	xxxx	xxxx	xxxx	3.7	3.7	xxxx	xxxx	xxxx	xxxx	141	xxxx	2.9
#21	[2Way95thQ]:	24.3	24.3	xxxx	xxxx	xxxx	xxxx	164	xxxx	65.3	xxxx	xxxx	xxxx
#24	[HCM2k95thQ]:	181	234	234	105	573	573	189	189	148	314	25	25
#25	[HCM2k95thQ]:	44	302	67	171	361	361	123	186	186	290	169	169
#26	[HCM2k95thQ]:	218	204	147	123	389	221	236	327	327	277	232	73
#27	[HCM2k95thQ]:	503	298	361	84	439	126	91	337	668	621	182	182
#51	[2Way95thQ]:	xxxx	xxxx	0.3	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#52	[2Way95thQ]:	xxxx	xxxx	0.9	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#53	[HCM2k95thQ]:	86	0	210	0	0	0	0	258	12	193	41	0
#54	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.5
#55	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.1
#56	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	6.8
#57	[2Way95thQ]:	xxxx	xxxx	13.8	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#58	[2Way95thQ]:	xxxx	xxxx	14.5	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#60	[2Way95thQ]:	xxxx	xxxx	0.2	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#61	[2Way95thQ]:	xxxx	xxxx	0.2	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

EPAP With Bridge Alternative PM Pk Hr

Scenario Report

Scenario:	EPAP + Bridge Alt PM
Command:	EPAP + Bridge Alt PM
Volume:	EPAP Bridge Alt PM
Geometry:	EPAP Proj
Impact Fee:	Default Impact Fee
Trip Generation:	PM Pk Hr
Trip Distribution:	EPAP With Bridge PM
Paths:	EPAP Bridge Alt
Routes:	Default Route
Configuration:	Default Configuration

EPAP With Bridge Alternative PM Pk Hr

Trip Generation Report

Forecast for PM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	750.00	ElemSchStudent	0.07	0.08	53	60	113	7.2
1	Village West	738.00	Tra Vigne SFDU	0.52	0.30	384	221	605	38.7
1	Village West	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	2.63	2.85	0	0	0	0.0
1	Village West	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
1	Village West	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
1	Village West	0.00	GP Alt MFDU	0.41	0.22	0	0	0	0.0
1	Village West	1.00	Tra V Internal	-64.00	-64.00	-64	-64	-128	-8.2
1	Village West	0.00	GP Alt Interna	-76.00	-76.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-106.00	-111.00	0	0	0	0
1	Village West	0.00	Tra Vigne MFDU	0.12	0.48	0	0	0	0.0
	Zone 1 Subtotal					373	217	590	37.8
2	Village East	418.00	Tra Vigne SFDU	0.52	0.30	217	125	342	21.9
2	Village East	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
2	Village East	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
2	Village East	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
	Zone 2 Subtotal					217	125	342	21.9
3	Commercial	101.50	Tra V Comm KSF	2.86	3.10	290	315	605	38.7
3	Commercial	1.00	Tra V Pass-By	-90.00	-94.00	-90	-94	-184	-11.8
	Zone 3 Subtotal					200	221	421	27.0
4	Industrial	21.40	Indust KSF	0.05	0.17	1	4	5	0.3
	Zone 4 Subtotal					1	4	5	0.3
5	Hi Dens Res	340.00	Tra Vigne MFDU	0.12	0.48	41	163	204	13.1
	Zone 5 Subtotal					41	163	204	13.1
TOTAL						832	730	1562	100.0

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EPAP With Bridge Alternative PM Pk Hr

Trip Distribution Report

Percent Of Trips EPAP With Bridge PM

Zone	To Gates 1	2	5	6	8	9	10	11	13	14	15
1	2.0	1.0	2.0	4.0	5.0	2.0	2.0	2.0	7.0	1.0	3.0
2	2.0	1.0	2.0	4.0	5.0	2.0	2.0	2.0	7.0	1.0	3.0
3	2.0	1.0	2.0	4.0	5.0	2.0	2.0	2.0	7.0	1.0	3.0
4	2.0	1.0	2.0	4.0	5.0	2.0	2.0	2.0	7.0	1.0	3.0
5	2.0	1.0	2.0	4.0	5.0	2.0	2.0	2.0	7.0	1.0	3.0

Zone	To Gates 16	17	18	19	20	22	23
1	5.0	2.0	2.0	33.0	3.0	7.0	17.0
2	5.0	2.0	2.0	33.0	3.0	7.0	17.0
3	5.0	2.0	2.0	33.0	3.0	7.0	17.0
4	5.0	2.0	2.0	33.0	3.0	7.0	17.0
5	5.0	2.0	2.0	33.0	3.0	7.0	17.0

EPAP With Bridge Alternative PM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	D	42.4	0.915	D	43.8	0.940	+ 1.374 D/V
# 4 Eight Mile Rd & Davis Rd	C	29.0	0.812	C	30.4	0.844	+ 1.389 D/V
# 5 Eight Mile & Lower Sacto Rd	D	41.4	0.918	D	52.2	1.015	+10.794 D/V
# 6 West Lane & Armstrong Road	C	32.8	0.718	C	32.9	0.728	+ 0.065 D/V
# 7 West Lane & Ham Lane	A	4.3	0.253	A	5.2	0.269	+ 0.886 D/V
# 8 Eight Mile Rd & West Ln	E	55.2	1.014	E	69.2	1.068	+14.023 D/V
# 9 Eight Mile Road & Ham Lane	B	12.1	0.053	B	13.8	0.076	+ 1.692 D/V
# 10 Eight Mile & Leach Rd/St G	A	1.3	0.304	B	11.7	0.456	+10.388 D/V
# 11 Eight Mile & MickeGrove/Holman	A	4.6	0.331	B	12.9	0.498	+ 8.234 D/V
# 14 SR99 W Front & SB Ramps 8 Mile	B	11.8	0.374	B	12.7	0.394	+ 0.834 D/V
# 15 SR99 E Front & NB Ramps 8 Mile	C	24.8	0.658	F	52.7	0.931	+27.855 D/V
# 16 West & L.C.MarkTaylor/Marlette	A	5.9	0.354	B	14.9	0.577	+ 8.946 D/V
# 17 Holman & Lt Col Mark Taylor	C	29.4	0.385	C	30.8	0.420	+ 1.382 D/V
# 18 Morada Lane & West Lane	C	24.6	0.496	C	25.4	0.657	+ 0.851 D/V
# 19 Morada Lane & Holman Road	C	32.1	0.501	C	32.4	0.521	+ 0.353 D/V
# 20 SR99 W Front & SB Ramps Morada	C	23.3	0.693	C	24.1	0.703	+ 0.715 D/V
# 21 SR99 E Front & NB Ramps Morada	D	27.3	0.796	D	30.6	0.842	+ 3.297 D/V
# 24 West Ln & West Ln Frontage Rd	B	19.5	0.550	B	18.8	0.634	-0.654 D/V
# 25 West Lane & Knickerbocker Dr	C	24.7	0.544	C	23.1	0.611	-1.668 D/V
# 26 West Lane & Hammer Lane	D	35.8	0.732	D	35.8	0.732	-0.028 D/V
# 27 Hammer Lane & Holman Road	D	39.7	0.903	D	39.7	0.902	+ 0.006 D/V
# 51 Eight Mile & Commercial DW #1	A	0.0	0.000	B	12.6	0.067	+12.612 D/V
# 52 Eight Mile & Commercial DW #2	A	0.0	0.000	B	11.4	0.116	+11.408 D/V
# 53 Eight Mile Road & Road C	A	0.3	0.306	B	12.3	0.504	+12.006 D/V

EPAP With Bridge Alternative PM Pk Hr

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 54 West Lane & Commercial DW #3	A	0.0	0.000	B	11.6	0.081	+11.649 D/V
# 55 West Lane & Commercial DW #4	A	0.0	0.000	B	11.3	0.017	+11.261 D/V
# 56 West Lane & Road A	A	0.0	0.000	B	11.9	0.042	+11.860 D/V
# 57 Eight Mile & Hi Dens Res DW #1	A	0.0	0.000	B	14.8	0.195	+14.756 D/V
# 58 Eight Mile & Hi Dens Res DW #2	A	0.0	0.000	C	15.4	0.205	+15.373 D/V
# 60 Eight Mile & Industrial DW #1	A	0.0	0.000	B	13.1	0.005	+13.086 D/V
# 61 Eight Mile & Industrial DW #2	A	0.0	0.000	B	13.1	0.005	+13.100 D/V

EPAP With Bridge Alternative PM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 9 Eight Mile Road & Ham Lane	??? / ???	No / No
# 14 SR99 W Front & SB Ramps 8 Mile	??? / ???	No / No
# 15 SR99 E Front & NB Ramps 8 Mile	??? / ???	Yes / No
# 20 SR99 W Front & SB Ramps Morada	??? / ???	No / No
# 21 SR99 E Front & NB Ramps Morada	??? / ???	Yes / Yes
# 51 Eight Mile & Commercial DW #1	??? / ???	No / No
# 52 Eight Mile & Commercial DW #2	??? / ???	No / No
# 54 West Lane & Commercial DW #3	??? / ???	No / No
# 55 West Lane & Commercial DW #4	??? / ???	No / No
# 56 West Lane & Road A	??? / ???	No / No
# 57 Eight Mile & Hi Dens Res DW #1	??? / ???	No / No
# 58 Eight Mile & Hi Dens Res DW #2	??? / ???	No / No
# 60 Eight Mile & Industrial DW #1	??? / ???	No / No
# 61 Eight Mile & Industrial DW #2	??? / ???	No / No

EPAP With Bridge Alternative PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #9 Eight Mile Road & Ham Lane

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	1	1	0
Initial Vol:	0		0		0	0		0		31	0	1088			0	0	1076			31
ApproachDel:	xxxxxx					13.8					xxxxxx					xxxxxx				

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=31]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2226]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP With Bridge Alternative PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #9 Eight Mile Road & Ham Lane

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	1	1	0
Initial Vol:	0		0		0	0		0		31	0	1088			0	0	1076			31

Major Street Volume: 2195
Minor Approach Volume: 31
Minor Approach Volume Threshold: 14 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
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EPAP With Bridge Alternative PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	112			7	363	143			0	0	0		0	26		0	335		
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					12.7				

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.3]
   FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=361]
   SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=986]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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EPAP With Bridge Alternative PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	112			7	363	143			0	0	0		0	26		0	335		

Major Street Volume: 625
Minor Approach Volume: 361
Minor Approach Volume Threshold: 440

SIGNAL WARRANT DISCLAIMER
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EPAP With Bridge Alternative PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	60	234			0		0	204	188		376		0		50		0		0	0
ApproachDel:	xxxxxx					xxxxxx					52.7					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=6.2]
   SUCCEED - Vehicle-hours >= 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=426]
   SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1112]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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EPAP With Bridge Alternative PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	60	234			0		0	204	188		376		0		50		0		0	0

Major Street Volume: 686
Minor Approach Volume: 426
Minor Approach Volume Threshold: 536

SIGNAL WARRANT DISCLAIMER
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EPAP With Bridge Alternative PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #20 SR99 W Front & SB Ramps Morada

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0		73		308	30		101		0	0		0		0	372		0		16
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					24.1				

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=2.6]
   FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=388]
   SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=900]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP With Bridge Alternative PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #20 SR99 W Front & SB Ramps Morada

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0		73		308	30		101		0	0		0		0	372		0		16

Major Street Volume: 512
Minor Approach Volume: 388
Minor Approach Volume Threshold: 503

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP With Bridge Alternative PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #21 SR99 E Front & NB Ramps Morada

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0
Initial Vol:	190	223		0		0	262		13		120		0		579		0		0	
ApproachDel:	xxxxxx					xxxxxx					30.6					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=5.9]
   SUCCEED - Vehicle-hours >= 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=699]
   SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1387]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP With Bridge Alternative PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #21 SR99 E Front & NB Ramps Morada

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0
Initial Vol:	190	223		0		0	262		13		120		0		579		0		0	

Major Street Volume: 688
Minor Approach Volume: 699
Minor Approach Volume Threshold: 410

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP With Bridge Alternative PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #51 Eight Mile & Commercial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	2	0	1	0	0	2	0	0
Initial Vol:	0		0		31	0		0		0	0		943		49	0		1114		0
ApproachDel:	12.6					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=31]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2137]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP With Bridge Alternative PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #51 Eight Mile & Commercial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	2	0	1	0	0	2	0	0
Initial Vol:	0		0		31	0		0		0	0		943		49	0		1114		0

Major Street Volume: 2106
Minor Approach Volume: 31
Minor Approach Volume Threshold: 28 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP With Bridge Alternative PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #52 Eight Mile & Commercial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	2	1	0	0	0	2	0	0
Initial Vol:	0		0		68	0		0		0	0		923		49	0	1114			0
ApproachDel:	11.4					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=68]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2154]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP With Bridge Alternative PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #52 Eight Mile & Commercial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	2	1	0	0	0	2	0	0
Initial Vol:	0		0		68	0		0		0	0		923		49	0	1114			0

Major Street Volume: 2086
Minor Approach Volume: 68
Minor Approach Volume Threshold: 32 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP With Bridge Alternative PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #54 West Lane & Commercial DW #3

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1036			67	0	968			0	0		0	0	0	0		0	0	44
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					11.6				

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=44]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2115]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP With Bridge Alternative PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #54 West Lane & Commercial DW #3

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1036			67	0	968			0	0		0	0	0	0		0	0	44

Major Street Volume: 2071
Minor Approach Volume: 44
Minor Approach Volume Threshold: 34 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP With Bridge Alternative PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #55 West Lane & Commercial DW #4

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1095			37	0	968			0	0		0	0	0	0		0	0	9
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					11.3				

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=9]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2109]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP With Bridge Alternative PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #55 West Lane & Commercial DW #4

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1095			37	0	968			0	0		0	0	0	0		0	0	9

Major Street Volume: 2100
Minor Approach Volume: 9
Minor Approach Volume Threshold: 29 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP With Bridge Alternative PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #56 West Lane & Road A

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1111		107		0	968		0		0	0		0		0	0		0	21
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					11.9				

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=21]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2207]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP With Bridge Alternative PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #56 West Lane & Road A

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1111		107		0	968		0		0	0		0		0	0		0	21

Major Street Volume: 2186
Minor Approach Volume: 21
Minor Approach Volume Threshold: 15 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP With Bridge Alternative PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #57 Eight Mile & Hi Dens Res DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		82	0		0		0	0		1046		21	0		1145		0
ApproachDel:	14.8					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=82]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2294]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP With Bridge Alternative PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #57 Eight Mile & Hi Dens Res DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		82	0		0		0	0		1046		21	0		1145		0

Major Street Volume: 2212
Minor Approach Volume: 82
Minor Approach Volume Threshold: 11 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP With Bridge Alternative PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #58 Eight Mile & Hi Dens Res DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		82	0		0		0	0		1106		21	0		1145		0
ApproachDel:	15.4					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.4]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=82]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2354]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP With Bridge Alternative PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #58 Eight Mile & Hi Dens Res DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		82	0		0		0	0		1106		21	0		1145		0

Major Street Volume: 2272
Minor Approach Volume: 82
Minor Approach Volume Threshold: 2 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP With Bridge Alternative PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #60 Eight Mile & Industrial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		2	0		0		0	0		1094		1	0		1079		0
ApproachDel:	13.1					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=2]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2176]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP With Bridge Alternative PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #60 Eight Mile & Industrial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		2	0		0		0	0		1094		1	0		1079		0

Major Street Volume: 2174
Minor Approach Volume: 2
Minor Approach Volume Threshold: 17 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP With Bridge Alternative PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #61 Eight Mile & Industrial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		2	0		0		0	0		1096		1	0		1079		0
ApproachDel:	13.1					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=2]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2178]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP With Bridge Alternative PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #61 Eight Mile & Industrial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		2	0		0		0	0		1096		1	0		1079		0

Major Street Volume: 2176
Minor Approach Volume: 2
Minor Approach Volume Threshold: 17 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.940
Loss Time (sec):	12	Average Delay (sec/veh):	43.8
Optimal Cycle:	132	Level Of Service:	D

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1	0	1	1	0	0	1	0	1	0	2	0	1	1	0	1	1	0
Volume Module:	PM Peak Hour											
Base Vol:	422	20	49	18	61	219	174	1454	583	73	1229	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	422	20	49	18	61	219	174	1454	583	73	1229	5
Added Vol:	0	0	8	0	0	0	0	42	0	7	37	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	422	20	57	18	61	219	174	1496	583	80	1266	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	459	22	62	20	66	238	189	1626	634	87	1376	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	459	22	62	20	66	238	189	1626	634	87	1376	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	459	22	62	20	66	238	189	1626	634	87	1376	5
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.87	0.87	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	2.00	1.00	1.00	1.00	0.22	0.78	1.00	2.00	1.00	1.00	1.99	0.01
Final Sat.:	3432	1862	1583	1769	358	1286	1769	3538	1583	1769	3520	14
Capacity Analysis Module:												
Vol/Sat:	0.13	0.01	0.04	0.01	0.19	0.19	0.11	0.46	0.40	0.05	0.39	0.39
Crit Moves:	****				****			****		****		
Green/Cycle:	0.14	0.26	0.26	0.07	0.20	0.20	0.12	0.49	0.49	0.05	0.42	0.42
Volume/Cap:	0.94	0.04	0.15	0.15	0.94	0.94	0.92	0.94	0.82	0.94	0.92	0.92
Delay/Veh:	69.0	27.4	28.3	43.8	74.2	74.2	84.8	34.8	28.7	121.2	36.7	36.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.0	27.4	28.3	43.8	74.2	74.2	84.8	34.8	28.7	121.2	36.7	36.7
LOS by Move:	E	C	C	D	E	E	F	C	C	F	D	D
HCM2k95thQ:	504	23	69	35	596	596	264	932	598	162	911	911

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	2	0	1	0	1		1	0	0	1	0		1	0	2	0	1		1	0	1	1	0	
Lane Group:	L		T		R		L		RT		RT		L		T		R		L		RT		RT	
#LnsInGrps:	2		1		1		1		1		1		1		2		1		1		2		2	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:			8						8						8						8			
% Hev Veh:			2						2						2						2			
Grade:			0%						0%						0%						0%			
Parking/Hr:			No						No						No						No			
Bus Stp/Hr:			0						0						0						0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0						0						0						0			
ExclusiveRT:			Include						Include						Include						Include			
% RT Prtct:			0						0						0						0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1		xxxx		xxxx		1		xxxx		xxxx		1		xxxx		xxxx		1		xxxx		xxxx	
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Hev Veh Adj:	0.98		0.98		0.98		0.98		0.98		0.98		0.98		0.98		0.98		0.98		0.98		0.98	
Grade Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Parking Adj:	xxxx		xxxx		1.00		xxxx		1.00		1.00		xxxx		xxxx		1.00		xxxx		1.00		1.00	
Bus Stp Adj:	xxxx		xxxx		1.00		xxxx		1.00		1.00		xxxx		xxxx		1.00		xxxx		1.00		1.00	
Area Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
RT Adj:	xxxx		xxxx		0.85		xxxx		0.88		0.88		xxxx		xxxx		0.85		xxxx		1.00		1.00	
LT Adj:	0.95		xxxx		xxxxx		0.95		xxxx		xxxxx		0.95		xxxx		xxxxx		0.95		xxxx		xxxxx	
PedBike Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
HCM Sat Adj:	0.93		0.98		0.83		0.93		0.87		0.87		0.93		0.98		0.83		0.93		0.98		0.98	
Usr Sat Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
MLF Sat Adj:	0.97		1.00		1.00		1.00		1.00		1.00		1.00		0.95		1.00		1.00		0.95		0.95	
Fnl Sat Adj:	0.90		0.98		0.83		0.93		0.87		0.87		0.93		0.93		0.83		0.93		0.93		0.93	
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.14	0.26	0.26	0.07	0.20	0.20	0.12	0.49	0.49	0.05	0.42	0.42
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.88	0.89	0.98	0.99	0.99	1.00	0.95	0.88	1.00	0.96	0.96
Q1:	6.5	0.4	1.2	0.5	8.3	8.3	5.2	21.4	13.2	2.4	18.3	18.3
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.69	0.69	0.69
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.09	0.09	0.66	0.66	0.66
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.03	0.06	0.06	0.12	0.42	0.42
Q2:	4.6	0.0	0.2	0.2	5.1	5.1	0.3	0.9	0.3	0.8	3.4	3.4
HCM2KQueue:	11.1	0.4	1.3	0.7	13.4	13.4	5.4	22.3	13.4	3.2	21.7	21.7
70th%Factor:	1.18	1.20	1.20	1.20	1.17	1.17	1.19	1.16	1.17	1.19	1.16	1.16
HCM2k70thQ:	13.0	0.5	1.6	0.8	15.7	15.7	6.5	25.8	15.7	3.9	25.1	25.1
85th%Factor:	1.51	1.60	1.59	1.59	1.49	1.49	1.55	1.44	1.49	1.57	1.45	1.45
HCM2k85thQ:	16.7	0.7	2.1	1.1	19.9	19.9	8.4	32.1	20.0	5.1	31.3	31.3
90th%Factor:	1.63	1.79	1.77	1.79	1.61	1.61	1.70	1.53	1.60	1.74	1.54	1.54
HCM2k90thQ:	18.0	0.8	2.4	1.2	21.4	21.4	9.3	34.1	21.5	5.6	33.3	33.3
95th%Factor:	1.82	2.09	2.06	2.08	1.79	1.79	1.94	1.67	1.78	2.00	1.68	1.68
HCM2k95thQ:	20.2	0.9	2.8	1.4	23.9	23.9	10.6	37.3	23.9	6.5	36.4	36.4
98th%Factor:	2.13	2.67	2.60	2.65	2.06	2.06	2.36	1.88	2.06	2.48	1.89	1.89
HCM2k98thQ:	23.5	1.2	3.5	1.8	27.5	27.5	12.8	41.9	27.6	8.0	41.0	41.0

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.844
Loss Time (sec):	12	Average Delay (sec/veh):	30.4
Optimal Cycle:	89	Level Of Service:	C

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	1 1	0	1 0	2 0	1
Volume Module:	PM Peak Hour											
Base Vol:	178	85	73	8	98	114	95	1081	265	72	1098	3
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	178	85	73	8	98	114	95	1081	265	72	1098	3
Added Vol:	0	0	25	0	0	0	0	50	0	22	44	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	178	85	98	8	98	114	95	1131	265	94	1142	3
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	193	92	107	9	107	124	103	1229	288	102	1241	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	193	92	107	9	107	124	103	1229	288	102	1241	3
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	193	92	107	9	107	124	103	1229	288	102	1241	3
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.90	0.90	0.93	0.90	0.90	0.93	0.93	0.83
Lanes:	1.00	1.00	1.00	1.00	0.46	0.54	1.00	1.62	0.38	1.00	2.00	1.00
Final Sat.:	1769	1862	1583	1769	791	920	1769	2786	653	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.11	0.05	0.07	0.00	0.13	0.13	0.06	0.44	0.44	0.06	0.35	0.00
Crit Moves:	****				****			****		****		
Green/Cycle:	0.13	0.27	0.27	0.02	0.16	0.16	0.08	0.52	0.52	0.07	0.51	0.51
Volume/Cap:	0.84	0.18	0.25	0.25	0.84	0.84	0.69	0.84	0.84	0.84	0.69	0.00
Delay/Veh:	66.4	28.3	28.9	52.0	61.6	61.6	57.6	24.3	24.3	85.0	19.9	12.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.4	28.3	28.9	52.0	61.6	61.6	57.6	24.3	24.3	85.0	19.9	12.2
LOS by Move:	E	C	C	D	E	E	E	C	C	F	B	B
HCM2k95thQ:	393	101	122	28	439	439	145	744	744	262	590	2

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 1	0 1		1	0 0	1 0		1	0 1	1 0		1	0 2	0 1	
Lane Group:	L	T	R		L	RT	RT		L	RT	RT		L	T	R	
#LnsInGrps:	1	1	1		1	1	1		1	2	2		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.92	0.92		xxxx	0.97	0.97		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.90	0.90		0.93	0.95	0.95		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	0.95		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	0.98	0.83		0.93	0.90	0.90		0.93	0.90	0.90		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.13	0.27	0.27		0.02	0.16	0.16		0.08	0.52	0.52		0.07	0.51	0.51	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.89	0.90		0.99	0.99	0.99		0.86	0.86	1.00		0.80	0.66		
Q1:	5.2	1.8	2.1		0.2	6.1	6.1		2.8	16.3	16.3		2.8	11.1	0.0	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.94	0.94	0.94		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.23	0.23	0.23		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.05	0.16	0.16		1.00	1.00	1.00	
Q2:	3.2	0.2	0.3		0.3	3.3	3.3		0.1	0.8	0.8		2.6	2.1	0.0	
HCM2KQueue:	8.4	2.0	2.4		0.5	9.5	9.5		2.9	17.2	17.2		5.4	13.2	0.0	
70th%Factor:	1.18	1.20	1.19		1.20	1.18	1.18		1.19	1.17	1.17		1.19	1.17	1.20	
HCM2k70thQ:	9.9	2.4	2.9		0.6	11.2	11.2		3.4	20.0	20.0		6.4	15.5	0.0	
85th%Factor:	1.53	1.58	1.58		1.59	1.52	1.52		1.57	1.47	1.47		1.55	1.49	1.60	
HCM2k85thQ:	12.8	3.1	3.8		0.9	14.4	14.4		4.5	25.2	25.2		8.3	19.7	0.1	
90th%Factor:	1.66	1.76	1.75		1.79	1.65	1.65		1.75	1.57	1.57		1.71	1.61	1.80	
HCM2k90thQ:	13.9	3.5	4.2		1.0	15.6	15.6		5.0	27.0	27.0		9.2	21.2	0.1	
95th%Factor:	1.88	2.04	2.02		2.08	1.85	1.85		2.01	1.73	1.73		1.94	1.79	2.10	
HCM2k95thQ:	15.7	4.0	4.9		1.1	17.6	17.6		5.8	29.7	29.7		10.5	23.6	0.1	
98th%Factor:	2.23	2.56	2.53		2.66	2.18	2.18		2.50	1.97	1.97		2.36	2.06	2.70	
HCM2k98thQ:	18.6	5.1	6.1		1.4	20.7	20.7		7.2	33.8	33.8		12.7	27.2	0.1	

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.015
Loss Time (sec):	12	Average Delay (sec/veh):	52.2
Optimal Cycle:	180	Level Of Service:	D

Street Name:	Lower Sacramento Road							Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Protected			Protected			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	2	0 1	0 1	1	0 1	0 1	1	0 2	0 1	1	0 2	0 1	
Volume Module:	PM Peak Hour												
Base Vol:	49	372	339	61	334	112	98	1001	22	375	1111	42	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Initial Bse:	49	372	339	61	334	112	98	1001	22	375	1111	42	
Added Vol:	0	0	42	17	0	0	0	75	0	37	66	15	
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	
Initial Fut:	49	372	381	78	334	112	98	1076	22	412	1177	57	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
PHF Volume:	53	404	414	85	363	122	107	1170	24	448	1279	62	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	53	404	414	85	363	122	107	1170	24	448	1279	62	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
FinalVolume:	53	404	414	85	363	122	107	1170	24	448	1279	62	
Saturation Flow Module:													
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Adjustment:	0.90	0.98	0.83	0.93	0.98	0.83	0.93	0.93	0.83	0.93	0.93	0.83	
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	
Final Sat.:	3432	1862	1583	1769	1862	1583	1769	3538	1583	1769	3538	1583	
Capacity Analysis Module:													
Vol/Sat:	0.02	0.22	0.26	0.05	0.19	0.08	0.06	0.33	0.02	0.25	0.36	0.04	
Crit Moves:			****	****				****		****			
Green/Cycle:	0.02	0.26	0.26	0.05	0.28	0.28	0.08	0.33	0.33	0.25	0.49	0.49	
Volume/Cap:	0.69	0.84	1.02	1.02	0.69	0.27	0.73	1.02	0.05	1.02	0.73	0.08	
Delay/Veh:	71.9	47.9	85.6	150.3	35.9	28.2	62.3	64.1	23.1	84.3	21.8	13.4	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
AdjDel/Veh:	71.9	47.9	85.6	150.3	35.9	28.2	62.3	64.1	23.1	84.3	21.8	13.4	
LOS by Move:	E	D	F	F	D	C	E	E	C	F	C	B	
HCM2k95thQ:	101	629	815	276	483	137	236	1084	23	862	657	37	

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Lanes:	2 0 1	0 1		1 0 1	0 1		1 0 2	0 1		1 0 2	0 1	
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	1	1	1	1	1	1	2	1	1	2	1
HCM Ops Adjusted Lane Utilization Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Fnl Sat Adj:	0.90	0.98	0.83	0.93	0.98	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.02	0.26	0.26	0.05	0.28	0.28	0.08	0.33	0.33	0.25	0.49	0.49
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.97	1.00	1.00	0.95	0.89	0.99	1.00	0.84	1.00	0.83	0.69
Q1:	0.8	10.4	11.5	2.4	8.5	2.3	2.9	17.1	0.4	12.4	12.4	0.6
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	1.2	3.8	7.6	3.3	2.0	0.4	2.0	9.4	0.0	7.9	2.5	0.1
HCM2KQueue:	2.0	14.2	19.1	5.7	10.5	2.7	4.8	26.5	0.4	20.4	14.9	0.7
70th%Factor:	1.20	1.17	1.16	1.19	1.18	1.19	1.19	1.15	1.20	1.16	1.17	1.20
HCM2k70thQ:	2.4	16.6	22.2	6.8	12.4	3.2	5.7	30.5	0.5	23.6	17.4	0.8
85th%Factor:	1.58	1.49	1.46	1.55	1.51	1.57	1.56	1.42	1.60	1.45	1.48	1.59
HCM2k85thQ:	3.1	21.1	27.9	8.8	15.9	4.3	7.5	37.7	0.7	29.6	22.1	1.1
90th%Factor:	1.76	1.60	1.55	1.70	1.64	1.75	1.71	1.51	1.79	1.54	1.59	1.79
HCM2k90thQ:	3.5	22.7	29.7	9.7	17.2	4.8	8.3	39.9	0.8	31.4	23.7	1.3
95th%Factor:	2.04	1.77	1.71	1.94	1.83	2.02	1.96	1.64	2.09	1.69	1.76	2.08
HCM2k95thQ:	4.1	25.2	32.6	11.0	19.3	5.5	9.5	43.3	0.9	34.5	26.3	1.5
98th%Factor:	2.56	2.04	1.93	2.35	2.15	2.51	2.39	1.83	2.67	1.91	2.02	2.65
HCM2k98thQ:	5.1	28.9	36.9	13.3	22.6	6.8	11.5	48.4	1.2	38.9	30.1	1.9

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.728
Loss Time (sec): 12 Average Delay (sec/veh): 32.9
Optimal Cycle: 63 Level Of Service: C

Street Name:	West Lane						Armstrong Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	1 0	1	0 1	1 0	0	0 1!	0 0	0	0 1!	0 0
Volume Module:	PM Peak Hour											
Base Vol:	3	583	40	131	477	36	29	60	4	77	201	206
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	583	40	131	477	36	29	60	4	77	201	206
Added Vol:	0	29	0	0	33	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	612	40	131	510	36	29	60	4	77	201	206
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	3	665	43	142	554	39	32	65	4	84	218	224
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	665	43	142	554	39	32	65	4	84	218	224
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	665	43	142	554	39	32	65	4	84	218	224
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.92	0.92	0.93	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92
Lanes:	1.00	1.88	0.12	1.00	1.87	0.13	0.31	0.65	0.04	0.16	0.41	0.43
Final Sat.:	1769	3291	215	1769	3271	231	568	1176	78	277	723	741
Capacity Analysis Module:												
Vol/Sat:	0.00	0.20	0.20	0.08	0.17	0.17	0.06	0.06	0.06	0.30	0.30	0.30
Crit Moves:		****		****					****		****	
Green/Cycle:	0.00	0.28	0.28	0.11	0.38	0.38	0.08	0.08	0.08	0.42	0.42	0.42
Volume/Cap:	0.44	0.73	0.73	0.73	0.44	0.44	0.73	0.73	0.73	0.73	0.73	0.73
Delay/Veh:	86.5	35.5	35.5	55.9	23.1	23.1	62.7	62.7	62.7	28.2	28.2	28.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	86.5	35.5	35.5	55.9	23.1	23.1	62.7	62.7	62.7	28.2	28.2	28.2
LOS by Move:	F	D	D	E	C	C	E	E	E	C	C	C
HCM2k95thQ:	27	514	514	282	300	300	227	227	227	596	596	596

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 1	1	0	1	0 1	1	0	0	0 1!	0	0	0	0 1!	0	0
Lane Group:	L	RT		RT	L	RT		RT	LTR	LTR		LTR	LTR	LTR		LTR
#LnsInGrps:	1	2		2	1	2		2	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		4	4		4	4	4		4
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98		0.98	0.98	0.98		0.98
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
RT Adj:	xxxx	0.99	0.99		xxxx	0.99	0.99		0.99	0.99		0.94	0.94	0.94		0.94
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.99	0.99		0.99	0.99	0.99		0.99
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
HCM Sat Adj:	0.93	0.97	0.97		0.93	0.97	0.97		0.96	0.96		0.96	0.92	0.92		0.92
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
MLF Sat Adj:	1.00	0.95	0.95		1.00	0.95	0.95		1.00	1.00		1.00	1.00	1.00		1.00
Fnl Sat Adj:	0.93	0.92	0.92		0.93	0.92	0.92		0.96	0.96		0.96	0.92	0.92		0.92
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.00	0.28	0.28		0.11	0.38	0.38		0.08	0.08	0.08		0.42	0.42	0.42	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.95	0.95		0.99	0.85	0.85		0.99	0.99	0.99		0.89	0.89	0.89	
Q1:		0.1	8.9	8.9		3.8	5.5	5.5		2.7	2.7	2.7	10.9	10.9	10.9	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:		0.4	2.4	2.4		2.0	0.8	0.8		1.9	1.9	1.9	2.4	2.4	2.4	
HCM2KQueue:		0.5	11.3	11.3		5.8	6.2	6.2		4.6	4.6	4.6	13.4	13.4	13.4	
70th%Factor:	1.20	1.18	1.18		1.19	1.19	1.19		1.19	1.19	1.19		1.17	1.17	1.17	
HCM2k70thQ:		0.6	13.3	13.3		6.9	7.4	7.4		5.5	5.5	5.5	15.6	15.6	15.6	
85th%Factor:	1.59	1.51	1.51		1.55	1.54	1.54		1.56	1.56	1.56		1.49	1.49	1.49	
HCM2k85thQ:		0.8	17.0	17.0		9.0	9.6	9.6		7.2	7.2	7.2	19.9	19.9	19.9	
90th%Factor:	1.79	1.63	1.63		1.70	1.69	1.69		1.72	1.72	1.72		1.61	1.61	1.61	
HCM2k90thQ:		0.9	18.4	18.4		9.9	10.6	10.6		8.0	8.0	8.0	21.4	21.4	21.4	
95th%Factor:	2.08	1.82	1.82		1.93	1.92	1.92		1.96	1.96	1.96		1.79	1.79	1.79	
HCM2k95thQ:		1.1	20.5	20.5		11.3	12.0	12.0		9.1	9.1	9.1	23.8	23.8	23.8	
98th%Factor:	2.66	2.12	2.12		2.34	2.32	2.32		2.40	2.40	2.40		2.06	2.06	2.06	
HCM2k98thQ:		1.4	23.9	23.9		13.6	14.5	14.5		11.1	11.1	11.1	27.5	27.5	27.5	

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.269
Loss Time (sec):	9	Average Delay (sec/veh):	5.2
Optimal Cycle:	25	Level Of Service:	A

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	0	0	1!	0	0	1	0
Volume Module:PM Peak Hour												
Base Vol:	0	2	20	17	1	2	6	665	0	16	544	43
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2	20	17	1	2	6	665	0	16	544	43
Added Vol:	0	0	11	0	0	0	0	19	0	5	29	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2	31	17	1	2	6	684	0	21	573	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	2	34	18	1	2	7	743	0	23	623	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2	34	18	1	2	7	743	0	23	623	47
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2	34	18	1	2	7	743	0	23	623	47
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.86	0.86	0.74	0.74	0.74	0.93	0.93	0.95	0.93	0.92	0.92
Lanes:	0.00	0.06	0.94	0.85	0.05	0.10	1.00	2.00	0.00	1.00	1.86	0.14
Final Sat.:	0	99	1527	1200	71	141	1769	3538	0	1769	3258	244
Capacity Analysis Module:												
Vol/Sat:	0.00	0.02	0.02	0.02	0.02	0.02	0.00	0.21	0.00	0.01	0.19	0.19
Crit Moves:		****						****		****		
Green/Cycle:	0.00	0.08	0.08	0.08	0.08	0.08	0.02	0.78	0.00	0.05	0.81	0.81
Volume/Cap:	0.00	0.27	0.27	0.19	0.19	0.19	0.24	0.27	0.00	0.27	0.24	0.24
Delay/Veh:	0.0	44.2	44.2	43.6	43.6	43.6	53.0	3.1	0.0	47.6	2.2	2.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	44.2	44.2	43.6	43.6	43.6	53.0	3.1	0.0	47.6	2.2	2.2
LOS by Move:	A	D	D	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	0	66	66	40	40	40	24	19	0	49	16	16

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	0	0	0	1 0	0	0	0	1! 0	0	1	0	1 1	0	1	0	1 1 0
Lane Group:	xxxx	RT		RT	LTR	LTR	LTR		L	RT		RT	L	RT		RT
#LnsInGrps:	0	1		1	1	1	1		1	2		2	1	2		2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12	12		12	12		12	12	12		12
CrsswalkWid:		8			8					8				8		
% Hev Veh:		2			2					2				2		
Grade:		0%			0%					0%				0%		
Parking/Hr:		No			No					No				No		
Bus Stp/Hr:		0			0					0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0			0					0				0		
ExclusiveRT:		Include			Include					Include				Include		
% RT Prtct:		0			0					0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	xxxx	xxxx		xxxx	5	5	5		1	xxxx		xxxx	1	xxxx		xxxx
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	xxxx	1.00		1.00	1.00	1.00	1.00		1.00	1.00		xxxxx	1.00	1.00		1.00
Hev Veh Adj:	xxxx	0.98		0.98	0.98	0.98	0.98		0.98	0.98		xxxxx	0.98	0.98		0.98
Grade Adj:	xxxx	1.00		1.00	1.00	1.00	1.00		1.00	1.00		xxxxx	1.00	1.00		1.00
Parking Adj:	xxxx	1.00		1.00	1.00	1.00	1.00		xxxx	1.00		xxxxx	xxxx	1.00		1.00
Bus Stp Adj:	xxxx	1.00		1.00	1.00	1.00	1.00		xxxx	1.00		xxxxx	xxxx	1.00		1.00
Area Adj:	xxxx	1.00		1.00	1.00	1.00	1.00		1.00	1.00		xxxxx	1.00	1.00		1.00
RT Adj:	xxxx	0.87		0.87	0.99	0.99	0.99		xxxx	xxxx		xxxxx	xxxx	0.99		0.99
LT Adj:	xxxx	xxxx		xxxxx	0.77	0.77	0.77		0.95	xxxx		xxxxx	0.95	xxxx		xxxxx
PedBike Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
HCM Sat Adj:	1.00	0.86		0.86	0.74	0.74	0.74		0.93	0.98		1.00	0.93	0.97		0.97
Usr Sat Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
MLF Sat Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	0.95		0.95	1.00	0.95		0.95
Fnl Sat Adj:	1.00	0.86		0.86	0.74	0.74	0.74		0.93	0.93		0.95	0.93	0.92		0.92
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	0.00	1.00		1.00	1.00	1.00	1.00		1.00	0.00		1.00	1.00	1.00		1.00

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	xxxxxx	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	xxxxxx	7.19	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	xxxxxx	8.19	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	xxxxxx	8.19	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	xxxxxx	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	xxxxxx	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	xxxxxx	18	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	xxxxxx	0.85	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	0.00	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	xxxxxx	0.51	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	xxxxxx	36	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	xxxxxx	1.00	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	xxxxxx	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	xxxxxx	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	xxxxxx	1.09	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	xxxxxx	0.89	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	xxxxxx	1.37	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	xxxxxx	6.82	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	xxxxxx	0.14	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	1.00	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	xxxxxx	1.45	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	xxxxxx	1.00	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	xxxxxx	0.45	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	xxxxxx	0.77	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	xxxxxx	0.77	xxxxxx	xxxxxx

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.00	0.08	0.08	0.08	0.08	0.08	0.02	0.78	0.00	0.05	0.81	0.81
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.98	0.98	0.98	0.98	0.98	1.00	0.00	1.00	0.99	0.00	0.00
Q1:	0.0	0.9	0.9	0.5	0.5	0.5	0.2	0.0	0.0	0.6	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Q2:	0.0	0.4	0.4	0.2	0.2	0.2	0.3	0.4	0.0	0.4	0.3	0.3
HCM2KQueue:	0.0	1.3	1.3	0.8	0.8	0.8	0.5	0.4	0.0	1.0	0.3	0.3
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	0.0	1.5	1.5	0.9	0.9	0.9	0.5	0.4	0.0	1.1	0.4	0.4
85th%Factor:	1.60	1.59	1.59	1.59	1.59	1.59	1.60	1.60	1.60	1.59	1.60	1.60
HCM2k85thQ:	0.0	2.0	2.0	1.2	1.2	1.2	0.7	0.6	0.0	1.5	0.5	0.5
90th%Factor:	1.80	1.78	1.78	1.78	1.78	1.78	1.79	1.79	1.80	1.78	1.79	1.79
HCM2k90thQ:	0.0	2.3	2.3	1.4	1.4	1.4	0.8	0.7	0.0	1.7	0.6	0.6
95th%Factor:	2.10	2.06	2.06	2.07	2.07	2.07	2.08	2.09	2.10	2.07	2.09	2.09
HCM2k95thQ:	0.0	2.6	2.6	1.6	1.6	1.6	1.0	0.8	0.0	2.0	0.6	0.6
98th%Factor:	2.70	2.61	2.61	2.64	2.64	2.64	2.67	2.67	2.70	2.63	2.68	2.68
HCM2k98thQ:	0.0	3.3	3.3	2.1	2.1	2.1	1.2	1.0	0.0	2.5	0.8	0.8

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	1.068
Loss Time (sec):	12	Average Delay (sec/veh):	69.2
Optimal Cycle:	180	Level Of Service:	E

Street Name:	West Lane								Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	2	0 1	1	0	2	0 1	1	0	2	0 1	1	0	2	0 1
Volume Module:	PM Peak Hour															
Base Vol:	528	385	84		14	320	204		264	728	458		68	865	3	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	528	385	84		14	320	204		264	728	458		68	865	3	
Added Vol:	36	9	38		24	4	0		0	103	30		87	81	10	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	564	394	122		38	324	204		264	831	488		155	946	13	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	613	428	133		41	352	222		287	903	530		168	1028	14	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	613	428	133		41	352	222		287	903	530		168	1028	14	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	613	428	133		41	352	222		287	903	530		168	1028	14	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Lanes:	1.00	2.00	1.00		1.00	2.00	1.00		1.00	2.00	1.00		1.00	2.00	1.00	
Final Sat.:	1769	3538	1583		1769	3538	1583		1769	3538	1583		1769	3538	1583	
Capacity Analysis Module:																
Vol/Sat:	0.35	0.12	0.08		0.02	0.10	0.14		0.16	0.26	0.34		0.10	0.29	0.01	
Crit Moves:	****						****		****					****		
Green/Cycle:	0.32	0.38	0.38		0.07	0.13	0.13		0.15	0.33	0.33		0.09	0.27	0.27	
Volume/Cap:	1.07	0.32	0.22		0.32	0.76	1.07		1.07	0.77	1.01		1.01	1.07	0.03	
Delay/Veh:	90.7	21.9	21.0		45.3	49.0	125.0		116.4	33.4	76.6		119.0	85.2	26.8	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	90.7	21.9	21.0		45.3	49.0	125.0		116.4	33.4	76.6		119.0	85.2	26.8	
LOS by Move:	F	C	C		D	D	F		F	C	E		F	F	C	
HCM2k95thQ:	1053	193	109		78	346	557		668	626	972		336	963	14	

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	2	0 1	1	0	2	0 1	1	0	2	0 1	1	0	2	0 1
Lane Group:	L		T	R	L		T	R	L		T	R	L		T	R
#LnsInGrps:	1		2	1	1		2	1	1		2	1	1		2	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.32	0.38	0.38	0.07	0.13	0.13	0.15	0.33	0.33	0.09	0.27	0.27
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.83	0.82	0.98	0.99	1.00	1.00	0.94	1.00	1.00	1.00	0.88
Q1:	17.0	3.7	2.0	1.1	4.9	6.2	8.0	11.2	14.7	4.7	15.0	0.3
UpstreamVC:	0.58	0.58	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.39	0.39
UpstreamAdj:	0.79	0.79	0.79	0.00	0.00	0.00	0.00	0.00	0.00	0.93	0.93	0.93
EarlyArrAdj:	0.42	0.47	0.43	1.00	1.00	1.00	1.00	1.00	1.00	0.23	0.45	0.41
Q2:	8.6	0.2	0.1	0.4	2.4	6.2	7.2	2.9	8.6	2.4	8.1	0.0
HCM2KQueue:	25.6	3.9	2.2	1.5	7.3	12.4	15.2	14.1	23.4	7.0	23.1	0.3
70th%Factor:	1.15	1.19	1.19	1.20	1.18	1.17	1.17	1.17	1.16	1.18	1.16	1.20
HCM2k70thQ:	29.5	4.6	2.6	1.8	8.6	14.5	17.8	16.5	27.0	8.3	26.7	0.3
85th%Factor:	1.43	1.56	1.58	1.59	1.54	1.50	1.48	1.49	1.44	1.54	1.44	1.60
HCM2k85thQ:	36.6	6.1	3.4	2.4	11.2	18.5	22.5	21.0	33.6	10.8	33.3	0.4
90th%Factor:	1.51	1.73	1.76	1.77	1.68	1.62	1.59	1.60	1.52	1.68	1.53	1.79
HCM2k90thQ:	38.7	6.7	3.8	2.7	12.2	20.0	24.1	22.6	35.6	11.8	35.3	0.5
95th%Factor:	1.64	1.98	2.03	2.05	1.90	1.80	1.76	1.77	1.66	1.91	1.67	2.09
HCM2k95thQ:	42.1	7.7	4.4	3.1	13.8	22.3	26.7	25.0	38.9	13.4	38.5	0.6
98th%Factor:	1.84	2.44	2.55	2.59	2.27	2.09	2.01	2.04	1.87	2.28	1.87	2.68
HCM2k98thQ:	47.1	9.5	5.5	3.9	16.5	25.8	30.6	28.8	43.6	16.1	43.2	0.7

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[13.8]

Street Name:	Ham Lane								Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L -	T -	R		L -	T -	R		L -	T -	R		L -	T -	R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	1	1	0
Volume Module:	PM Peak Hour																			
Base Vol:	0	0	0	0	0	26	0	732	0	0	856	20								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	0	0	0	0	0	26	0	732	0	0	856	20								
Added Vol:	0	0	0	0	0	5	0	356	0	0	220	11								
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0								
Initial Fut:	0	0	0	0	0	31	0	1088	0	0	1076	31								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92								
PHF Volume:	0	0	0	0	0	34	0	1183	0	0	1170	34								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	0	0	0	0	0	34	0	1183	0	0	1170	34								
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	602	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	443	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	443	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	0.08	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	6.1	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	13.8	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	*	*	*	B	*	*	*	*	*	*								
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT								
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx				13.8		xxxxxx			xxxxxx										
ApproachLOS:	*				B		*			*										

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St G

Cycle (sec):	100	Critical Vol./Cap.(X):	0.456
Loss Time (sec):	12	Average Delay (sec/veh):	11.7
Optimal Cycle:	38	Level Of Service:	B

Street Name:	Leach Road/Street G						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:PM Peak Hour												
Base Vol:	0	0	0	6	0	5	6	681	0	0	854	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	6	0	5	6	681	0	0	854	5
Added Vol:	35	0	53	0	0	0	63	242	61	92	188	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	35	0	53	6	0	5	69	923	61	92	1042	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	38	0	58	7	0	5	75	1003	66	100	1133	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	38	0	58	7	0	5	75	1003	66	100	1133	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	38	0	58	7	0	5	75	1003	66	100	1133	5
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	0.93	1.00	0.83	0.93	0.92	0.92	0.93	0.93	0.93
Lanes:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.88	0.12	1.00	1.99	0.01
Final Sat.:	1769	0	1583	1769	0	1583	1769	3289	217	1769	3517	17
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.04	0.00	0.00	0.00	0.04	0.31	0.31	0.06	0.32	0.32
Crit Moves:			****	****				****		****		
Green/Cycle:	0.08	0.00	0.08	0.01	0.00	0.01	0.09	0.67	0.67	0.12	0.70	0.70
Volume/Cap:	0.28	0.00	0.46	0.46	0.00	0.43	0.46	0.46	0.46	0.46	0.46	0.46
Delay/Veh:	44.8	0.0	46.6	70.8	0.0	70.5	45.1	8.1	8.1	42.2	6.8	6.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.8	0.0	46.6	70.8	0.0	70.5	45.1	8.1	8.1	42.2	6.8	6.8
LOS by Move:	D	A	D	E	A	E	D	A	A	D	A	A
HCM2k95thQ:	70	0	115	37	0	33	138	184	184	165	141	141

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St G

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0	1	0	1	0
Lane Group:	L	RT		RT	L	RT		RT	L	RT		RT	L	RT		RT
#LnsInGrps:	1	1		1	1	1		1	1	2		2	1	2		2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	xxxx	0.98		0.98	xxxx	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.99	0.99		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	1.00	0.83		0.93	1.00	0.83		0.93	0.97	0.97		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	0.95		1.00	0.95	0.95	
Fnl Sat Adj:	0.93	1.00	0.83		0.93	1.00	0.83		0.93	0.92	0.92		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	1.00		1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St G

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.08	0.00	0.08		0.01	0.00	0.01		0.09	0.67	0.67		0.12	0.70	0.70	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	1.00	0.98		1.00	1.00	1.00		0.98	0.39	0.39		0.97	0.26	0.26	
Q1:	1.0	0.0	1.5		0.2	0.0	0.2		1.9	2.9	2.9		2.5	1.9	1.9	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	0.00	1.00		1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.4	0.0	0.8		0.5	0.0	0.5		0.8	0.8	0.8		0.8	0.8	0.8	
HCM2KQueue:	1.4	0.0	2.3		0.7	0.0	0.6		2.7	3.7	3.7		3.3	2.8	2.8	
70th%Factor:	1.20	1.20	1.19		1.20	1.20	1.20		1.19	1.19	1.19		1.19	1.19	1.19	
HCM2k70thQ:	1.6	0.0	2.7		0.9	0.0	0.8		3.3	4.4	4.4		3.9	3.3	3.3	
85th%Factor:	1.59	1.60	1.58		1.59	1.60	1.59		1.57	1.57	1.57		1.57	1.57	1.57	
HCM2k85thQ:	2.2	0.0	3.6		1.1	0.0	1.0		4.3	5.8	5.8		5.2	4.4	4.4	
90th%Factor:	1.77	1.80	1.76		1.79	1.80	1.79		1.75	1.73	1.73		1.74	1.75	1.75	
HCM2k90thQ:	2.4	0.0	4.0		1.3	0.0	1.1		4.8	6.4	6.4		5.7	4.9	4.9	
95th%Factor:	2.06	2.10	2.03		2.08	2.10	2.08		2.02	1.99	1.99		2.00	2.01	2.01	
HCM2k95thQ:	2.8	0.0	4.6		1.5	0.0	1.3		5.5	7.4	7.4		6.6	5.6	5.6	
98th%Factor:	2.60	2.70	2.54		2.65	2.70	2.65		2.51	2.45	2.45		2.48	2.51	2.51	
HCM2k98thQ:	3.5	0.0	5.8		1.9	0.0	1.7		6.9	9.1	9.1		8.2	7.0	7.0	

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Cycle (sec):	100	Critical Vol./Cap.(X):	0.498
Loss Time (sec):	12	Average Delay (sec/veh):	12.9
Optimal Cycle:	41	Level Of Service:	B

Street Name:	Micke Grove Road/Holman Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:PM Peak Hour												
Base Vol:	0	0	0	35	0	22	15	751	0	0	847	22
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	35	0	22	15	751	0	0	847	22
Added Vol:	95	0	0	0	0	42	37	135	123	0	143	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	95	0	0	35	0	64	52	886	123	0	990	22
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	103	0	0	38	0	70	57	963	134	0	1076	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	103	0	0	38	0	70	57	963	134	0	1076	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	103	0	0	38	0	70	57	963	134	0	1076	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	1.00	0.93	1.00	0.83	0.93	0.93	0.83	1.00	0.93	0.83
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1769	1900	1900	1769	1900	1583	1769	3538	1583	1900	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.00	0.02	0.00	0.04	0.03	0.27	0.08	0.00	0.30	0.02
Crit Moves:	****					****	****				****	
Green/Cycle:	0.12	0.00	0.00	0.21	0.00	0.09	0.06	0.67	0.67	0.00	0.61	0.61
Volume/Cap:	0.50	0.00	0.00	0.10	0.00	0.50	0.50	0.40	0.13	0.00	0.50	0.02
Delay/Veh:	43.3	0.0	0.0	32.4	0.0	46.3	48.7	7.4	5.8	0.0	11.1	7.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.3	0.0	0.0	32.4	0.0	46.3	48.7	7.4	5.8	0.0	11.1	7.7
LOS by Move:	D	A	A	C	A	D	D	A	A	A	B	A
HCM2k95thQ:	177	0	0	47	0	137	121	146	29	0	262	7

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	1 0	1		1 0	1 0	1		1 0	2 0	1		1 0	2 0	1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	1	1		1	1	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		xxxx	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	xxxxx		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
Hev Veh Adj:	0.98	xxxx	xxxxx		0.98	xxxx	0.98		0.98	0.98	0.98		xxxx	0.98	0.98	
Grade Adj:	1.00	xxxx	xxxxx		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
Parking Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	xxxx	xxxxx		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
RT Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		xxxx	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	1.00	1.00		0.93	1.00	0.83		0.93	0.98	0.83		1.00	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	1.00	1.00		0.93	1.00	0.83		0.93	0.93	0.83		1.00	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	0.00		1.00	0.00	1.00		1.00	1.00	1.00		0.00	1.00	1.00	

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.12	0.00	0.00	0.21	0.00	0.09	0.06	0.67	0.67	0.00	0.61	0.61
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	1.00	1.00	0.92	1.00	0.98	0.99	0.35	0.32	1.00	0.56	0.48
Q1:	2.6	0.0	0.0	0.8	0.0	1.8	1.5	2.2	0.4	0.0	4.9	0.1
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.73
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.60
EarlyArrAdj:	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.48	0.43
Q2:	0.9	0.0	0.0	0.1	0.0	0.9	0.9	0.7	0.1	0.0	0.5	0.0
HCM2KQueue:	3.6	0.0	0.0	0.9	0.0	2.7	2.4	2.9	0.6	0.0	5.4	0.1
70th%Factor:	1.19	1.20	1.20	1.20	1.20	1.19	1.19	1.19	1.20	1.20	1.19	1.20
HCM2k70thQ:	4.2	0.0	0.0	1.1	0.0	3.2	2.8	3.5	0.7	0.0	6.4	0.2
85th%Factor:	1.57	1.60	1.60	1.59	1.60	1.57	1.58	1.57	1.59	1.60	1.55	1.60
HCM2k85thQ:	5.6	0.0	0.0	1.4	0.0	4.3	3.8	4.6	0.9	0.0	8.4	0.2
90th%Factor:	1.73	1.80	1.80	1.78	1.80	1.75	1.76	1.75	1.79	1.80	1.71	1.80
HCM2k90thQ:	6.2	0.0	0.0	1.6	0.0	4.7	4.2	5.1	1.0	0.0	9.2	0.2
95th%Factor:	1.99	2.10	2.10	2.07	2.10	2.02	2.03	2.01	2.08	2.10	1.94	2.10
HCM2k95thQ:	7.1	0.0	0.0	1.9	0.0	5.5	4.8	5.8	1.2	0.0	10.5	0.3
98th%Factor:	2.46	2.70	2.70	2.63	2.70	2.51	2.53	2.50	2.66	2.70	2.36	2.69
HCM2k98thQ:	8.7	0.0	0.0	2.4	0.0	6.8	6.0	7.2	1.5	0.0	12.7	0.4

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Average Delay (sec/veh): 7.7 Worst Case Level Of Service: B[12.7]

Street Name:	SR 99 West Frontage Rd						SR 99 SB Ramps (Eight Mile Rd)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Volume Module:PM Peak Hour												
Base Vol:	0	112	7	257	143	0	0	0	0	26	0	318
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	112	7	257	143	0	0	0	0	26	0	318
Added Vol:	0	0	0	106	0	0	0	0	0	0	0	17
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	112	7	363	143	0	0	0	0	26	0	335
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	122	8	395	155	0	0	0	0	28	0	364
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	122	8	395	155	0	0	0	0	28	0	364
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	129	xxxx	xxxxx	xxxx	xxxx	xxxxx	1070	xxxx	126
Potent Cap.:	xxxx	xxxx	xxxxx	1456	xxxx	xxxxx	xxxx	xxxx	xxxxx	245	xxxx	925
Move Cap.:	xxxx	xxxx	xxxxx	1456	xxxx	xxxxx	xxxx	xxxx	xxxxx	179	xxxx	925
Volume/Cap:	xxxx	xxxx	xxxx	0.27	xxxx	xxxx	xxxx	xxxx	xxxx	0.16	xxxx	0.39
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	27.6	xxxx	xxxxx	xxxx	xxxx	xxxxx	13.7	xxxx	47.4
Control Del:	xxxxx	xxxx	xxxxx	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	28.9	xxxx	11.4
LOS by Move:	*	*	*	A	*	*	*	*	*	D	*	B
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	1.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			12.7		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			12 feet			12 feet			12 feet	
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:		#218			#183							
Dist(miles):		0.250			0.250							
Speed (mph):		1.00			1.00							
SignalIndex:		#22			#12							
Cycle Time:		100 secs			100 secs							
InitVolume:	248	15		114	43							
Saturation:	1769	890		1769	990							
ArrivalType:	4	4		4	4							
G/C:	0.18	0.28		0.11	0.06							
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:	0.236	0.371		0.143	0.086							
gq1:	10.71	1.06		5.53	3.97							
gq2:	2.46	0.02		0.52	0.24							
gq:	13.17	1.08		6.04	4.22							
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:		0.550			0.550							
beta:		0.645			0.645							
ta (secs):		900.000			900.000							
F:		0.003			0.003							
f:	0.492	1.000		1.000	1.000							
vcmax:	35	3		33	13							
vcg:	37	4		35	13							
vcmin:	1000	1000		1000	1000							
tp:	0.0	0.0		0.0	0.0							
p:		0.000			0.000							
*** Computation 3: Platoon Event Periods												
pdom/psubo:		0.000/0.000/Unconstrained										
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	0	xxxxx	xxxxx	129	xxxxx	xxxxx	1252	1074	155	1070	1070	126
AdjCnflVol:	0	xxxxx	xxxxx	129	xxxxx	xxxxx	1252	1074	155	1070	1070	126
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	0	xxxxx	xxxxx	129	xxxxx	xxxxx	1252	1074	155	1070	1070	126
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	1623	xxxxx	xxxxx	1456	xxxxx	xxxxx	149	220	890	245	221	925
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
Potent Cap.:	1623	xxxxx	xxxxx	1456	xxxxx	xxxxx	149	220	890	245	221	925

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Average Delay (sec/veh): 20.6 Worst Case Level Of Service: F[52.7]

Street Name:	SR 99 East Frontage Rd								SR 99 NB Ramps (Eight Mile Rd)							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Volume Module:PM Peak Hour																				
Base Vol:	60	234	0	0	204	173	266	0	50	0	0	0								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	60	234	0	0	204	173	266	0	50	0	0	0								
Added Vol:	0	0	0	0	0	15	110	0	0	0	0	0								
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0								
Initial Fut:	60	234	0	0	204	188	376	0	50	0	0	0								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92								
PHF Volume:	65	254	0	0	222	204	409	0	54	0	0	0								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	65	254	0	0	222	204	409	0	54	0	0	0								
Critical Gap Module:																				
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx								
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	426	xxxx	xxxxx	xxxx	xxxx	xxxxx	607	xxxx	222	xxxx	xxxx	xxxxx								
Potent Cap.:	1133	xxxx	xxxxx	xxxx	xxxx	xxxxx	460	xxxx	818	xxxx	xxxx	xxxxx								
Move Cap.:	1133	xxxx	xxxxx	xxxx	xxxx	xxxxx	439	xxxx	818	xxxx	xxxx	xxxxx								
Volume/Cap:	0.06	xxxx	xxxx	xxxx	xxxx	xxxx	0.93	xxxx	0.07	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	4.6	xxxx	xxxxx	xxxx	xxxx	xxxxx	266	xxxx	5.3	xxxx	xxxx	xxxxx								
Control Del:	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	58.4	xxxx	9.7	xxxxx	xxxx	xxxxx								
LOS by Move:	A	*	*	*	*	*	F	*	A	*	*	*								
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT										
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx			xxxxxx			52.7			xxxxxx										
ApproachLOS:	*			*			F			*										

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:	#222			#188								
Dist(miles):	0.250			0.250								
Speed (mph):	1.00			1.00								
SignalIndex:	#23			#13								
Cycle Time:	100 secs			100 secs								
InitVolume:	327	48		41	22							
Saturation:	1165	810		1769	1348							
ArrivalType:	4	4		4	4							
G/C:	0.31	0.21		0.03	0.06							

*** Computation 1: Time for Queue to Clear at Each Upstream Intersection

P:	0.413	0.286		0.046	0.086							
gq1:	16.49	4.23		2.21	1.49							
gq2:	9.87	0.36		0.07	0.03							
gq:	26.36	4.60		2.28	1.52							

*** Computation 2: Time Intersection Blocked Because of Upstream Platoons

alpha:	0.550			0.550								
beta:	0.645			0.645								
ta (secs):	900.000			900.000								
F:	0.003			0.003								
f:	0.852	1.000		1.000	1.000							
vcmax:	79	12		13	6							
vcg:	83	14		13	7							
vcmin:	1000	1000		1000	1000							
tp:	0.0	0.0		0.0	0.0							
p:	0.000			0.000								

*** Computation 3: Platoon Event Periods

pdom/psubo:	0.000/0.000/Unconstrained											

*** Computation 4: Conflicting Flows During Each Unblocked Period

InitCnflVol:	426	xxxxx	xxxxx	0	xxxxx	xxxxx	607	607	222	736	811	254
AdjCnflVol:	426	xxxxx	xxxxx	0	xxxxx	xxxxx	607	607	222	736	811	254
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	426	xxxxx	xxxxx	0	xxxxx	xxxxx	607	607	222	736	811	254

*** Computation 5: Capacity for Subject Movement During Unblocked Period

InitPotCap:	1133	xxxxx	xxxxx	1623	xxxxx	xxxxx	460	411	818	335	314	784
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
Potent Cap.:	1133	xxxxx	xxxxx	1623	xxxxx	xxxxx	460	411	818	335	314	784

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 West & L.C.MarkTaylor/Marlette

Cycle (sec):	100	Critical Vol./Cap.(X):	0.577
Loss Time (sec):	9	Average Delay (sec/veh):	14.9
Optimal Cycle:	39	Level Of Service:	B

Street Name:	West Lane								Lt.Col.Mark Taylor/Marlette Rd			
Approach:	North Bound				South Bound				East Bound			
Movement:	L	T	R		L	T	R		L	T	R	
Control:	Protected				Protected				Split Phase			
Rights:	Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	0	0	2	0	1	1	0	2	0	0	0	0
Volume Module:	PM Peak Hour											
Base Vol:	0	872	42		35	696	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	872	42		35	696	0		0	0	0	
Added Vol:	0	216	134		41	81	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0	
Initial Fut:	0	1088	176		76	777	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	0	1183	191		83	845	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	1183	191		83	845	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	1183	191		83	845	0		0	0	0	
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.93	0.83		0.93	0.93	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.00	1.00		1.00	2.00	0.00		0.00	0.00	0.00	
Final Sat.:	0	3538	1583		1769	3538	0		0	0	0	
Capacity Analysis Module:												
Vol/Sat:	0.00	0.33	0.12		0.05	0.24	0.00		0.00	0.00	0.00	
Crit Moves:		****			****						****	
Green/Cycle:	0.00	0.58	0.58		0.08	0.66	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.58	0.21		0.58	0.36	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	13.7	10.2		50.0	7.7	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	13.7	10.2		50.0	7.7	0.0		0.0	0.0	0.0	
LOS by Move:	A	B	B		D	A	A		A	A	A	
HCM2k95thQ:	0	395	87		119	123	0		0	0	0	

Street Name:	West Lane								Lt.Col.Mark Taylor/Marlette Rd			
Approach:	North Bound				South Bound				East Bound			
Movement:	L	T	R		L	T	R		L	T	R	
Control:	Protected				Protected				Split Phase			
Rights:	Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	0	0	2	0	1	1	0	2	0	0	0	0
Volume Module:	PM Peak Hour											
Base Vol:	0	872	42		35	696	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	872	42		35	696	0		0	0	0	
Added Vol:	0	216	134		41	81	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0	
Initial Fut:	0	1088	176		76	777	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	0	1183	191		83	845	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	1183	191		83	845	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	1183	191		83	845	0		0	0	0	
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.93	0.83		0.93	0.93	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.00	1.00		1.00	2.00	0.00		0.00	0.00	0.00	
Final Sat.:	0	3538	1583		1769	3538	0		0	0	0	
Capacity Analysis Module:												
Vol/Sat:	0.00	0.33	0.12		0.05	0.24	0.00		0.00	0.00	0.00	
Crit Moves:		****			****						****	
Green/Cycle:	0.00	0.58	0.58		0.08	0.66	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.58	0.21		0.58	0.36	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	13.7	10.2		50.0	7.7	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	13.7	10.2		50.0	7.7	0.0		0.0	0.0	0.0	
LOS by Move:	A	B	B		D	A	A		A	A	A	
HCM2k95thQ:	0	395	87		119	123	0		0	0	0	
											339	0	36

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #16 West & L.C.MarkTaylor/Marlette

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        0  0  2  0  1    1  0  2  0  0    0  0  0  0  0    1  0  0  0  1
Lane Group:  xxxx   T     R     L    T   xxxx  xxxx xxxx  xxxx    L  xxxx    R
#LnsInGrps:     0    2     1     1    2     0     0    0     0     1    0     1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:          8                8                8                8
% Hev Veh:            2                2                2                2
Grade:               0%               0%               0%               0%
Parking/Hr:          No               No               No               No
Bus Stp/Hr:           0                0                0                0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:          0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:           0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:  xxxx xxxx  xxxx     1 xxxx  xxxx  xxxx xxxx  xxxx     1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  xxxx 1.00  1.00  1.00 1.00 xxxxx  xxxx xxxx xxxxx  1.00 xxxx  1.00
Hev Veh Adj: xxxx 0.98  0.98  0.98 0.98 xxxxx  xxxx xxxx xxxxx  0.98 xxxx  0.98
Grade Adj:   xxxx 1.00  1.00  1.00 1.00 xxxxx  xxxx xxxx xxxxx  1.00 xxxx  1.00
Parking Adj: xxxx xxxx  1.00  xxxx 1.00 xxxxx  xxxx xxxx xxxxx  xxxx xxxx  1.00
Bus Stp Adj: xxxx xxxx  1.00  xxxx 1.00 xxxxx  xxxx xxxx xxxxx  xxxx xxxx  1.00
Area Adj:    xxxx 1.00  1.00  1.00 1.00 xxxxx  xxxx xxxx xxxxx  1.00 xxxx  1.00
RT Adj:      xxxx xxxx  0.85  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx  0.85
LT Adj:      xxxx xxxx xxxxx  0.95 xxxx xxxxx  xxxx xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 1.00 0.98  0.83  0.93 0.98  1.00  1.00 1.00  1.00  0.93 1.00  0.83
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 0.95  1.00  1.00 0.95  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Fnl Sat Adj: 1.00 0.93  0.83  0.93 0.93  1.00  1.00 1.00  1.00  0.93 1.00  0.83
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  0.00 1.00  1.00  1.00 1.00  0.00  0.00 0.00  0.00  1.00 0.00  1.00
```


EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #16 West & L.C.MarkTaylor/Marlette

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Green/Cycle: 0.00 0.58  0.58  0.08 0.66  0.00  0.00 0.00  0.00  0.25 0.00  0.25
ArrivalType:         4                4                4                4
ProgFactor:  1.00 0.65  0.57  0.99 0.39  1.00  1.00 1.00  1.00  0.94 1.00  0.90
Q1:           0.0  7.1   1.4   2.2  2.2   0.0   0.0  0.0   0.0   5.8  0.0   0.6
UpstreamVC:  0.00 0.00  0.00  0.76 0.76  0.00  0.00 0.00  0.00  0.00 0.00  0.00
UpstreamAdj: 0.00 0.00  0.00  0.57 0.57  0.00  0.00 0.00  0.00  0.00 0.00  0.00
EarlyArrAdj: 0.00 1.00  1.00  0.13 0.47  0.00  0.00 0.00  0.00  1.00 0.00  1.00
Q2:           0.0  1.3   0.3   0.2  0.3   0.0   0.0  0.0   0.0   1.3  0.0   0.1
HCM2KQueue:   0.0  8.4   1.7   2.4  2.4   0.0   0.0  0.0   0.0   7.1  0.0   0.7
------------|---------------||---------------||---------------||---------------|
70th%Factor: 1.20 1.18  1.20  1.19 1.19  1.20  1.20 1.20  1.20  1.18 1.20  1.20
HCM2k70thQ:   0.0  9.9   2.0   2.8  2.9   0.0   0.0  0.0   0.0   8.4  0.0   0.8
------------|---------------||---------------||---------------||---------------|
85th%Factor: 1.60 1.53  1.58  1.58 1.58  1.60  1.60 1.60  1.60  1.54 1.60  1.59
HCM2k85thQ:   0.0 12.9   2.7   3.7  3.8   0.0   0.0  0.0   0.0  10.9  0.0   1.1
------------|---------------||---------------||---------------||---------------|
90th%Factor: 1.80 1.66  1.77  1.76 1.75  1.80  1.80 1.80  1.80  1.68 1.80  1.79
HCM2k90thQ:   0.0 14.0   3.0   4.1  4.3   0.0   0.0  0.0   0.0  12.0  0.0   1.2
------------|---------------||---------------||---------------||---------------|
95th%Factor: 2.10 1.88  2.05  2.03 2.02  2.10  2.10 2.10  2.10  1.90 2.10  2.08
HCM2k95thQ:   0.0 15.8   3.5   4.8  4.9   0.0   0.0  0.0   0.0  13.6  0.0   1.4
------------|---------------||---------------||---------------||---------------|
98th%Factor: 2.70 2.22  2.58  2.53 2.53  2.70  2.70 2.70  2.70  2.28 2.70  2.65
HCM2k98thQ:   0.0 18.7   4.4   6.0  6.1   0.0   0.0  0.0   0.0  16.2  0.0   1.8
```

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

Cycle (sec):	100	Critical Vol./Cap.(X):	0.420
Loss Time (sec):	12	Average Delay (sec/veh):	30.8
Optimal Cycle:	36	Level Of Service:	C

Street Name:	Holman Road						Lt. Col. Mark Taylor Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	3 0	1	1 0	1 0	1	1 0	0 1	0
Volume Module:	PM Peak Hour											
Base Vol:	153	174	178	11	132	4	8	145	99	203	108	7
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	153	174	178	11	132	4	8	145	99	203	108	7
Added Vol:	11	37	0	37	67	5	3	14	10	0	20	38
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	164	211	178	48	199	9	11	159	109	203	128	45
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	178	229	193	52	216	10	12	173	118	221	139	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	178	229	193	52	216	10	12	173	118	221	139	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	178	229	193	52	216	10	12	173	118	221	139	49
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.89	0.83	0.93	0.98	0.83	0.93	0.94	0.94
Lanes:	1.00	2.00	1.00	1.00	3.00	1.00	1.00	1.00	1.00	1.00	0.74	0.26
Final Sat.:	1769	3538	1583	1769	5083	1583	1769	1862	1583	1769	1324	465
Capacity Analysis Module:												
Vol/Sat:	0.10	0.06	0.12	0.03	0.04	0.01	0.01	0.09	0.07	0.12	0.11	0.11
Crit Moves:			****	****				****		****		
Green/Cycle:	0.25	0.29	0.29	0.07	0.11	0.11	0.03	0.22	0.22	0.30	0.49	0.49
Volume/Cap:	0.40	0.22	0.42	0.42	0.40	0.06	0.22	0.42	0.34	0.42	0.22	0.22
Delay/Veh:	31.5	27.0	29.2	46.8	42.1	40.2	49.2	34.1	33.4	28.8	14.8	14.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.5	27.0	29.2	46.8	42.1	40.2	49.2	34.1	33.4	28.8	14.8	14.8
LOS by Move:	C	C	C	D	D	D	D	C	C	C	B	B
HCM2k95thQ:	202	121	210	104	133	15	19	206	140	251	122	122

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Lanes:	1 0	2 0	1		1 0	3 0	1		1 0	1 0	1		1 0	0 1	0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	2	1		1	3	1		1	1	1		1	1	1	
HCM Ops Adjusted Lane Utilization Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.96	0.96	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.94	0.94	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.89	0.83		0.93	0.98	0.83		0.93	0.94	0.94	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.25	0.29	0.29	0.07	0.11	0.11	0.03	0.22	0.22	0.30	0.49	0.49
ArrivalType:		4			4			4			4	
ProgFactor:	0.92	0.88	0.91	0.98	0.97	0.96	0.99	0.94	0.93	0.90	0.71	0.71
Q1:	3.8	2.2	3.9	1.4	2.0	0.2	0.3	3.9	2.6	4.4	2.1	2.1
UpstreamVC:	0.18	0.18	0.18	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00
UpstreamAdj:	0.99	0.99	0.99	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
EarlyArrAdj:	0.45	0.50	0.46	1.00	1.00	1.00	0.13	0.43	0.39	1.00	1.00	1.00
Q2:	0.3	0.1	0.3	0.7	0.6	0.1	0.0	0.3	0.2	0.7	0.3	0.3
HCM2KQueue:	4.1	2.4	4.3	2.0	2.6	0.3	0.4	4.2	2.8	5.1	2.4	2.4
70th%Factor:	1.19	1.19	1.19	1.20	1.19	1.20	1.20	1.19	1.19	1.19	1.19	1.19
HCM2k70thQ:	4.9	2.9	5.1	2.4	3.1	0.4	0.4	5.0	3.3	6.1	2.9	2.9
85th%Factor:	1.56	1.58	1.56	1.58	1.57	1.60	1.60	1.56	1.57	1.55	1.58	1.58
HCM2k85thQ:	6.4	3.8	6.6	3.2	4.1	0.5	0.6	6.5	4.4	8.0	3.8	3.8
90th%Factor:	1.73	1.75	1.72	1.76	1.75	1.79	1.79	1.72	1.75	1.71	1.75	1.75
HCM2k90thQ:	7.0	4.2	7.3	3.6	4.6	0.5	0.6	7.2	4.9	8.8	4.2	4.2
95th%Factor:	1.98	2.03	1.97	2.04	2.02	2.09	2.09	1.98	2.01	1.95	2.02	2.02
HCM2k95thQ:	8.1	4.8	8.4	4.2	5.3	0.6	0.7	8.2	5.6	10.0	4.9	4.9
98th%Factor:	2.43	2.53	2.42	2.55	2.52	2.68	2.67	2.43	2.51	2.37	2.53	2.53
HCM2k98thQ:	9.9	6.0	10.3	5.2	6.6	0.8	1.0	10.1	7.0	12.2	6.1	6.1

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.657
Loss Time (sec): 12 Average Delay (sec/veh): 25.4
Optimal Cycle: 54 Level Of Service: C

Street Name:	West Lane						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 2	0 1	2	0 2	0 1	2	0 3	0 1	2	0 3	0 1
Volume Module:	PM Peak Hour											
Base Vol:	50	699	279	261	597	16	22	31	34	324	31	192
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	699	279	261	597	16	22	31	34	324	31	192
Added Vol:	0	275	0	36	213	13	17	0	0	28	2	59
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	974	279	297	810	29	39	31	34	352	33	251
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	54	1059	303	323	880	32	42	34	37	383	36	273
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	54	1059	303	323	880	32	42	34	37	383	36	273
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	54	1059	303	323	880	32	42	34	37	383	36	273
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	5083	1583	3432	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.02	0.30	0.19	0.09	0.25	0.02	0.01	0.01	0.02	0.11	0.01	0.17
Crit Moves:		****		****			****					****
Green/Cycle:	0.04	0.46	0.46	0.14	0.56	0.56	0.02	0.05	0.05	0.23	0.26	0.26
Volume/Cap:	0.44	0.66	0.42	0.66	0.44	0.04	0.66	0.14	0.48	0.48	0.03	0.66
Delay/Veh:	49.8	22.2	18.7	43.8	12.9	9.8	70.8	45.8	51.0	33.6	27.4	36.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.8	22.2	18.7	43.8	12.9	9.8	70.8	45.8	51.0	33.6	27.4	36.7
LOS by Move:	D	C	B	D	B	A	E	D	D	C	C	D
HCM2k95thQ:	74	540	252	287	271	14	86	25	91	259	14	383

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	0 1		2	0 2	0 1		2	0 3	0 1		2	0 3	0 1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	2	1		2	2	1		2	3	1		2	3	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.04	0.46	0.46		0.14	0.56	0.56		0.02	0.05	0.05		0.23	0.26	0.26	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.84	0.78		0.98	0.64	0.57		1.00	0.99	0.99		0.94	0.88	0.95	
Q1:	0.8	10.1	4.4		4.3	4.8	0.2		0.6	0.3	1.0		4.4	0.2	6.4	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.7	1.8	0.7		1.7	0.8	0.0		1.1	0.2	0.8		0.9	0.0	1.7	
HCM2KQueue:	1.4	11.9	5.2		5.9	5.6	0.3		1.7	0.5	1.8		5.3	0.3	8.1	
70th%Factor:	1.20	1.17	1.19		1.19	1.19	1.20		1.20	1.20	1.20		1.19	1.20	1.18	
HCM2k70thQ:	1.7	14.0	6.1		7.0	6.6	0.3		2.0	0.6	2.1		6.3	0.3	9.6	
85th%Factor:	1.59	1.50	1.55		1.55	1.55	1.60		1.58	1.60	1.58		1.55	1.60	1.53	
HCM2k85thQ:	2.3	17.9	8.0		9.2	8.7	0.4		2.7	0.8	2.8		8.3	0.4	12.4	
90th%Factor:	1.77	1.62	1.71		1.70	1.70	1.79		1.77	1.79	1.77		1.71	1.79	1.67	
HCM2k90thQ:	2.6	19.3	8.8		10.1	9.5	0.5		3.0	0.9	3.2		9.1	0.5	13.6	
95th%Factor:	2.05	1.81	1.95		1.93	1.94	2.09		2.05	2.08	2.04		1.95	2.09	1.88	
HCM2k95thQ:	3.0	21.6	10.1		11.5	10.8	0.5		3.5	1.0	3.6		10.4	0.6	15.3	
98th%Factor:	2.59	2.10	2.37		2.33	2.35	2.68		2.58	2.66	2.57		2.36	2.68	2.23	
HCM2k98thQ:	3.7	25.1	12.2		13.9	13.1	0.7		4.4	1.3	4.6		12.6	0.7	18.2	

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.521
Loss Time (sec):	12	Average Delay (sec/veh):	32.4
Optimal Cycle:	42	Level Of Service:	C

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:	PM Peak Hour											
Base Vol:	187	184	196	101	134	91	123	360	155	224	507	202
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	187	184	196	101	134	91	123	360	155	224	507	202
Added Vol:	13	45	0	0	44	34	2	18	8	0	32	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	200	229	196	101	178	125	125	378	163	224	539	202
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	217	249	213	110	193	136	136	411	177	243	586	220
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	217	249	213	110	193	136	136	411	177	243	586	220
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	217	249	213	110	193	136	136	411	177	243	586	220
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.12	0.05	0.13	0.06	0.04	0.09	0.08	0.08	0.11	0.14	0.12	0.14
Crit Moves:	****					****			****	****		
Green/Cycle:	0.24	0.27	0.27	0.13	0.16	0.16	0.17	0.21	0.21	0.26	0.31	0.31
Volume/Cap:	0.52	0.18	0.49	0.49	0.23	0.52	0.45	0.38	0.52	0.52	0.37	0.45
Delay/Veh:	34.5	27.7	31.3	42.4	36.4	40.0	38.3	33.7	36.1	32.4	27.2	28.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.5	27.7	31.3	42.4	36.4	40.0	38.3	33.7	36.1	32.4	27.2	28.4
LOS by Move:	C	C	C	D	D	D	D	C	D	C	C	C
HCM2k95thQ:	256	91	237	152	88	181	200	195	252	270	211	224

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	3 0	1		1 0	3 0	1		1 0	3 0	1		1 0	3 0	1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	3	1		1	3	1		1	3	1		1	3	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.24	0.27	0.27	0.13	0.16	0.16	0.17	0.21	0.21	0.26	0.31	0.31
ArrivalType:		4			4			4			4	
ProgFactor:	0.94	0.89	0.92	0.97	0.95	0.96	0.96	0.94	0.95	0.93	0.89	0.90
Q1:	5.0	1.7	4.6	2.8	1.6	3.3	3.2	3.3	4.1	5.4	4.1	4.4
UpstreamVC:	0.70	0.70	0.70	0.40	0.40	0.40	0.00	0.00	0.00	0.86	0.86	0.86
UpstreamAdj:	0.65	0.65	0.65	0.92	0.92	0.92	0.00	0.00	0.00	0.39	0.39	0.39
EarlyArrAdj:	0.28	0.32	0.29	0.28	0.33	0.30	1.00	1.00	1.00	0.18	0.21	0.19
Q2:	0.3	0.1	0.3	0.3	0.1	0.3	0.8	0.6	1.0	0.2	0.1	0.2
HCM2KQueue:	5.3	1.8	4.9	3.0	1.7	3.6	4.0	3.9	5.2	5.6	4.3	4.6
70th%Factor:	1.19	1.20	1.19	1.19	1.20	1.19	1.19	1.19	1.19	1.19	1.19	1.19
HCM2k70thQ:	6.2	2.1	5.8	3.6	2.1	4.3	4.8	4.7	6.1	6.6	5.1	5.4
85th%Factor:	1.55	1.58	1.56	1.57	1.58	1.57	1.56	1.56	1.55	1.55	1.56	1.56
HCM2k85thQ:	8.2	2.8	7.5	4.8	2.7	5.7	6.3	6.2	8.0	8.6	6.7	7.1
90th%Factor:	1.71	1.77	1.71	1.74	1.77	1.73	1.73	1.73	1.71	1.70	1.72	1.72
HCM2k90thQ:	9.0	3.2	8.3	5.3	3.0	6.3	7.0	6.8	8.8	9.5	7.4	7.8
95th%Factor:	1.95	2.04	1.96	2.01	2.05	1.99	1.98	1.98	1.95	1.94	1.97	1.97
HCM2k95thQ:	10.2	3.7	9.5	6.1	3.5	7.3	8.0	7.8	10.1	10.8	8.4	9.0
98th%Factor:	2.37	2.57	2.39	2.49	2.58	2.46	2.43	2.44	2.37	2.35	2.42	2.40
HCM2k98thQ:	12.4	4.6	11.6	7.5	4.4	9.0	9.8	9.6	12.2	13.1	10.3	11.0

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 SR99 W Front & SB Ramps Morada

Average Delay (sec/veh): 10.6 Worst Case Level Of Service: C[24.1]

Street Name:	SR 99 West Frontage Rd						SR 99 SB Ramps (Morada Lane)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 1	0	0 1	0 0	0	0 0	0 0	0	1 0	0 0	1
Volume Module:	PM Peak Hour											
Base Vol:	0	73	290	30	101	0	0	0	0	372	0	16
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	73	290	30	101	0	0	0	0	372	0	16
Added Vol:	0	0	18	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	73	308	30	101	0	0	0	0	372	0	16
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	79	335	33	110	0	0	0	0	404	0	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	79	335	33	110	0	0	0	0	404	0	17
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	414	xxxx	xxxxx	xxxx	xxxx	xxxxx	422	xxxx	247
Potent Cap.:	xxxx	xxxx	xxxxx	1145	xxxx	xxxxx	xxxx	xxxx	xxxxx	589	xxxx	792
Move Cap.:	xxxx	xxxx	xxxxx	1145	xxxx	xxxxx	xxxx	xxxx	xxxxx	576	xxxx	792
Volume/Cap:	xxxx	xxxx	xxxx	0.03	xxxx	xxxx	xxxx	xxxx	xxxx	0.70	xxxx	0.02
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxx	xxxx	xxxxx	140	xxxx	1.7
Control Del:	xxxxx	xxxx	xxxxx	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	24.7	xxxx	9.6
LOS by Move:	*	*	*	A	*	*	*	*	*	C	*	A
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			24.1		
ApproachLOS:	*			*			*			C		

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #20 SR99 W Front & SB Ramps Morada

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HevVeh:			2%				2%				2%				2%	
Grade:			0%				0%				0%				0%	
Peds/Hour:			0				0				0				0	
Pedestrian Walk Speed: 4.00 feet/sec																
LaneWidth:			12 feet				12 feet				12 feet				12 feet	
Time Period: 0.25 hour																
Upstream Signals:																
Link Index:			#218				#183									
Dist(miles):			0.250				0.250									
Speed (mph):			1.00				1.00									
SignalIndex:			#22				#12									
Cycle Time:			100 secs				100 secs									
InitVolume:	248		15		114		43									
Saturation:	1769		890		1769		990									
ArrivalType:	4		4		4		4									
G/C:	0.18		0.28		0.11		0.06									

*** Computation 1: Time for Queue to Clear at Each Upstream Intersection

P:	0.236	0.371	0.143	0.086
gq1:	10.71	1.06	5.53	3.97
gq2:	2.46	0.02	0.52	0.24
gq:	13.17	1.08	6.04	4.22

*** Computation 2: Time Intersection Blocked Because of Upstream Platoons

alpha:		0.550		0.550
beta:		0.645		0.645
ta (secs):		900.000		900.000
F:		0.003		0.003
f:	1.000	1.000	0.907	1.000
vcmax:	71	3	30	13
vcg:	75	4	32	13
vcmin:	1000	1000	1000	1000
tp:	0.0	0.0	0.0	0.0
p:		0.000		0.000

*** Computation 3: Platoon Event Periods

pdom/psubo: 0.000/0.000/Unconstrained

*** Computation 4: Conflicting Flows During Each Unblocked Period

InitCnflVol:	0	xxxxx	xxxxx	414	xxxxx	xxxxx	430	589	110	422	422	247
AdjCnflVol:	0	xxxxx	xxxxx	414	xxxxx	xxxxx	430	589	110	422	422	247
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	0	xxxxx	xxxxx	414	xxxxx	xxxxx	430	589	110	422	422	247

*** Computation 5: Capacity for Subject Movement During Unblocked Period

InitPotCap:	1623	xxxxx	xxxxx	1145	xxxxx	xxxxx	535	421	944	589	523	792
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
Potent Cap.:	1623	xxxxx	xxxxx	1145	xxxxx	xxxxx	535	421	944	589	523	792

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #21 SR99 E Front & NB Ramps Morada

Average Delay (sec/veh): 16.6 Worst Case Level Of Service: D[30.6]

Street Name:	SR 99 East Frontage Rd								SR 99 NB Ramps (Morada Lane)							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	1	0	0 0	0	0	0	1 0	1	0	0	0 1	0	0	0	0 0

Volume Module:PM Peak Hour

Base Vol:	190	223	0	0	262	13	120	0	547	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	190	223	0	0	262	13	120	0	547	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	32	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	190	223	0	0	262	13	120	0	579	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	207	242	0	0	285	14	130	0	629	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	207	242	0	0	285	14	130	0	629	0	0	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	299	xxxx	xxxxx	xxxx	xxxx	xxxxx	947	xxxx	292	xxxx	xxxx	xxxxx
Potent Cap.:	1262	xxxx	xxxxx	xxxx	xxxx	xxxxx	290	xxxx	747	xxxx	xxxx	xxxxx
Move Cap.:	1262	xxxx	xxxxx	xxxx	xxxx	xxxxx	249	xxxx	747	xxxx	xxxx	xxxxx
Volume/Cap:	0.16	xxxx	xxxx	xxxx	xxxx	xxxx	0.52	xxxx	0.84	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	14.6	xxxx	xxxxx	xxxx	xxxx	xxxxx	69.7	xxxx	241.6	xxxx	xxxx	xxxxx
Control Del:	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	34.4	xxxx	29.9	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	D	*	D	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			30.6			xxxxxx		
ApproachLOS:	*			*			D			*		

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #21 SR99 E Front & NB Ramps Morada

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:	#222			#188								
Dist(miles):	0.250			0.250								
Speed (mph):	1.00			1.00								
SignalIndex:	#23			#13								
Cycle Time:	100 secs			100 secs								
InitVolume:	327	48		41	22							
Saturation:	1165	810		1769	1348							
ArrivalType:	4	4		4	4							
G/C:	0.31	0.21		0.03	0.06							
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:	0.413	0.286		0.046	0.086							
gq1:	16.49	4.23		2.21	1.49							
gq2:	9.87	0.36		0.07	0.03							
gq:	26.36	4.60		2.28	1.52							
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:	0.550			0.550								
beta:	0.645			0.645								
ta (secs):	900.000			900.000								
F:	0.003			0.003								
f:	1.000	1.000		1.000	1.000							
vcmax:	92	12		13	6							
vcg:	97	14		13	7							
vcmin:	1000	1000		1000	1000							
tp:	0.0	0.0		0.0	0.0							
p:	0.000			0.000								
*** Computation 3: Platoon Event Periods												
pdom/psubo:	0.000/0.000/Unconstrained											
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	299	xxxxx	xxxxx	0	xxxxx	xxxxx	947	947	292	1262	954	242
AdjCnflVol:	299	xxxxx	xxxxx	0	xxxxx	xxxxx	947	947	292	1262	954	242
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	299	xxxxx	xxxxx	0	xxxxx	xxxxx	947	947	292	1262	954	242
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	1262	xxxxx	xxxxx	1623	xxxxx	xxxxx	290	261	747	147	259	796
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
Potent Cap.:	1262	xxxxx	xxxxx	1623	xxxxx	xxxxx	290	261	747	147	259	796

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 West Ln & West Ln Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.634
Loss Time (sec):	9	Average Delay (sec/veh):	18.8
Optimal Cycle:	44	Level Of Service:	B

Street Name:	West Lane						West Lane Frontage Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	1	0	1	0 1	1	0	0 1	0 0	1	1 0 0 1 0
Volume Module:	PM Peak Hour											
Base Vol:	194	933	148	38	758	64	83	9	106	141	15	9
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	194	933	148	38	758	64	83	9	106	141	15	9
Added Vol:	0	275	0	0	241	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	194	1208	148	38	999	64	83	9	106	141	15	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	211	1313	161	41	1086	70	90	10	115	153	16	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	211	1313	161	41	1086	70	90	10	115	153	16	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	211	1313	161	41	1086	70	90	10	115	153	16	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.92	0.92	0.93	0.92	0.92	0.71	0.71	0.83	0.63	0.93	0.93
Lanes:	1.00	1.78	0.22	1.00	1.88	0.12	0.90	0.10	1.00	1.00	0.62	0.38
Final Sat.:	1769	3101	380	1769	3295	211	1216	132	1583	1197	1099	659
Capacity Analysis Module:												
Vol/Sat:	0.12	0.42	0.42	0.02	0.33	0.33	0.07	0.07	0.07	0.13	0.01	0.01
Crit Moves:	****				****					****		
Green/Cycle:	0.19	0.67	0.67	0.04	0.52	0.52	0.20	0.20	0.20	0.20	0.20	0.20
Volume/Cap:	0.63	0.63	0.63	0.63	0.63	0.63	0.37	0.37	0.36	0.63	0.07	0.07
Delay/Veh:	41.4	9.9	9.9	65.7	17.9	17.9	35.2	35.2	35.0	41.9	32.4	32.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.4	9.9	9.9	65.7	17.9	17.9	35.2	35.2	35.0	41.9	32.4	32.4
LOS by Move:	D	A	A	E	B	B	D	D	D	D	C	C
HCM2k95thQ:	276	302	302	119	499	499	142	142	157	257	32	32

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        1  0  1  1  0    1  0  1  1  0    0  1  0  0  1    1  0  0  1  0
Lane Group:    L   RT     RT    L   RT     RT   LT   LT     R     L   RT     RT
#LnsInGrps:     1    2     2     1    2     2     1    1     1     1    1     1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:         8                8                8                8
% Hev Veh:           2                2                2                2
Grade:              0%               0%               0%               0%
Parking/Hr:         No               No               No               No
Bus Stp/Hr:          0                0                0                0
Area Type:    < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:         0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:          0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx     1 xxxx  xxxx     5    5  xxxx     2 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Hev Veh Adj: 0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
Grade Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Parking Adj: xxxx 1.00  1.00  xxxx 1.00  1.00  xxxx xxxx  1.00  xxxx 1.00  1.00
Bus Stp Adj: xxxx 1.00  1.00  xxxx 1.00  1.00  xxxx xxxx  1.00  xxxx 1.00  1.00
Area Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
RT Adj:      xxxx 0.98  0.98  xxxx 0.99  0.99  xxxx xxxx  0.85  xxxx 0.94  0.94
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.72 0.72 xxxxx  0.64 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.93 0.96  0.96  0.93 0.97  0.97  0.71 0.71  0.83  0.63 0.93  0.93
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 0.95  0.95  1.00 0.95  0.95  1.00 1.00  1.00  1.00 1.00  1.00
Fnl Sat Adj: 0.93 0.92  0.92  0.93 0.92  0.92  0.71 0.71  0.83  0.63 0.93  0.93
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
```


EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North	South	East	West
Cycle Length, C:	xxxxxx	xxxxxx	100	100
Actual Green Time Per Lane Group, G:	xxxxxx	xxxxxx	19.21	19.21
Effective Green Time Per Lane Group, g:	xxxxxx	xxxxxx	20.21	20.21
Opposing Effective Green Time, go:	xxxxxx	xxxxxx	20.21	20.21
Number Of Opposing Lanes, No:	xxxxxx	xxxxxx	1	1
Number Of Lanes In Lane Group, N:	xxxxxx	xxxxxx	1	1
Adjusted Left-Turn Flow Rate, Vlt:	xxxxxx	xxxxxx	90	153
Proportion of Left Turns in Lane Group, Plt:	xxxxxx	xxxxxx	0.90	1.00
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	xxxxxx	xxxxxx	2.51	4.26
Adjusted Opposing Flow Rate, Vo:	xxxxxx	xxxxxx	26	100
Opposing Flow Per Lane Per Cycle, Volc:	xxxxxx	xxxxxx	0.72	2.78
Opposing Platoon Ratio, Rpo:	xxxxxx	xxxxxx	1.33	1.33
Lost Time Per Phase, tl:	xxxxxx	xxxxxx	3.00	3.00
Eff grn until arrival of left-turn car, gf:	xxxxxx	xxxxxx	0.49	0.00
Opposing Queue Ratio, qro:	xxxxxx	xxxxxx	0.73	0.73
Eff grn blocked by opposing queue, gq:	xxxxxx	xxxxxx	0.00	1.38
Eff grn while left turns filter thru, gu:	xxxxxx	xxxxxx	19.72	18.83
Max opposing cars arriving during gq-gf, n:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	0.86	0.81
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	0.90	1.00
Through-car Equivalents, el1:	xxxxxx	xxxxxx	1.44	1.45
Single Lane Through-car Equivalents, el2:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	xxxxxx	xxxxxx	0.19	0.20
Single Lane Left Turn Adjustment Factor, fm:	xxxxxx	xxxxxx	0.72	0.64
Left Turn Adjustment Factor, flt:	xxxxxx	xxxxxx	0.72	0.64

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.19	0.67	0.67	0.04	0.52	0.52	0.20	0.20	0.20	0.20	0.20	0.20
ArrivalType:		4			4			4			4	
ProgFactor:	0.97	0.42	0.42	1.00	0.76	0.76	0.94	0.94	0.94	0.96	0.92	0.92
Q1:	5.2	5.2	5.2	1.1	9.2	9.2	2.3	2.3	2.6	3.8	0.5	0.5
UpstreamVC:	0.61	0.61	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.76	0.76	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.29	0.63	0.63	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.5	1.1	1.1	1.2	1.7	1.7	0.6	0.6	0.6	1.5	0.1	0.1
HCM2KQueue:	5.7	6.3	6.3	2.3	10.9	10.9	2.8	2.8	3.1	5.3	0.6	0.6
70th%Factor:	1.19	1.19	1.19	1.19	1.18	1.18	1.19	1.19	1.19	1.19	1.20	1.20
HCM2k70thQ:	6.8	7.4	7.4	2.8	12.8	12.8	3.4	3.4	3.7	6.3	0.7	0.7
85th%Factor:	1.55	1.54	1.54	1.58	1.51	1.51	1.57	1.57	1.57	1.55	1.59	1.59
HCM2k85thQ:	8.8	9.7	9.7	3.7	16.5	16.5	4.4	4.4	4.9	8.2	1.0	1.0
90th%Factor:	1.70	1.69	1.69	1.76	1.63	1.63	1.75	1.75	1.74	1.71	1.79	1.79
HCM2k90thQ:	9.7	10.6	10.6	4.1	17.8	17.8	4.9	4.9	5.5	9.0	1.1	1.1
95th%Factor:	1.94	1.92	1.92	2.03	1.83	1.83	2.01	2.01	2.00	1.95	2.08	2.08
HCM2k95thQ:	11.0	12.1	12.1	4.8	19.9	19.9	5.7	5.7	6.3	10.3	1.3	1.3
98th%Factor:	2.35	2.32	2.32	2.54	2.13	2.13	2.51	2.51	2.49	2.37	2.65	2.65
HCM2k98thQ:	13.4	14.5	14.5	5.9	23.3	23.3	7.1	7.1	7.8	12.5	1.6	1.6

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 West Lane & Knickerbocker Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.611
Loss Time (sec): 12 Average Delay (sec/veh): 23.1
Optimal Cycle: 49 Level Of Service: C

Street Name:	West Lane						Knickerbocker Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:	PM Peak Hour											
Base Vol:	72	1129	86	113	834	59	100	95	44	135	73	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	72	1129	86	113	834	59	100	95	44	135	73	58
Added Vol:	0	275	0	0	241	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	72	1404	86	113	1075	59	100	95	44	135	73	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	78	1526	93	123	1168	64	109	103	48	147	79	63
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	78	1526	93	123	1168	64	109	103	48	147	79	63
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	78	1526	93	123	1168	64	109	103	48	147	79	63
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.88	0.88	0.93	0.93	0.93	0.93	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	2.84	0.16	1.00	0.68	0.32	1.00	0.56	0.44
Final Sat.:	1769	5083	1583	1769	4780	262	1769	1212	561	1769	969	770
Capacity Analysis Module:												
Vol/Sat:	0.04	0.30	0.06	0.07	0.24	0.24	0.06	0.09	0.09	0.08	0.08	0.08
Crit Moves:		****		****				****		****		
Green/Cycle:	0.09	0.49	0.49	0.11	0.51	0.51	0.12	0.14	0.14	0.14	0.16	0.16
Volume/Cap:	0.48	0.61	0.12	0.61	0.48	0.48	0.52	0.61	0.61	0.61	0.52	0.52
Delay/Veh:	45.3	18.9	13.8	47.6	15.9	15.9	43.8	44.9	44.9	45.3	40.5	40.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.3	18.9	13.8	47.6	15.9	15.9	43.8	44.9	44.9	45.3	40.5	40.5
LOS by Move:	D	B	B	D	B	B	D	D	D	D	D	D
HCM2k95thQ:	111	451	54	175	306	306	188	256	256	251	223	223

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 3	0 1		1	0 2	1 0		1	0 0	1 0		1	0 0	1 0	
Lane Group:	L	T	R		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	3	1		1	3	3		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.99	0.99		xxxx	0.95	0.95		xxxx	0.93	0.93	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.97	0.97		0.93	0.93	0.93		0.93	0.92	0.92	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.88	0.88		0.93	0.93	0.93		0.93	0.92	0.92	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.09	0.49	0.49		0.11	0.51	0.51		0.12	0.14	0.14		0.14	0.16	0.16	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.79	0.69		0.98	0.73	0.73		0.98	0.98	0.98		0.98	0.97	0.97	
Q1:		2.0	8.9	1.0		3.2	5.9	5.9		2.8	3.9	3.9		3.8	3.5	3.5
UpstreamVC:	0.60	0.60	0.60		0.63	0.63	0.63		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.76	0.76	0.76		0.73	0.73	0.73		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	0.19	0.53	0.48		0.21	0.52	0.52		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:		0.2	0.8	0.1		0.3	0.5	0.5		1.0	1.4	1.4		1.4	1.0	1.0
HCM2KQueue:		2.2	9.8	1.0		3.5	6.4	6.4		3.8	5.3	5.3		5.2	4.5	4.5
70th%Factor:	1.19	1.18	1.20		1.19	1.19	1.19		1.19	1.19	1.19		1.19	1.19	1.19	
HCM2k70thQ:		2.6	11.5	1.2		4.2	7.6	7.6		4.5	6.2	6.2		6.1	5.4	5.4
85th%Factor:	1.58	1.52	1.59		1.57	1.54	1.54		1.56	1.55	1.55		1.55	1.56	1.56	
HCM2k85thQ:		3.5	14.8	1.7		5.5	9.8	9.8		5.9	8.2	8.2		8.0	7.1	7.1
90th%Factor:	1.76	1.65	1.78		1.74	1.69	1.69		1.73	1.71	1.71		1.71	1.72	1.72	
HCM2k90thQ:		3.9	16.1	1.8		6.1	10.8	10.8		6.5	9.0	9.0		8.8	7.8	7.8
95th%Factor:	2.03	1.85	2.07		1.99	1.92	1.92		1.99	1.95	1.95		1.95	1.97	1.97	
HCM2k95thQ:		4.5	18.0	2.1		7.0	12.2	12.2		7.5	10.2	10.2		10.1	8.9	8.9
98th%Factor:	2.54	2.17	2.62		2.46	2.31	2.31		2.45	2.37	2.37		2.37	2.41	2.41	
HCM2k98thQ:		5.6	21.2	2.7		8.6	14.7	14.7		9.2	12.5	12.5		12.2	10.9	10.9

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.732
Loss Time (sec):	12	Average Delay (sec/veh):	35.8
Optimal Cycle:	64	Level Of Service:	D

Street Name:	West Lane						Hammer Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4 0 1	2	0	4 0 1	2	0	4 0 1	2	0	4 0 1
Volume Module:	PM Peak Hour											
Base Vol:	480	883	188	251	642	246	456	1222	179	366	1113	124
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	480	883	188	251	642	246	456	1222	179	366	1113	124
Added Vol:	0	275	0	0	241	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	480	1158	188	251	883	246	456	1222	179	366	1113	124
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	522	1259	204	273	960	267	496	1328	195	398	1210	135
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	522	1259	204	273	960	267	496	1328	195	398	1210	135
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	522	1259	204	273	960	267	496	1328	195	398	1210	135
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.15	0.19	0.13	0.08	0.14	0.17	0.14	0.20	0.12	0.12	0.18	0.09
Crit Moves:	****					****	****				****	
Green/Cycle:	0.21	0.31	0.31	0.13	0.23	0.23	0.20	0.28	0.28	0.16	0.24	0.24
Volume/Cap:	0.73	0.60	0.42	0.60	0.61	0.73	0.73	0.71	0.44	0.71	0.73	0.35
Delay/Veh:	40.9	30.0	28.1	43.3	35.2	43.0	41.7	33.7	30.5	43.6	36.5	31.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.9	30.0	28.1	43.3	35.2	43.0	41.7	33.7	30.5	43.6	36.5	31.8
LOS by Move:	D	C	C	D	D	D	D	C	C	D	D	C
HCM2k95thQ:	422	419	233	198	327	357	409	494	237	283	421	151

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	4	0 1	2	0	4	0 1	2	0	4	0 1	2	0	4	0 1
Lane Group:	L		T	R	L		T	R	L		T	R	L		T	R
#LnsInGrps:	2		4	1	2		4	1	2		4	1	2		4	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.21	0.31	0.31	0.13	0.23	0.23	0.20	0.28	0.28	0.16	0.24	0.24
ArrivalType:		4			4			4			4	
ProgFactor:	0.97	0.92	0.90	0.98	0.95	0.97	0.97	0.95	0.91	0.98	0.96	0.92
Q1:	6.8	7.5	4.0	3.6	6.2	6.6	6.5	8.6	4.1	5.3	8.2	2.9
UpstreamVC:	0.00	0.00	0.00	0.48	0.48	0.48	0.00	0.00	0.00	0.64	0.64	0.64
UpstreamAdj:	0.00	0.00	0.00	0.87	0.87	0.87	0.00	0.00	0.00	0.73	0.73	0.73
EarlyArrAdj:	1.00	1.00	1.00	0.27	0.39	0.35	1.00	1.00	1.00	0.25	0.33	0.30
Q2:	2.3	1.5	0.7	0.4	0.6	0.9	2.3	2.2	0.8	0.6	0.9	0.2
HCM2KQueue:	9.1	9.0	4.8	4.0	6.8	7.5	8.8	10.8	4.9	5.8	9.0	3.0
70th%Factor:	1.18	1.18	1.19	1.19	1.18	1.18	1.18	1.18	1.19	1.19	1.18	1.19
HCM2k70thQ:	10.7	10.6	5.7	4.8	8.1	8.9	10.3	12.7	5.8	6.9	10.7	3.6
85th%Factor:	1.52	1.52	1.56	1.56	1.54	1.53	1.52	1.51	1.56	1.55	1.52	1.57
HCM2k85thQ:	13.8	13.7	7.4	6.2	10.5	11.5	13.3	16.3	7.5	9.0	13.7	4.7
90th%Factor:	1.65	1.66	1.72	1.73	1.68	1.67	1.66	1.63	1.71	1.70	1.65	1.74
HCM2k90thQ:	15.0	14.9	8.2	6.9	11.5	12.6	14.5	17.7	8.3	9.9	14.9	5.3
95th%Factor:	1.86	1.86	1.96	1.98	1.91	1.89	1.87	1.83	1.96	1.93	1.86	2.01
HCM2k95thQ:	16.9	16.8	9.3	7.9	13.1	14.3	16.4	19.8	9.5	11.3	16.8	6.0
98th%Factor:	2.20	2.20	2.39	2.44	2.29	2.26	2.21	2.14	2.39	2.34	2.20	2.49
HCM2k98thQ:	19.9	19.8	11.4	9.7	15.7	17.0	19.4	23.1	11.6	13.7	19.9	7.5

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.902
Loss Time (sec): 12 Average Delay (sec/veh): 39.7
Optimal Cycle: 111 Level Of Service: D

Street Name:	Hammer Lane						Holman Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2 1	0	2	0 3	0 1	2	0 3	1 0	2	0 3 1 0
Volume Module:	PM Peak Hour											
Base Vol:	560	738	512	191	491	115	329	1088	326	472	965	72
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	560	738	512	191	491	115	329	1088	326	472	965	72
Added Vol:	0	58	0	0	51	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	560	796	512	191	542	115	329	1088	326	472	965	72
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	609	865	557	208	589	125	358	1183	354	513	1049	78
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	609	865	557	208	589	125	358	1183	354	513	1049	78
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	609	865	557	208	589	125	358	1183	354	513	1049	78
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.84	0.84	0.90	0.89	0.83	0.90	0.86	0.86	0.90	0.88	0.88
Lanes:	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.08	0.92	2.00	3.72	0.28
Final Sat.:	3432	3189	1594	3432	5083	1583	3432	5033	1508	3432	6244	466
Capacity Analysis Module:												
Vol/Sat:	0.18	0.27	0.35	0.06	0.12	0.08	0.10	0.23	0.23	0.15	0.17	0.17
Crit Moves:			****	****				****		****		
Green/Cycle:	0.27	0.39	0.39	0.07	0.18	0.18	0.16	0.26	0.26	0.17	0.26	0.26
Volume/Cap:	0.65	0.70	0.90	0.90	0.65	0.44	0.64	0.90	0.90	0.90	0.64	0.64
Delay/Veh:	33.6	26.9	36.5	80.6	39.7	37.7	41.6	42.8	42.8	58.5	33.4	33.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.6	26.9	36.5	80.6	39.7	37.7	41.6	42.8	42.8	58.5	33.4	33.4
LOS by Move:	C	C	D	F	D	D	D	D	D	E	C	C
HCM2k95thQ:	416	550	883	199	292	161	246	589	589	517	413	413

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	1	0	2	0 3	0	1	2	0 3	1	0	2	0 3	1	0
Lane Group:	L	RT		RT	L	T		R	L	RT		RT	L	RT		RT
#LnsInGrps:	2	3		3	2	3		1	2	4		4	2	4		4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.94	0.94		xxxx	xxxx	0.85		xxxx	0.97	0.97		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.92	0.92		0.93	0.98	0.83		0.93	0.95	0.95		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	0.91		0.97	0.91	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.84	0.84		0.90	0.89	0.83		0.90	0.86	0.86		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.27	0.39	0.39		0.07	0.18	0.18		0.16	0.26	0.26		0.17	0.26	0.26	
ArrivalType:		4				4				4				4		
ProgFactor:	0.94	0.90	0.96		1.00	0.97	0.95		0.97	0.98	0.98		0.99	0.94	0.94	
Q1:	7.2	10.0	15.4		2.9	5.4	3.0		4.7	11.1	11.1		7.1	7.2	7.2	
UpstreamVC:	0.00	0.00	0.00		0.23	0.23	0.23		0.71	0.71	0.71		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.98	0.98	0.98		0.64	0.64	0.64		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		0.20	0.37	0.34		0.22	0.30	0.30		1.00	1.00	1.00	
Q2:	1.7	2.2	5.5		1.1	0.7	0.3		0.4	2.0	2.0		4.2	1.6	1.6	
HCM2KQueue:	8.9	12.2	20.9		4.0	6.0	3.2		5.0	13.2	13.2		11.4	8.8	8.8	
70th%Factor:	1.18	1.17	1.16		1.19	1.19	1.19		1.19	1.17	1.17		1.18	1.18	1.18	
HCM2k70thQ:	10.5	14.3	24.3		4.8	7.2	3.8		6.0	15.5	15.5		13.4	10.4	10.4	
85th%Factor:	1.52	1.50	1.45		1.56	1.55	1.57		1.55	1.49	1.49		1.51	1.52	1.52	
HCM2k85thQ:	13.6	18.3	30.3		6.3	9.3	5.0		7.8	19.7	19.7		17.1	13.5	13.5	
90th%Factor:	1.66	1.62	1.54		1.73	1.70	1.74		1.71	1.61	1.61		1.63	1.66	1.66	
HCM2k90thQ:	14.8	19.7	32.2		6.9	10.3	5.6		8.6	21.2	21.2		18.5	14.7	14.7	
95th%Factor:	1.87	1.80	1.69		1.98	1.93	2.00		1.95	1.79	1.79		1.82	1.87	1.87	
HCM2k95thQ:	16.7	22.0	35.3		7.9	11.7	6.4		9.8	23.6	23.6		20.7	16.5	16.5	
98th%Factor:	2.20	2.09	1.90		2.43	2.33	2.48		2.38	2.06	2.06		2.12	2.21	2.21	
HCM2k98thQ:	19.7	25.5	39.8		9.8	14.1	8.0		12.0	27.2	27.2		24.1	19.5	19.5	

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #51 Eight Mile & Commercial DW #1

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[12.6]

Street Name:	Commercial Site Driveway #1						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 1			0 0 0 0 0			0 0 2 0 1			0 0 2 0 0		
Volume Module:PM Peak Hour												
Base Vol:	0	0	0	0	0	0	0	826	0	0	936	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	826	0	0	936	0
Added Vol:	0	0	0	0	0	0	0	147	19	0	178	0
Pass-By Vol:	0	0	31	0	0	0	0	-30	30	0	0	0
Initial Fut:	0	0	31	0	0	0	0	943	49	0	1114	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	34	0	0	0	0	1025	53	0	1211	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	34	0	0	0	0	1025	53	0	1211	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	513	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	507	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	507	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.07	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	5.3	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	12.6	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	12.6			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #51 Eight Mile & Commercial DW #1

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:							#17			#22		
Dist(miles):							0.250			0.250		
Speed (mph):							1.00			1.00		
SignalIndex:							#8			#53		
Cycle Time:							100 secs			100 secs		
InitVolume:							38	831		85	1030	
Saturation:							1769	3538		1769	3538	
ArrivalType:							4	4		4	4	
G/C:							0.07	0.33		0.13	0.81	
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:							0.098	0.440		0.178	1.075	
gq1:							1.94	13.15		3.95	-2.19	
gq2:							0.06	5.99		0.27	-1.39	
gq:							1.99	19.14		4.22	-3.57	
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:							0.400			0.400		
beta:							0.714			0.714		
ta (secs):							900.000			900.000		
F:							0.004			0.004		
f:							1.000	1.000		1.000	1.000	
vcmax:							14	253		29	-49	
vcg:							14	298		32	347	
vcmin:							2000	2000		2000	2000	
tp:							0.0	0.0		0.0	0.0	
p:							0.000			0.000		
*** Computation 3: Platoon Event Periods												
pdom/psubo:							0.000/0.000/Unconstrained					
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	1630	2236	513	1723	2289	605	0	xxxxx	xxxxx	0	xxxxx	xxxxx
AdjCnflVol:	1630	2236	513	1723	2289	605	0	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
ConflictVol:	1630	2236	513	1723	2289	605	0	xxxxx	xxxxx	0	xxxxx	xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	92	42	507	57	39	440	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
Potent Cap.:	92	42	507	57	39	440	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #52 Eight Mile & Commercial DW #2

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B[11.4]

Street Name:	Commercial Site Driveway #2						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 1			0 0 0 0 0			0 0 2 1 0			0 0 2 0 0		
Volume Module:PM Peak Hour												
Base Vol:	0	0	0	0	0	0	0	826	0	0	936	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	826	0	0	936	0
Added Vol:	0	0	37	0	0	0	0	127	19	0	178	0
Pass-By Vol:	0	0	31	0	0	0	0	-30	30	0	0	0
Initial Fut:	0	0	68	0	0	0	0	923	49	0	1114	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	74	0	0	0	0	1003	53	0	1211	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	74	0	0	0	0	1003	53	0	1211	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	361	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	636	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	636	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.12	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	9.8	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	11.4	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	11.4			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #52 Eight Mile & Commercial DW #2

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:							#17			#22		
Dist(miles):							0.250			0.250		
Speed (mph):							1.00			1.00		
SignalIndex:							#8			#53		
Cycle Time:							100 secs			100 secs		
InitVolume:							38	831		85	1030	
Saturation:							1769	3538		1769	3538	
ArrivalType:							4	4		4	4	
G/C:							0.07	0.33		0.13	0.81	
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:							0.098	0.440		0.178	1.075	
gq1:							1.94	13.15		3.95	-2.19	
gq2:							0.06	5.99		0.27	-1.39	
gq:							1.99	19.14		4.22	-3.57	
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:							0.400			0.400		
beta:							0.714			0.714		
ta (secs):							900.000			900.000		
F:							0.004			0.004		
f:							1.000	1.000		1.000	1.000	
vcmax:							14	253		29	-49	
vcg:							14	298		32	347	
vcmin:							2000	2000		2000	2000	
tp:							0.0	0.0		0.0	0.0	
p:							0.000			0.000		
*** Computation 3: Platoon Event Periods												
pdom/psubo:							0.000/0.000/Unconstrained					
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	1635	2241	361	1545	2267	605	0	xxxxx	xxxxx	0	xxxxx	xxxxx
AdjCnflVol:	1635	2241	361	1545	2267	605	0	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
ConflictVol:	1635	2241	361	1545	2267	605	0	xxxxx	xxxxx	0	xxxxx	xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	92	42	636	78	40	440	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
Potent Cap.:	92	42	636	78	40	440	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #53 Eight Mile Road & Road C

Cycle (sec):	100	Critical Vol./Cap.(X):	0.504
Loss Time (sec):	6	Average Delay (sec/veh):	12.3
Optimal Cycle:	27	Level Of Service:	B

Street Name:	Road C					Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	0	1	0	0	0	0	0	0	2
Volume Module:PM Peak Hour												
Base Vol:	0	0	0	0	0	0	0	826	0	0	936	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	826	0	0	936	0
Added Vol:	85	0	98	0	0	0	0	126	38	186	94	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	85	0	98	0	0	0	0	952	38	186	1030	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	92	0	107	0	0	0	0	1035	41	202	1120	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	92	0	107	0	0	0	0	1035	41	202	1120	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	92	0	107	0	0	0	0	1035	41	202	1120	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.93	0.83	0.93	0.93	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	1769	0	1583	0	0	0	0	3538	1583	1769	3538	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.07	0.00	0.00	0.00	0.00	0.29	0.03	0.11	0.32	0.00
Crit Moves:			****					****		****		
Green/Cycle:	0.13	0.00	0.13	0.00	0.00	0.00	0.00	0.58	0.58	0.23	0.81	0.00
Volume/Cap:	0.39	0.00	0.50	0.00	0.00	0.00	0.00	0.50	0.05	0.50	0.39	0.00
Delay/Veh:	40.7	0.0	42.2	0.0	0.0	0.0	0.0	12.7	9.1	34.8	2.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.7	0.0	42.2	0.0	0.0	0.0	0.0	12.7	9.1	34.8	2.8	0.0
LOS by Move:	D	A	D	A	A	A	A	B	A	C	A	A
HCM2k95thQ:	145	0	180	0	0	0	0	292	15	272	33	0

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #53 Eight Mile Road & Road C

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																				
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0	2	0	1	1	0	2	0	0
Lane Group:	L		xxxx		R	xxxx		xxxx		xxxx	xxxx		T		R	L		T		xxxx
#LnsInGrps:	1		0		1	0		0		0	0		2		1	1		2		0
HCM Ops Input Saturation Adj Module:																				
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12
CrsswalkWid:			8					8					8					8		
% Hev Veh:			2					2					2					2		
Grade:			0%					0%					0%					0%		
Parking/Hr:			No					No					No					No		
Bus Stp/Hr:			0					0					0					0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																			
Cnft Ped/Hr:			0					0					0					0		
ExclusiveRT:			Include					Include					Include					Include		
% RT Prtct:			0					0					0					0		
HCM Ops f(lt) Adj Case Module:																				
f(lt) Case:	1	xxxx		xxxx		xxxx	xxxx		xxxx		xxxx	xxxx		xxxx		1	xxxx		xxxx	
HCM Ops Saturation Adj Module:																				
Ln Wid Adj:	1.00	xxxx		1.00		xxxx	xxxx		xxxxx		xxxx	1.00		1.00		1.00	1.00		xxxxx	
Hev Veh Adj:	0.98	xxxx		0.98		xxxx	xxxx		xxxxx		xxxx	0.98		0.98		0.98	0.98		xxxxx	
Grade Adj:	1.00	xxxx		1.00		xxxx	xxxx		xxxxx		xxxx	1.00		1.00		1.00	1.00		xxxxx	
Parking Adj:	xxxx	xxxx		1.00		xxxx	xxxx		xxxxx		xxxx	xxxx		1.00		xxxx	1.00		xxxxx	
Bus Stp Adj:	xxxx	xxxx		1.00		xxxx	xxxx		xxxxx		xxxx	xxxx		1.00		xxxx	1.00		xxxxx	
Area Adj:	1.00	xxxx		1.00		xxxx	xxxx		xxxxx		xxxx	1.00		1.00		1.00	1.00		xxxxx	
RT Adj:	xxxx	xxxx		0.85		xxxx	xxxx		xxxxx		xxxx	xxxx		0.85		xxxx	xxxx		xxxxx	
LT Adj:	0.95	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		0.95	xxxx		xxxxx	
PedBike Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
HCM Sat Adj:	0.93	1.00		0.83		1.00	1.00		1.00		1.00	0.98		0.83		0.93	0.98		1.00	
Usr Sat Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Sat Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	0.95		1.00		1.00	0.95		1.00	
Fnl Sat Adj:	0.93	1.00		0.83		1.00	1.00		1.00		1.00	0.93		0.83		0.93	0.93		1.00	
Delay Adjustment Factor Module:																				
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																			
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >																			
DelAdjFctr:	1.00	0.00		1.00		0.00	0.00		0.00		0.00	1.00		1.00		1.00	1.00		0.00	

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #53 Eight Mile Road & Road C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.13	0.00	0.13	0.00	0.00	0.00	0.00	0.58	0.58	0.23	0.81	0.00
ArrivalType:		4			4			4			4	
ProgFactor:	0.97	1.00	0.97	1.00	1.00	1.00	1.00	0.63	0.55	0.94	0.00	1.00
Q1:	2.3	0.0	2.7	0.0	0.0	0.0	0.0	5.6	0.3	4.6	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.77	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.54	0.00	0.00	0.00
EarlyArrAdj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.42	0.38	1.00	1.00	0.00
Q2:	0.6	0.0	0.9	0.0	0.0	0.0	0.0	0.4	0.0	1.0	0.6	0.0
HCM2KQueue:	2.9	0.0	3.6	0.0	0.0	0.0	0.0	6.1	0.3	5.6	0.6	0.0
70th%Factor:	1.19	1.20	1.19	1.20	1.20	1.20	1.20	1.19	1.20	1.19	1.20	1.20
HCM2k70thQ:	3.4	0.0	4.3	0.0	0.0	0.0	0.0	7.2	0.3	6.7	0.8	0.0
85th%Factor:	1.57	1.60	1.57	1.60	1.60	1.60	1.60	1.55	1.60	1.55	1.59	1.60
HCM2k85thQ:	4.5	0.0	5.7	0.0	0.0	0.0	0.0	9.3	0.5	8.7	1.0	0.0
90th%Factor:	1.75	1.80	1.73	1.80	1.80	1.80	1.80	1.70	1.79	1.70	1.79	1.80
HCM2k90thQ:	5.0	0.0	6.3	0.0	0.0	0.0	0.0	10.3	0.5	9.5	1.1	0.0
95th%Factor:	2.01	2.10	1.99	2.10	2.10	2.10	2.10	1.93	2.09	1.94	2.08	2.10
HCM2k95thQ:	5.8	0.0	7.2	0.0	0.0	0.0	0.0	11.7	0.6	10.9	1.3	0.0
98th%Factor:	2.50	2.70	2.46	2.70	2.70	2.70	2.70	2.33	2.68	2.35	2.65	2.70
HCM2k98thQ:	7.2	0.0	8.9	0.0	0.0	0.0	0.0	14.1	0.8	13.2	1.7	0.0

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #54 West Lane & Commercial DW #3

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[11.6]

Street Name:	West Lane									Commercial Site Driveway #3		
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	1
Volume Module:	PM Peak Hour											
Base Vol:	0	997	0	0	846	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	997	0	0	846	0	0	0	0	0	0	0
Added Vol:	0	69	37	0	122	0	0	0	0	0	0	13
Pass-By Vol:	0	-30	30	0	0	0	0	0	0	0	0	31
Initial Fut:	0	1036	67	0	968	0	0	0	0	0	0	44
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	1126	73	0	1052	0	0	0	0	0	0	48
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	1126	73	0	1052	0	0	0	0	0	0	48
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	412
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	589
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	589
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.08
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	6.6
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.6
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	B
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			11.6		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #54 West Lane & Commercial DW #3

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:				#99								
Dist(miles):				0.250								
Speed (mph):				1.00								
SignalIndex:				#8								
Cycle Time:				100 secs								
InitVolume:			155		324							
Saturation:			1769		3538							
ArrivalType:			4		4							
G/C:			0.09		0.13							
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:			0.125		0.175							
gq1:			7.67		7.56							
gq2:			1.01		1.05							
gq:			8.68		8.61							
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:				0.350								
beta:				0.741								
ta (secs):				900.000								
F:				0.004								
f:			1.000		1.000							
vcmax:			64		128							
vcg:			65		134							
vcmin:			3000		3000							
tp:			0.0		0.0							
p:				0.000								
*** Computation 3: Platoon Event Periods												
pdom/psubo:	0.000/0.000/Unconstrained											
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	0	xxxxx	xxxxx	0	xxxxx	xxxxx	1428	2251	351	1513	2215	412
AdjCnflVol:	0	xxxxx	xxxxx	0	xxxxx	xxxxx	1428	2251	351	1513	2215	412
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	0	xxxxx	xxxxx	0	xxxxx	xxxxx	1428	2251	351	1513	2215	412
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx	95	41	645	111	43	589
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
Potent Cap.:	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx	95	41	645	111	43	589

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #55 West Lane & Commercial DW #4

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[11.3]

Street Name:	West Lane												Commercial Site Driveway #4											
Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	T	R				L	T	R				L	T	R				L	T	R			
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Rights:	Include						Include						Include						Include					
Lanes:	0	0	2	1	0		0	0	3	0	0		0	0	0	0	0		0	0	0	0	1	
Volume Module:PM Peak Hour																								
Base Vol:	0	997		0		0	846		0			0	0		0		0	0		0		0		0
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00			1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00
Initial Bse:	0	997		0		0	846		0			0	0		0		0	0		0		0		0
Added Vol:	0	98		37		0	122		0			0	0		0		0	0		0		0		9
PasserByVol:	0	0		0		0	0		0			0	0		0		0	0		0		0		0
Initial Fut:	0	1095		37		0	968		0			0	0		0		0	0		0		0		9
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00			1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00
PHF Adj:	0.92	0.92		0.92		0.92	0.92		0.92			0.92	0.92		0.92		0.92	0.92		0.92		0.92		0.92
PHF Volume:	0	1190		40		0	1052		0			0	0		0		0	0		0		0		10
Reduct Vol:	0	0		0		0	0		0			0	0		0		0	0		0		0		0
FinalVolume:	0	1190		40		0	1052		0			0	0		0		0	0		0		0		10
Critical Gap Module:																								
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9												
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3												
Capacity Module:																								
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	417												
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	585												
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	585												
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.02												
Level Of Service Module:																								
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	1.3												
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.3												
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	B												
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT												
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx												
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx												
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx												
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*												
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			11.3														
ApproachLOS:	*			*			*			B														

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #55 West Lane & Commercial DW #4

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			12 feet			12 feet			12 feet	

Time Period: 0.25 hour

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #56 West Lane & Road A

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[11.9]

Street Name:	West Lane									Road A								
Approach:	North Bound					South Bound					East Bound					West Bound		
Movement:	L	T	R			L	T	R			L	T	R			L	T	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign		
Rights:	Include					Include					Include					Include		
Lanes:	0	0	2	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
Volume Module:PM Peak Hour																				
Base Vol:	0	997	0	0	846	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	997	0	0	846	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	114	107	0	122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1111	107	0	968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	1208	116	0	1052	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	1208	116	0	1052	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9								
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	461								
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	548								
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	548								
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.04								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	3.3								
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.9								
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	B								
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT										
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			11.9										
ApproachLOS:	*			*			*			B										

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

```
*******************************************************************************
Intersection #56 West Lane & Road A
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
-----------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:       #106             #99
Dist(miles):      0.250            0.250
Speed (mph):       1.00             1.00
SignalIndex:      #16              #8
Cycle Time:         100 secs         100 secs
InitVolume:     0  1088        155   324
Saturation:     0  3538       1769  3538
ArrivalType:    0     4          4     4
G/C:         0.00  0.58       0.09  0.13
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:          0.000 0.773      0.125 0.175
gq1:         0.00  6.99       7.67  7.56
gq2:         0.00  4.86       1.01  1.05
gq:          0.00 11.85       8.68  8.61
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:            0.400            0.400
beta:             0.714            0.714
ta (secs):       900.000           900.000
F:                0.004            0.004
f:          1.000 1.000      1.000 1.000
vcmax:          0   159         59   116
vcg:            0   371         59   122
vcmin:       2000  2000       2000  2000
tp:           0.0   0.0        0.0   0.0
p:                0.000            0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1455  2376   526 1792  2318   461
AdjCnflVol:    0 xxxxx xxxxx    0 xxxxx xxxxx 1455  2376   526 1792  2318   461
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1455  2376   526 1792  2318   461
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1622 xxxxx xxxxx 1622 xxxxx xxxxx   91    34   496   72    37   548
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1622 xxxxx xxxxx 1622 xxxxx xxxxx   91    34   496   72    37   548
```


EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

```
*******************************************************************************
Intersection #57 Eight Mile & Hi Dens Res DW #1
*******************************************************************************
Average Delay (sec/veh):      0.5       Worst Case Level Of Service: B[ 14.8]
*******************************************************************************
Street Name:  High Density Resid Driveway #1          Eight Mile Road
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
-----------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  0    0  0  1  1  0    0  0  2  0  0
-----------|---------------||---------------||---------------||---------------|
Volume Module:PM Peak Hour
Base Vol:       0    0     0     0    0     0     0  826     0     0  936     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0     0    0     0     0  826     0     0  936     0
Added Vol:      0    0    82     0    0     0     0  220    21     0  209     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0    82     0    0     0     0 1046    21     0 1145     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0    89     0    0     0     0 1137    23     0 1245     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0    89     0    0     0     0 1137    23     0 1245     0
-----------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
-----------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   580  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx   458  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx   458  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.19  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
-----------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx  17.9  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx  14.8 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     B     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      14.8           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
*******************************************************************************
Note: Queue reported is the distance per lane in feet.
*******************************************************************************
```

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #57 Eight Mile & Hi Dens Res DW #1

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #58 Eight Mile & Hi Dens Res DW #2

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: C[15.4]

Street Name:	High Density Resid Driveway #2						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0	1	0 0 0	0	0	0 0 1	1	0	0 0 2	0	0
Volume Module: PM Peak Hour												
Base Vol:	0	0	0	0	0	0	0	825	0	0	936	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	825	0	0	936	0
Added Vol:	0	0	82	0	0	0	0	281	21	0	209	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	82	0	0	0	0	1106	21	0	1145	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	89	0	0	0	0	1202	23	0	1245	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	89	0	0	0	0	1202	23	0	1245	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	613	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	436	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	436	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.20	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	19.0	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	15.4	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	C	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	15.4			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	C			*			*			*		

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #58 Eight Mile & Hi Dens Res DW #2

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	2%	2%	2%	2%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #60 Eight Mile & Industrial DW #1

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[13.1]

Street Name:	Industrial Site Driveway #2												Eight Mile Road											
Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Rights:	Include						Include						Include						Include					
Lanes:	0	0	0	0	1		0	0	0	0	0		0	0	1	1	0		0	0	2	0	0	
Volume Module:PM Peak Hour																								
Base Vol:	0		0		0		0		0		0		0		732		0		0		856		0	
Growth Adj:	1.00	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00
Initial Bse:	0		0		0		0		0		0		0		732		0		0		856		0	
Added Vol:	0		0		2		0		0		0		0		362		1		0		223		0	
PasserByVol:	0		0		0		0		0		0		0		0		0		0		0		0	
Initial Fut:	0		0		2		0		0		0		0		1094		1		0		1079		0	
User Adj:	1.00	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00
PHF Adj:	0.92	0.92		0.92		0.92		0.92		0.92		0.92		0.92		0.92		0.92		0.92		0.92		0.92
PHF Volume:	0		0		2		0		0		0		0		1189		1		0		1173		0	
Reduct Vol:	0		0		0		0		0		0		0		0		0		0		0		0	
FinalVolume:	0		0		2		0		0		0		0		1189		1		0		1173		0	
Critical Gap Module:																								
Critical Gp:	xxxxx	xxxx			6.9		xxxxx	xxxx		xxxxx		xxxxx		xxxx		xxxxx		xxxxx		xxxx		xxxxx		
FollowUpTim:	xxxxx	xxxx			3.3		xxxxx	xxxx		xxxxx		xxxxx		xxxx		xxxxx		xxxxx		xxxx		xxxxx		
Capacity Module:																								
Cnflict Vol:	xxxx	xxxx			595		xxxx	xxxx		xxxxx		xxxx		xxxx		xxxxx		xxxx		xxxx		xxxxx		
Potent Cap.:	xxxx	xxxx			447		xxxx	xxxx		xxxxx		xxxx		xxxx		xxxxx		xxxx		xxxx		xxxxx		
Move Cap.:	xxxx	xxxx			447		xxxx	xxxx		xxxxx		xxxx		xxxx		xxxxx		xxxx		xxxx		xxxxx		
Volume/Cap:	xxxx	xxxx			0.00		xxxx	xxxx		xxxx		xxxx		xxxx		xxxx		xxxx		xxxx		xxxx		
Level Of Service Module:																								
2Way95thQ:	xxxx	xxxx			0.4		xxxx	xxxx		xxxxx		xxxx		xxxx		xxxxx		xxxx		xxxx		xxxxx		
Control Del:	xxxxx	xxxx			13.1		xxxxx	xxxx		xxxxx		xxxxx		xxxx		xxxxx		xxxxx		xxxx		xxxxx		
LOS by Move:	*		*		B		*		*		*		*		*		*		*		*		*	
Movement:	LT -	LTR -	RT				LT -	LTR -	RT				LT -	LTR -	RT				LT -	LTR -	RT			
Shared Cap.:	xxxx	xxxx		xxxxx			xxxx	xxxx		xxxxx			xxxx	xxxx		xxxxx			xxxx	xxxx		xxxxx		
SharedQueue:	xxxxx	xxxx		xxxxx			xxxxx	xxxx		xxxxx			xxxxx	xxxx		xxxxx			xxxxx	xxxx		xxxxx		
Shrd ConDel:	xxxxx	xxxx		xxxxx			xxxxx	xxxx		xxxxx			xxxxx	xxxx		xxxxx			xxxxx	xxxx		xxxxx		
Shared LOS:	*		*		*		*		*		*		*		*		*		*		*		*	
ApproachDel:			13.1						xxxxxx						xxxxxx						xxxxxx			
ApproachLOS:			B						*						*						*			

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #60 Eight Mile & Industrial DW #1

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #61 Eight Mile & Industrial DW #2

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[13.1]

Street Name:	Industrial Site Driveway #2						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 1			0 0 0 0 0			0 0 1 1 0			0 0 2 0 0		
Volume Module:PM Peak Hour												
Base Vol:	0	0	0	0	0	0	0	732	0	0	856	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	732	0	0	856	0
Added Vol:	0	0	2	0	0	0	0	364	1	0	223	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	2	0	0	0	0	1096	1	0	1079	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	2	0	0	0	0	1191	1	0	1173	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	2	0	0	0	0	1191	1	0	1173	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	596	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	447	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	447	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.4	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	13.1	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	13.1			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the distance per lane in feet.

EPAP With Bridge Alternative PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #61 Eight Mile & Industrial DW #2

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	2%	2%	2%	2%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0
LaneWidth:	12 feet	12 feet	12 feet	12 feet

Pedestrian Walk Speed: 4.00 feet/sec
Time Period: 0.25 hour

EPAP With Bridge Alternative PM Pk Hr

Future Queue Length Report (feet)

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
#3	[HCM2k95thQ]:	504	23	69	35	596	596	264	932	598	162	911	911
#4	[HCM2k95thQ]:	393	101	122	28	439	439	145	744	744	262	590	2
#5	[HCM2k95thQ]:	101	629	815	276	483	137	236	1084	23	862	657	37
#6	[HCM2k95thQ]:	27	514	514	282	300	300	227	227	227	596	596	596
#7	[HCM2k95thQ]:	0	66	66	40	40	40	24	19	0	49	16	16
#8	[HCM2k95thQ]:	1053	193	109	78	346	557	668	626	972	336	963	14
#9	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	6.1	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#10	[HCM2k95thQ]:	70	0	115	37	0	33	138	184	184	165	141	141
#11	[HCM2k95thQ]:	177	0	0	47	0	137	121	146	29	0	262	7
#14	[2Way95thQ]:	xxxx	xxxx	xxxx	27.6	27.6	xxxx	xxxx	xxxx	xxxx	13.7	xxxx	47.4
#15	[2Way95thQ]:	4.6	4.6	xxxx	xxxx	xxxx	xxxx	266	xxxx	5.3	xxxx	xxxx	xxxx
#16	[HCM2k95thQ]:	0	395	87	119	123	0	0	0	0	339	0	36
#17	[HCM2k95thQ]:	202	121	210	104	133	15	19	206	140	251	122	122
#18	[HCM2k95thQ]:	74	540	252	287	271	14	86	25	91	259	14	383
#19	[HCM2k95thQ]:	256	91	237	152	88	181	200	195	252	270	211	224
#20	[2Way95thQ]:	xxxx	xxxx	xxxx	2.2	2.2	xxxx	xxxx	xxxx	xxxx	140	xxxx	1.7
#21	[2Way95thQ]:	14.6	14.6	xxxx	xxxx	xxxx	xxxx	69.7	xxxx	242	xxxx	xxxx	xxxx
#24	[HCM2k95thQ]:	276	302	302	119	499	499	142	142	157	257	32	32
#25	[HCM2k95thQ]:	111	451	54	175	306	306	188	256	256	251	223	223
#26	[HCM2k95thQ]:	422	419	233	198	327	357	409	494	237	283	421	151
#27	[HCM2k95thQ]:	416	550	883	199	292	161	246	589	589	517	413	413
#51	[2Way95thQ]:	xxxx	xxxx	5.3	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#52	[2Way95thQ]:	xxxx	xxxx	9.8	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#53	[HCM2k95thQ]:	145	0	180	0	0	0	0	292	15	272	33	0
#54	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	6.6
#55	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	1.3
#56	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	3.3
#57	[2Way95thQ]:	xxxx	xxxx	17.9	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#58	[2Way95thQ]:	xxxx	xxxx	19.0	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#60	[2Way95thQ]:	xxxx	xxxx	0.4	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#61	[2Way95thQ]:	xxxx	xxxx	0.4	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

EPAP + GP Alt AM Pk Hr

Scenario Report

Scenario:	EPAP + GP Alt AM
Command:	EPAP + GP Alt AM
Volume:	EPAP AM
Geometry:	EPAP GP Alt
Impact Fee:	Default Impact Fee
Trip Generation:	AM Pk Hr
Trip Distribution:	EPAP AM
Paths:	EPAP GP Alt
Routes:	Default Route
Configuration:	Default Configuration

EPAP + GP Alt AM Pk Hr

Trip Generation Report

Forecast for AM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	0.00	ElemSchStudent	0.25	0.20	0	0	0	0.0
1	Village West	0.00	Tra Vigne SFDU	0.18	0.53	0	0	0	0.0
1	Village West	1646.00	GP Alt SFDU	0.18	0.53	296	872	1168	58.4
1	Village West	130.68	GP Alt Com KSF	0.60	0.36	78	47	125	6.2
1	Village West	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
1	Village West	232.00	GP Alt MFDU	0.10	0.41	23	95	118	5.9
1	Village West	0.00	Tra V Internal	-6.00	-6.00	0	0	0	0.0
1	Village West	1.00	GP Alt Interna	-7.00	-7.00	-7	-7	-14	-0.7
1	Village West	1.00	GP Alt Pass-By	-11.00	-7.00	-11	-7	-18	-0.9
	Zone 1 Subtotal					379	1000	1379	68.9
2	Village East	0.00	Tra Vigne SFDU	0.18	0.53	0	0	0	0.0
2	Village East	774.00	GP Alt SFDU	0.18	0.53	139	410	549	27.4
2	Village East	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
	Zone 2 Subtotal					139	410	549	27.4
4	Industrial	406.94	Indust KSF	0.15	0.03	61	12	73	3.6
	Zone 4 Subtotal					61	12	73	3.6
TOTAL						579	1422	2001	100.0

EPAP + GP Alt AM Pk Hr

Trip Distribution Report

Percent Of Trips EPAP AM

Zone	To Gates 1	2	5	6	8	9	10	11	14	15	16
1	2.0	1.0	2.0	4.0	7.0	2.0	3.0	1.0	1.0	3.0	8.0
2	2.0	1.0	2.0	4.0	7.0	2.0	3.0	1.0	1.0	3.0	8.0
4	2.0	1.0	2.0	4.0	7.0	2.0	3.0	1.0	1.0	3.0	8.0

Zone	To Gates 17	18	19	20	22	23	24	25	26
1	1.0	3.0	29.0	5.0	2.0	18.0	4.0	2.0	2.0
2	1.0	3.0	29.0	5.0	2.0	18.0	4.0	2.0	2.0
4	1.0	3.0	29.0	5.0	2.0	18.0	4.0	2.0	2.0

EPAP + GP Alt AM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Del/ Veh	V/ C	Future LOS	Del/ Veh	V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	E	57.2	1.021	E	62.5	1.051	+ 5.355 D/V
# 4 Eight Mile Rd & Davis Rd	C	34.4	0.828	D	36.9	0.872	+ 2.504 D/V
# 5 Eight Mile & Lower Sacto Rd	D	40.9	0.920	E	60.2	1.064	+19.317 D/V
# 6 West Lane & Armstrong Road	C	32.3	0.636	C	32.3	0.656	-0.057 D/V
# 7 West Lane & Ham Lane	A	8.7	0.273	A	9.2	0.279	+ 0.421 D/V
# 8 Eight Mile Rd & West Ln	D	43.2	0.915	E	73.7	1.135	+30.479 D/V
# 9 Eight Mile Road & Ham Lane	A	3.1	0.283	C	31.0	0.793	+27.930 D/V
# 10 Eight Mile & Leach Rd/St J	A	1.3	0.317	B	17.3	0.683	+16.077 D/V
# 11 Eight Mile & MickeGrove/Holman	A	1.3	0.277	B	10.5	0.457	+ 9.137 D/V
# 14 SR99 W Front & SB Ramps 8 Mile	B	11.3	0.332	B	14.6	0.446	+ 3.296 D/V
# 15 SR99 E Front & NB Ramps 8 Mile	C	20.5	0.377	F	53.4	0.841	+32.894 D/V
# 16 West & L.C.MarkTaylor/Marlette	A	0.0	0.000	A	0.0	0.000	+ 0.000 D/V
# 17 Holman & Lt Col Mark Taylor	C	30.0	0.338	C	30.2	0.346	+ 0.190 D/V
# 18 Morada Lane & West Lane	C	28.2	0.506	C	27.2	0.608	-0.944 D/V
# 19 Morada Lane & Holman Road	D	35.0	0.583	D	35.1	0.583	+ 0.072 D/V
# 20 SR99 W Front & SB Ramps Morada	F	93.5	0.789	F	93.5	0.789	+ 0.000 D/V
# 21 SR99 E Front & NB Ramps Morada	F	69.2	1.054	F	69.2	1.054	+ 0.000 D/V
# 24 West Ln & West Ln Frontage Rd	C	21.0	0.593	C	20.7	0.741	-0.244 D/V
# 25 West Lane & Knickerbocker Dr	C	25.3	0.473	C	22.5	0.573	-2.755 D/V
# 26 West Lane & Hammer Lane	C	32.8	0.554	C	32.5	0.629	-0.256 D/V
# 27 Hammer Lane & Holman Road	D	37.9	0.876	D	38.3	0.883	+ 0.374 D/V

EPAP + GP Alt AM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 14 SR99 W Front & SB Ramps 8 Mile	??? / ???	No / No
# 15 SR99 E Front & NB Ramps 8 Mile	??? / ???	No / No
# 16 West & L.C.MarkTaylor/Marlette	??? / ???	No / No
# 20 SR99 W Front & SB Ramps Morada	??? / ???	Yes / Yes
# 21 SR99 E Front & NB Ramps Morada	??? / ???	Yes / Yes

EPAP + GP Alt AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	0	1 0	0	1	0	0 0	0	0	0	0 0	1	0	0	0 1
Initial Vol:	0	103		1	606	106		0	0	0		0	14	0	299	
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				14.6			

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.3]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=313]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1129]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + GP Alt AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	103			1	606	106			0	0		0		0	14		0	299	

Major Street Volume: 816
Minor Approach Volume: 313
Minor Approach Volume Threshold: 356

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + GP Alt AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	152	209			0	0	329		242		200		0		50	0		0		0
ApproachDel:	xxxxxx					xxxxxx					53.4					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=3.7]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=250]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1182]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + GP Alt AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	152	209			0		0	329		242	200		0		50		0		0	0

Major Street Volume: 932
Minor Approach Volume: 250
Minor Approach Volume Threshold: 404

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + GP Alt AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #16 West & L.C.MarkTaylor/Marlette

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	876		59		0	1564		0		0		0		0	0		0		0
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					xxxxxx				

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + GP Alt AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #16 West & L.C.MarkTaylor/Marlette

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	876		59		0	1564		0		0		0		0	0		0		0

Major Street Volume: 2499
Minor Approach Volume: 0
Minor Approach Volume Threshold: -31 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + GP Alt AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #20 SR99 W Front & SB Ramps Morada

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	62		788		31	50		0		0		0		0	282		0		19
ApproachDel:	50.5					93.5					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=11.9]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=850]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1232]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=2.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=81]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1232]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + GP Alt AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #20 SR99 W Front & SB Ramps Morada

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	62		788		31	50		0		0	0		0		282	0		19	

Major Street Volume: 301
Minor Approach Volume: 850
Minor Approach Volume Threshold: 698

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + GP Alt AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #21 SR99 E Front & NB Ramps Morada

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0
Initial Vol:	230	451		0		0	511		2		95		0	214		0		0		0
ApproachDel:	xxxxxx					xxxxxx					69.2					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=5.9]
SUCCEED - Vehicle-hours >= 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=309]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1503]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + GP Alt AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #21 SR99 E Front & NB Ramps Morada

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0 0	0	0 0	0 1	0	1 0	0 0	1	0 0	0 0	0
Initial Vol:	230	451	0	0	511	2	95	0	214	0	0	0

Major Street Volume: 1194
Minor Approach Volume: 309
Minor Approach Volume Threshold: 237

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + GP Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.051
Loss Time (sec):	12	Average Delay (sec/veh):	62.5
Optimal Cycle:	180	Level Of Service:	E

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	0 1	0	1 0	2 0	1	1 0	1 1	0
Volume Module:	AM Peak Hour											
Base Vol:	836	46	103	5	26	229	169	983	326	80	1148	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	836	46	103	5	26	229	169	983	326	80	1148	14
Added Vol:	0	0	6	0	0	0	0	35	0	14	85	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	836	46	109	5	26	229	169	1018	326	94	1233	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	909	50	118	5	28	249	184	1107	354	102	1340	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	909	50	118	5	28	249	184	1107	354	102	1340	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	909	50	118	5	28	249	184	1107	354	102	1340	15
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.85	0.85	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	2.00	1.00	1.00	1.00	0.10	0.90	1.00	2.00	1.00	1.00	1.98	0.02
Final Sat.:	3432	1862	1583	1769	164	1446	1769	3538	1583	1769	3491	40
Capacity Analysis Module:												
Vol/Sat:	0.26	0.03	0.07	0.00	0.17	0.17	0.10	0.31	0.22	0.06	0.38	0.38
Crit Moves:	****				****		****				****	
Green/Cycle:	0.25	0.40	0.40	0.02	0.16	0.16	0.10	0.39	0.39	0.07	0.37	0.37
Volume/Cap:	1.05	0.07	0.19	0.19	1.05	1.05	1.05	0.80	0.57	0.80	1.05	1.05
Delay/Veh:	82.2	18.6	19.6	51.6	111	111.2	127.2	30.3	25.1	74.3	71.2	71.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	82.2	18.6	19.6	51.6	111	111.2	127.2	30.3	25.1	74.3	71.2	71.2
LOS by Move:	F	B	B	D	F	F	F	C	C	E	E	E
HCM2k95thQ:	930	39	99	19	640	640	377	666	348	166	1158	1158

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	1	0 1	1	0	0	1 0	1	0	2	0 1	1	0	1	1 0
Lane Group:	L		T	R	L		RT	RT	L		T	R	L		RT	RT
#LnsInGrps:	2		1	1	1		1	1	1		2	1	1		2	2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.87	0.87		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.85	0.85		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	0.95	
Fnl Sat Adj:	0.90	0.98	0.83		0.93	0.85	0.85		0.93	0.93	0.83		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.25	0.40	0.40		0.02	0.16	0.16		0.10	0.39	0.39		0.07	0.37	0.37	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.79	0.80		1.00	1.00	1.00		1.00	0.93	0.87		0.99	1.00	1.00	
Q1:	13.0	0.7	1.7		0.1	7.7	7.7		5.1	13.3	6.7		2.8	19.8	19.8	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.49	0.49	0.49		0.62	0.62	0.62	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.87	0.87	0.87		0.74	0.74	0.74	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.22	0.53	0.48		0.16	0.43	0.43	
Q2:	9.2	0.1	0.2		0.2	6.8	6.8		2.9	1.9	0.6		0.5	8.7	8.7	
HCM2KQueue:	22.2	0.7	1.9		0.4	14.5	14.5		8.0	15.1	7.3		3.3	28.5	28.5	
70th%Factor:	1.16	1.20	1.20		1.20	1.17	1.17		1.18	1.17	1.18		1.19	1.15	1.15	
HCM2k70thQ:	25.7	0.9	2.3		0.4	16.9	16.9		9.4	17.7	8.7		4.0	32.8	32.8	
85th%Factor:	1.44	1.59	1.58		1.60	1.49	1.49		1.53	1.48	1.53		1.57	1.42	1.42	
HCM2k85thQ:	32.0	1.2	3.1		0.6	21.5	21.5		12.2	22.4	11.2		5.2	40.4	40.4	
90th%Factor:	1.53	1.79	1.76		1.79	1.59	1.59		1.67	1.59	1.68		1.74	1.50	1.50	
HCM2k90thQ:	34.0	1.3	3.4		0.7	23.1	23.1		13.3	24.0	12.3		5.8	42.7	42.7	
95th%Factor:	1.67	2.08	2.04		2.09	1.77	1.77		1.88	1.76	1.90		2.00	1.62	1.62	
HCM2k95thQ:	37.2	1.5	4.0		0.8	25.6	25.6		15.1	26.6	13.9		6.6	46.3	46.3	
98th%Factor:	1.88	2.64	2.56		2.67	2.03	2.03		2.24	2.01	2.27		2.47	1.81	1.81	
HCM2k98thQ:	41.8	2.0	5.0		1.0	29.4	29.4		17.9	30.5	16.6		8.2	51.7	51.7	

EPAP + GP Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.872
Loss Time (sec):	12	Average Delay (sec/veh):	36.9
Optimal Cycle:	98	Level Of Service:	D

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	1	0	0	1	0	1	0
	1	1	0	1	0	1	0	2	0	1		
Volume Module:	AM Peak Hour											
Base Vol:	251	120	150	6	161	68	111	957	163	134	780	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	251	120	150	6	161	68	111	957	163	134	780	6
Added Vol:	0	0	17	0	0	0	0	41	0	43	100	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	251	120	167	6	161	68	111	998	163	177	880	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	273	130	182	7	175	74	121	1085	177	192	957	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	273	130	182	7	175	74	121	1085	177	192	957	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	273	130	182	7	175	74	121	1085	177	192	957	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.94	0.94	0.93	0.91	0.91	0.93	0.93	0.83
Lanes:	1.00	1.00	1.00	1.00	0.70	0.30	1.00	1.72	0.28	1.00	2.00	1.00
Final Sat.:	1769	1862	1583	1769	1250	528	1769	2977	486	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.15	0.07	0.11	0.00	0.14	0.14	0.07	0.36	0.36	0.11	0.27	0.00
Crit Moves:	****				****			****		****		
Green/Cycle:	0.18	0.33	0.33	0.01	0.16	0.16	0.11	0.42	0.42	0.12	0.43	0.43
Volume/Cap:	0.87	0.21	0.35	0.35	0.87	0.87	0.62	0.87	0.87	0.87	0.62	0.01
Delay/Veh:	62.5	24.5	26.0	60.2	65.1	65.1	48.8	32.7	32.7	72.3	22.8	16.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	62.5	24.5	26.0	60.2	65.1	65.1	48.8	32.7	32.7	72.3	22.8	16.1
LOS by Move:	E	C	C	E	E	E	D	C	C	E	C	B
HCM2k95thQ:	508	128	193	31	479	479	168	765	765	405	495	5

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L - T - R				L - T - R				L - T - R				L - T - R			
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	1	0	1	1	0	0	1	0	1	0	1	1	0	1
	0	2	0	1												
Lane Group:	L	T	R		L	RT		RT	L	RT		RT	L	T	R	
#LnsInGrps:	1	1	1		1	1		1	1	2		2	1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12		12	12	12		12	12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00		1.00	xxxx	1.00		1.00	xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00		1.00	xxxx	1.00		1.00	xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.96		0.96	xxxx	0.98		0.98	xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx		xxxxx	0.95	xxxx		xxxxx	0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.94		0.94	0.93	0.96		0.96	0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	0.95		0.95	1.00	0.95	1.00	
Fnl Sat Adj:	0.93	0.98	0.83		0.93	0.94		0.94	0.93	0.91		0.91	0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.18	0.33	0.33	0.01	0.16	0.16	0.11	0.42	0.42	0.12	0.43	0.43
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.86	0.88	1.00	0.99	0.99	0.98	0.94	0.94	0.99	0.85	0.75
Q1:	7.3	2.3	3.4	0.2	6.7	6.7	3.1	15.9	15.9	5.2	9.2	0.1
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.80	0.80	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.50	0.50	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.14	0.31	0.31	1.00	1.00	1.00
Q2:	3.9	0.3	0.5	0.4	3.7	3.7	0.2	1.9	1.9	3.4	1.6	0.0
HCM2KQueue:	11.1	2.5	3.9	0.6	10.4	10.4	3.4	17.7	17.7	8.7	10.8	0.1
70th%Factor:	1.18	1.19	1.19	1.20	1.18	1.18	1.19	1.16	1.16	1.18	1.18	1.20
HCM2k70thQ:	13.1	3.0	4.6	0.7	12.3	12.3	4.0	20.7	20.7	10.2	12.7	0.1
85th%Factor:	1.51	1.58	1.56	1.59	1.51	1.51	1.57	1.47	1.47	1.52	1.51	1.60
HCM2k85thQ:	16.8	4.0	6.1	1.0	15.8	15.8	5.3	26.0	26.0	13.2	16.3	0.1
90th%Factor:	1.63	1.75	1.73	1.79	1.64	1.64	1.74	1.56	1.56	1.66	1.63	1.80
HCM2k90thQ:	18.2	4.4	6.7	1.1	17.1	17.1	5.9	27.8	27.8	14.4	17.7	0.2
95th%Factor:	1.82	2.02	1.98	2.08	1.84	1.84	2.00	1.72	1.72	1.87	1.83	2.10
HCM2k95thQ:	20.3	5.1	7.7	1.3	19.1	19.1	6.7	30.6	30.6	16.2	19.8	0.2
98th%Factor:	2.12	2.52	2.44	2.65	2.15	2.15	2.47	1.96	1.96	2.21	2.13	2.69
HCM2k98thQ:	23.7	6.4	9.5	1.6	22.4	22.4	8.3	34.7	34.7	19.2	23.1	0.2

EPAP + GP Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.064
Loss Time (sec):	12	Average Delay (sec/veh):	60.2
Optimal Cycle:	180	Level Of Service:	E

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:	AM Peak Hour											
Base Vol:	44	268	393	57	412	103	86	1020	21	311	814	61
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	268	393	57	412	103	86	1020	21	311	814	61
Added Vol:	0	0	46	12	0	0	0	58	0	114	142	28
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	44	268	439	69	412	103	86	1078	21	425	956	89
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	48	291	477	75	448	112	93	1172	23	462	1039	97
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	48	291	477	75	448	112	93	1172	23	462	1039	97
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	48	291	477	75	448	112	93	1172	23	462	1039	97
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.98	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3432	1862	1583	1769	1862	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.01	0.16	0.30	0.04	0.24	0.07	0.05	0.33	0.01	0.26	0.29	0.06
Crit Moves:			****	****				****		****		
Green/Cycle:	0.02	0.28	0.28	0.04	0.31	0.31	0.08	0.31	0.31	0.25	0.47	0.47
Volume/Cap:	0.79	0.55	1.06	1.06	0.79	0.23	0.62	1.06	0.05	1.06	0.62	0.13
Delay/Veh:	97.2	31.7	96.3	173.9	39.0	26.2	52.1	80.3	24.1	98.9	20.5	14.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	97.2	31.7	96.3	173.9	39.0	26.2	52.1	80.3	24.1	98.9	20.5	14.9
LOS by Move:	F	C	F	F	D	C	D	F	C	F	C	B
HCM2k95thQ:	105	357	958	264	619	118	191	1157	22	935	496	64

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2 0	1 0	1		1 0	1 0	1		1 0	2 0	1		1 0	2 0	1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	1	1		1	1	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.90	0.98	0.83		0.93	0.98	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.02	0.28	0.28		0.04	0.31	0.31		0.08	0.31	0.31		0.25	0.47	0.47	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.93	1.00		1.00	0.95	0.88		0.99	1.00	0.85		1.00	0.82	0.72	
Q1:	0.7	6.4	13.3		2.1	10.9	2.0		2.5	17.1	0.4		12.8	9.3	1.1	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	1.4	1.2	9.7		3.4	3.1	0.3		1.4	11.4	0.0		9.5	1.6	0.1	
HCM2KQueue:	2.1	7.5	23.0		5.4	13.9	2.3		3.9	28.5	0.4		22.4	10.9	1.2	
70th%Factor:	1.19	1.18	1.16		1.19	1.17	1.19		1.19	1.15	1.20		1.16	1.18	1.20	
HCM2k70thQ:	2.5	8.9	26.6		6.5	16.3	2.8		4.6	32.8	0.5		25.9	12.8	1.5	
85th%Factor:	1.58	1.53	1.44		1.55	1.49	1.58		1.56	1.42	1.60		1.44	1.51	1.59	
HCM2k85thQ:	3.3	11.6	33.1		8.4	20.7	3.7		6.0	40.4	0.7		32.3	16.4	2.0	
90th%Factor:	1.76	1.67	1.53		1.70	1.60	1.76		1.73	1.50	1.79		1.53	1.63	1.78	
HCM2k90thQ:	3.6	12.6	35.1		9.3	22.3	4.1		6.7	42.7	0.8		34.2	17.7	2.2	
95th%Factor:	2.03	1.89	1.67		1.94	1.78	2.03		1.98	1.62	2.09		1.67	1.83	2.06	
HCM2k95thQ:	4.2	14.3	38.3		10.6	24.7	4.7		7.7	46.3	0.9		37.4	19.8	2.5	
98th%Factor:	2.55	2.26	1.87		2.36	2.04	2.54		2.44	1.81	2.67		1.88	2.13	2.61	
HCM2k98thQ:	5.3	17.1	43.0		12.8	28.4	5.9		9.4	51.7	1.1		42.0	23.2	3.2	

EPAP + GP Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.656
Loss Time (sec): 12 Average Delay (sec/veh): 32.3
Optimal Cycle: 54 Level Of Service: C

Street Name:	West Lane						Armstrong Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	0	1	1	0	0	0
	1!	0	0	1	0	0	0	1	1	0	0	0
Volume Module:	AM Peak Hour											
Base Vol:	4	387	76	203	525	33	45	172	5	60	97	96
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	387	76	203	525	33	45	172	5	60	97	96
Added Vol:	0	57	0	0	23	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	444	76	203	548	33	45	172	5	60	97	96
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	4	483	83	221	596	36	49	187	5	65	105	104
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	483	83	221	596	36	49	187	5	65	105	104
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	483	83	221	596	36	49	187	5	65	105	104
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.91	0.91	0.93	0.92	0.92	0.97	0.97	0.97	0.92	0.92	0.92
Lanes:	1.00	1.71	0.29	1.00	1.89	0.11	0.20	0.78	0.02	0.24	0.38	0.38
Final Sat.:	1769	2954	506	1769	3307	199	373	1424	41	414	669	662
Capacity Analysis Module:												
Vol/Sat:	0.00	0.16	0.16	0.12	0.18	0.18	0.13	0.13	0.13	0.16	0.16	0.16
Crit Moves:		****		****				****			****	
Green/Cycle:	0.01	0.25	0.25	0.19	0.43	0.43	0.20	0.20	0.20	0.24	0.24	0.24
Volume/Cap:	0.42	0.66	0.66	0.66	0.42	0.42	0.66	0.66	0.66	0.66	0.66	0.66
Delay/Veh:	74.1	35.5	35.5	42.1	19.8	19.8	41.1	41.1	41.1	38.0	38.0	38.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	74.1	35.5	35.5	42.1	19.8	19.8	41.1	41.1	41.1	38.0	38.0	38.0
LOS by Move:	E	D	D	D	B	B	D	D	D	D	D	D
HCM2k95thQ:	30	411	411	342	282	282	363	363	363	390	390	390

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																				
Lanes:	1	0	1	1	0	1	0	1	1	0	0	0	1!	0	0	0	0	1!	0	0
Lane Group:	L		RT		RT	L		RT		RT	LTR		LTR		LTR	LTR		LTR		LTR
#LnsInGrps:	1		2		2	1		2		2	1		1		1	1		1		1
HCM Ops Input Saturation Adj Module:																				
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12
CrsswalkWid:	8					8					8					8				
% Hev Veh:	2					2					2					2				
Grade:	0%					0%					0%					0%				
Parking/Hr:	No					No					No					No				
Bus Stp/Hr:	0					0					0					0				
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >																			
Cnft Ped/Hr:	0					0					0					0				
ExclusiveRT:	Include					Include					Include					Include				
% RT Prtct:	0					0					0					0				
HCM Ops f(lt) Adj Case Module:																				
f(lt) Case:	1	xxxx		xxxx		1	xxxx		xxxx		4		4		4	4		4		4
HCM Ops Saturation Adj Module:																				
Ln Wid Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Hev Veh Adj:	0.98	0.98		0.98		0.98	0.98		0.98		0.98	0.98		0.98		0.98	0.98		0.98	
Grade Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Parking Adj:	xxxx	1.00		1.00		xxxx	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Bus Stp Adj:	xxxx	1.00		1.00		xxxx	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Area Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
RT Adj:	xxxx	0.98		0.98		xxxx	0.99		0.99		1.00	1.00		1.00		0.95	0.95		0.95	
LT Adj:	0.95	xxxx		xxxxx		0.95	xxxx		xxxxx		0.99	0.99		0.99		0.99	0.99		0.99	
PedBike Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
HCM Sat Adj:	0.93	0.96		0.96		0.93	0.97		0.97		0.97	0.97		0.97		0.92	0.92		0.92	
Usr Sat Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Sat Adj:	1.00	0.95		0.95		1.00	0.95		0.95		1.00	1.00		1.00		1.00	1.00		1.00	
Fnl Sat Adj:	0.93	0.91		0.91		0.93	0.92		0.92		0.97	0.97		0.97		0.92	0.92		0.92	
Delay Adjustment Factor Module:																				
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >																			
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >																			
DelAdjFctr:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.01	0.25	0.25	0.19	0.43	0.43	0.20	0.20	0.20	0.24	0.24	0.24
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.95	0.95	0.97	0.80	0.80	0.97	0.97	0.97	0.95	0.95	0.95
Q1:	0.1	7.1	7.1	5.5	5.1	5.1	6.0	6.0	6.0	6.6	6.6	6.6
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.4	1.7	1.7	1.7	0.7	0.7	1.7	1.7	1.7	1.7	1.7	1.7
HCM2KQueue:	0.6	8.8	8.8	7.2	5.8	5.8	7.7	7.7	7.7	8.3	8.3	8.3
70th%Factor:	1.20	1.18	1.18	1.18	1.19	1.19	1.18	1.18	1.18	1.18	1.18	1.18
HCM2k70thQ:	0.7	10.4	10.4	8.5	6.9	6.9	9.1	9.1	9.1	9.8	9.8	9.8
85th%Factor:	1.59	1.52	1.52	1.54	1.55	1.55	1.53	1.53	1.53	1.53	1.53	1.53
HCM2k85thQ:	0.9	13.4	13.4	11.0	9.0	9.0	11.8	11.8	11.8	12.7	12.7	12.7
90th%Factor:	1.79	1.66	1.66	1.68	1.70	1.70	1.67	1.67	1.67	1.66	1.66	1.66
HCM2k90thQ:	1.0	14.6	14.6	12.1	9.9	9.9	12.8	12.8	12.8	13.8	13.8	13.8
95th%Factor:	2.08	1.87	1.87	1.90	1.93	1.93	1.89	1.89	1.89	1.88	1.88	1.88
HCM2k95thQ:	1.2	16.4	16.4	13.7	11.3	11.3	14.5	14.5	14.5	15.6	15.6	15.6
98th%Factor:	2.66	2.21	2.21	2.28	2.34	2.34	2.25	2.25	2.25	2.23	2.23	2.23
HCM2k98thQ:	1.5	19.4	19.4	16.4	13.6	13.6	17.3	17.3	17.3	18.5	18.5	18.5

EPAP + GP Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.279
Loss Time (sec): 9 Average Delay (sec/veh): 9.2
Optimal Cycle: 25 Level Of Service: A

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0	1	1	0
Volume Module:	AM Peak Hour											
Base Vol:	1	2	30	34	6	32	4	461	0	14	612	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	2	30	34	6	32	4	461	0	14	612	18
Added Vol:	0	0	12	0	0	0	0	44	0	6	18	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	2	42	34	6	32	4	505	0	20	630	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	1	2	46	37	7	35	4	549	0	22	685	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	2	46	37	7	35	4	549	0	22	685	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	2	46	37	7	35	4	549	0	22	685	20
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.85	0.85	0.85	0.79	0.79	0.79	0.93	0.93	0.95	0.93	0.93	0.93
Lanes:	0.02	0.04	0.94	0.48	0.08	0.44	1.00	2.00	0.00	1.00	1.94	0.06
Final Sat.:	36	72	1514	711	125	669	1769	3538	0	1769	3426	98
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.03	0.05	0.05	0.05	0.00	0.16	0.00	0.01	0.20	0.20
Crit Moves:					****		****				****	
Green/Cycle:	0.19	0.19	0.19	0.19	0.19	0.19	0.01	0.67	0.00	0.05	0.72	0.72
Volume/Cap:	0.16	0.16	0.16	0.28	0.28	0.28	0.28	0.23	0.00	0.23	0.28	0.28
Delay/Veh:	34.4	34.4	34.4	35.5	35.5	35.5	58.8	6.5	0.0	46.6	5.1	5.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.4	34.4	34.4	35.5	35.5	35.5	58.8	6.5	0.0	46.6	5.1	5.1
LOS by Move:	C	C	C	D	D	D	E	A	A	D	A	A
HCM2k95thQ:	65	65	65	109	109	109	23	70	0	45	54	54

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	0	0	1!	0	0	0	0	1! 0	0	1	0	1	1	0	1	0
Lane Group:	LTR	LTR	LTR		LTR	LTR	LTR		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	2	2		1	2	2	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	5	5	5		5	5	5		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	xxxxx		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	xxxxx		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	xxxxx		1.00	1.00	1.00	
Parking Adj:	1.00	1.00	1.00		1.00	1.00	1.00		xxxx	1.00	xxxxx		xxxx	1.00	1.00	
Bus Stp Adj:	1.00	1.00	1.00		1.00	1.00	1.00		xxxx	1.00	xxxxx		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	xxxxx		1.00	1.00	1.00	
RT Adj:	0.87	0.87	0.87		0.94	0.94	0.94		xxxx	xxxx	xxxxx		xxxx	1.00	1.00	
LT Adj:	1.00	1.00	1.00		0.86	0.86	0.86		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.85	0.85	0.85		0.79	0.79	0.79		0.93	0.98	1.00		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	0.95		1.00	0.95	0.95	
Fnl Sat Adj:	0.85	0.85	0.85		0.79	0.79	0.79		0.93	0.93	0.95		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	1.00	

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	100	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	17.60	17.60	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	18.60	18.60	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	18.60	18.60	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	1	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	1	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	1	37	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	0.02	0.47	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	0.47	0.02	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	0.03	1.03	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	78	49	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	2.17	1.36	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	1.33	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	3.00	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	13.00	4.34	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	0.75	0.75	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	3.59	1.62	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	5.60	14.26	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	0.00	0.00	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	0.53	0.98	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	1.52	1.47	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	1.00	1.00	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	0.11	0.16	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	1.00	0.86	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	1.00	0.86	xxxxxx	xxxxxx

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.19	0.19	0.19	0.19	0.19	0.19	0.01	0.67	0.00	0.05	0.72	0.72
ArrivalType:	4			4			4			4		
ProgFactor:	0.93	0.93	0.93	0.94	0.94	0.94	1.00	0.34	1.00	0.99	0.18	0.18
Q1:	1.1	1.1	1.1	1.8	1.8	1.8	0.1	1.1	0.0	0.6	0.7	0.7
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Q2:	0.2	0.2	0.2	0.4	0.4	0.4	0.3	0.3	0.0	0.3	0.4	0.4
HCM2KQueue:	1.3	1.3	1.3	2.1	2.1	2.1	0.4	1.4	0.0	0.9	1.0	1.0
70th%Factor:	1.20	1.20	1.20	1.19	1.19	1.19	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	1.5	1.5	1.5	2.6	2.6	2.6	0.5	1.6	0.0	1.0	1.2	1.2
85th%Factor:	1.59	1.59	1.59	1.58	1.58	1.58	1.60	1.59	1.60	1.59	1.59	1.59
HCM2k85thQ:	2.0	2.0	2.0	3.4	3.4	3.4	0.7	2.2	0.0	1.4	1.7	1.7
90th%Factor:	1.78	1.78	1.78	1.76	1.76	1.76	1.79	1.77	1.80	1.78	1.78	1.78
HCM2k90thQ:	2.2	2.2	2.2	3.8	3.8	3.8	0.8	2.4	0.0	1.5	1.9	1.9
95th%Factor:	2.06	2.06	2.06	2.03	2.03	2.03	2.09	2.06	2.10	2.07	2.07	2.07
HCM2k95thQ:	2.6	2.6	2.6	4.3	4.3	4.3	0.9	2.8	0.0	1.8	2.2	2.2
98th%Factor:	2.61	2.61	2.61	2.55	2.55	2.55	2.67	2.60	2.70	2.64	2.62	2.62
HCM2k98thQ:	3.3	3.3	3.3	5.5	5.5	5.5	1.2	3.6	0.0	2.3	2.7	2.7

EPAP + GP Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	1.135
Loss Time (sec):	12	Average Delay (sec/veh):	73.7
Optimal Cycle:	180	Level Of Service:	E

Street Name:	West Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:	AM Peak Hour											
Base Vol:	398	273	64	31	445	185	194	735	522	106	584	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	398	273	64	31	445	185	194	735	522	106	584	8
Added Vol:	0	0	133	18	0	0	0	116	0	316	284	44
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	398	273	197	49	445	185	194	851	522	422	868	52
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	433	297	214	53	484	201	211	925	567	459	943	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	433	297	214	53	484	201	211	925	567	459	943	57
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	433	297	214	53	484	201	211	925	567	459	943	57
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.24	0.08	0.14	0.03	0.14	0.13	0.12	0.26	0.36	0.26	0.27	0.04
Crit Moves:	****				****				****	****		
Green/Cycle:	0.22	0.27	0.27	0.06	0.12	0.12	0.17	0.32	0.32	0.23	0.38	0.38
Volume/Cap:	1.14	0.31	0.49	0.49	1.14	1.06	0.71	0.83	1.14	1.14	0.71	0.09
Delay/Veh:	127.5	28.9	31.3	48.9	130	124.5	47.0	37.0	117.3	125.6	28.3	20.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	127.5	28.9	31.3	48.9	130	124.5	47.0	37.0	117.3	125.6	28.3	20.3
LOS by Move:	F	C	C	D	F	F	D	D	F	F	C	C
HCM2k95thQ:	882	165	245	116	657	514	353	689	1189	921	539	45

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	2	0	1	1	0	2	0	1	1	0	2	0	1	1
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	2	1		1	2	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.22	0.27	0.27		0.06	0.12	0.12		0.17	0.32	0.32		0.23	0.38	0.38	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.90	0.92		0.99	1.00	1.00		0.98	0.96	1.00		1.00	0.91	0.81	
Q1:	12.0	3.1	4.6		1.4	7.1	5.6		5.4	12.0	15.8		12.7	10.7	0.8	
UpstreamVC:	0.28	0.28	0.28		0.00	0.00	0.00		0.00	0.00	0.00		0.44	0.44	0.44	
UpstreamAdj:	0.97	0.97	0.97		0.00	0.00	0.00		0.00	0.00	0.00		0.90	0.90	0.90	
EarlyArrAdj:	0.40	0.48	0.43		1.00	1.00	1.00		1.00	1.00	1.00		0.38	0.53	0.48	
Q2:	8.9	0.2	0.4		0.9	7.8	5.7		2.0	3.7	13.7		9.2	1.2	0.1	
HCM2KQueue:	20.9	3.3	5.0		2.3	14.9	11.3		7.5	15.7	29.4		22.0	11.9	0.9	
70th%Factor:	1.16	1.19	1.19		1.19	1.17	1.18		1.18	1.17	1.15		1.16	1.17	1.20	
HCM2k70thQ:	24.2	3.9	6.0		2.7	17.4	13.3		8.8	18.4	33.8		25.4	14.0	1.0	
85th%Factor:	1.45	1.57	1.55		1.58	1.48	1.51		1.53	1.48	1.41		1.44	1.50	1.59	
HCM2k85thQ:	30.3	5.2	7.8		3.6	22.1	17.0		11.4	23.3	41.5		31.7	17.9	1.4	
90th%Factor:	1.54	1.74	1.71		1.76	1.59	1.63		1.68	1.58	1.49		1.53	1.62	1.78	
HCM2k90thQ:	32.2	5.7	8.6		4.0	23.7	18.4		12.5	24.9	43.9		33.7	19.3	1.6	
95th%Factor:	1.69	2.00	1.95		2.03	1.76	1.82		1.90	1.75	1.62		1.68	1.81	2.07	
HCM2k95thQ:	35.3	6.6	9.8		4.6	26.3	20.6		14.1	27.6	47.6		36.8	21.6	1.8	
98th%Factor:	1.90	2.48	2.38		2.54	2.02	2.12		2.26	2.00	1.80		1.88	2.10	2.64	
HCM2k98thQ:	39.7	8.2	11.9		5.8	30.1	23.9		16.9	31.4	53.1		41.4	25.0	2.3	

EPAP + GP Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.793
Loss Time (sec): 12 Average Delay (sec/veh): 31.0
Optimal Cycle: 76 Level Of Service: C

Street Name:	Ham Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:	AM Peak Hour											
Base Vol:	0	0	0	20	0	8	7	772	0	0	632	24
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	20	0	8	7	772	0	0	632	24
Added Vol:	418	4	375	3	3	0	0	77	190	164	228	8
Pass-By:	3	0	4	0	0	0	0	-6	6	5	-5	0
Initial Fut:	421	4	379	23	3	8	7	843	196	169	855	32
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	458	4	412	25	3	9	8	916	213	184	929	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	458	4	412	25	3	9	8	916	213	184	929	35
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	458	4	412	25	3	9	8	916	213	184	929	35
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.83	0.83	0.93	0.87	0.87	0.93	0.90	0.90	0.93	0.93	0.93
Lanes:	1.00	0.01	0.99	1.00	0.27	0.73	1.00	1.62	0.38	1.00	1.93	0.07
Final Sat.:	1769	17	1570	1769	452	1207	1769	2790	649	1769	3393	127
Capacity Analysis Module:												
Vol/Sat:	0.26	0.26	0.26	0.01	0.01	0.01	0.00	0.33	0.33	0.10	0.27	0.27
Crit Moves:	****				****			****		****		
Green/Cycle:	0.33	0.32	0.32	0.02	0.01	0.01	0.01	0.41	0.41	0.13	0.54	0.54
Volume/Cap:	0.79	0.83	0.83	0.83	0.79	0.79	0.51	0.79	0.79	0.79	0.51	0.51
Delay/Veh:	38.1	42.2	42.2	141.7	178	178.4	76.0	28.7	28.7	59.1	15.0	15.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.1	42.2	42.2	141.7	178	178.4	76.0	28.7	28.7	59.1	15.0	15.0
LOS by Move:	D	D	D	F	F	F	E	C	C	E	B	B
HCM2k95thQ:	627	614	614	110	71	71	14	667	667	282	335	335

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	0 1	0	1 0	1 0	0 1	0	1 0	1 0	1 1	0	1 0	1 0	1 1	0	1 0
Lane Group:	L	RT	RT		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	2	2		1	2	2	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.85	0.85		xxxx	0.89	0.89		xxxx	0.97	0.97		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.83	0.83		0.93	0.87	0.87		0.93	0.95	0.95		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	0.95		1.00	0.95	0.95	
Fnl Sat Adj:	0.93	0.83	0.83		0.93	0.87	0.87		0.93	0.90	0.90		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.33	0.32	0.32	0.02	0.01	0.01	0.01	0.41	0.41	0.13	0.54	0.54
ArrivalType:		4			4			4			4	
ProgFactor:	0.95	0.96	0.96	1.00	1.00	1.00	1.00	0.91	0.91	0.99	0.70	0.70
Q1:	11.0	10.2	10.2	0.7	0.3	0.3	0.2	13.2	13.2	4.9	6.3	6.3
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.36	0.36	0.38	0.38	0.38
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.94	0.94	0.94	0.93	0.93	0.93
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.06	0.58	0.58	0.28	0.68	0.68
Q2:	3.2	3.6	3.6	1.5	1.0	1.0	0.1	2.0	2.0	0.9	0.7	0.7
HCM2KQueue:	14.1	13.8	13.8	2.2	1.4	1.4	0.3	15.2	15.2	5.8	7.0	7.0
70th%Factor:	1.17	1.17	1.17	1.19	1.20	1.20	1.20	1.17	1.17	1.19	1.18	1.18
HCM2k70thQ:	16.5	16.2	16.2	2.6	1.6	1.6	0.3	17.7	17.7	6.9	8.3	8.3
85th%Factor:	1.49	1.49	1.49	1.58	1.59	1.59	1.60	1.48	1.48	1.55	1.54	1.54
HCM2k85thQ:	21.0	20.6	20.6	3.4	2.2	2.2	0.4	22.5	22.5	9.0	10.8	10.8
90th%Factor:	1.60	1.60	1.60	1.76	1.77	1.77	1.79	1.59	1.59	1.70	1.68	1.68
HCM2k90thQ:	22.6	22.1	22.1	3.8	2.4	2.4	0.5	24.1	24.1	9.9	11.8	11.8
95th%Factor:	1.77	1.78	1.78	2.03	2.06	2.06	2.09	1.76	1.76	1.93	1.91	1.91
HCM2k95thQ:	25.1	24.6	24.6	4.4	2.8	2.8	0.6	26.7	26.7	11.3	13.4	13.4
98th%Factor:	2.04	2.05	2.05	2.55	2.60	2.60	2.68	2.01	2.01	2.34	2.28	2.28
HCM2k98thQ:	28.8	28.3	28.3	5.5	3.6	3.6	0.7	30.5	30.5	13.6	16.0	16.0

EPAP + GP Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St J

Cycle (sec):	100	Critical Vol./Cap.(X):	0.683
Loss Time (sec):	12	Average Delay (sec/veh):	17.3
Optimal Cycle:	57	Level Of Service:	B

Street Name:	Leach Road/Street J						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1	0	1 0	0	1	0	1	1 0	1 0	1
Volume Module:	AM Peak Hour											
Base Vol:	0	0	0	5	0	6	5	908	0	0	650	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	5	0	6	5	908	0	0	650	6
Added Vol:	236	0	158	0	0	0	0	375	80	54	164	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	236	0	158	5	0	6	5	1283	80	54	814	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	257	0	172	5	0	7	5	1395	87	59	885	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	257	0	172	5	0	7	5	1395	87	59	885	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	257	0	172	5	0	7	5	1395	87	59	885	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	0.93	1.00	0.83	0.93	0.92	0.92	0.93	0.93	0.93
Lanes:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.88	0.12	1.00	1.99	0.01
Final Sat.:	1769	0	1583	1769	0	1583	1769	3300	206	1769	3508	26
Capacity Analysis Module:												
Vol/Sat:	0.15	0.00	0.11	0.00	0.00	0.00	0.00	0.42	0.42	0.03	0.25	0.25
Crit Moves:	****				****			****		****		
Green/Cycle:	0.21	0.00	0.21	0.01	0.00	0.01	0.01	0.62	0.62	0.05	0.66	0.66
Volume/Cap:	0.68	0.00	0.53	0.53	0.00	0.70	0.38	0.68	0.68	0.68	0.38	0.38
Delay/Veh:	41.4	0.0	36.9	91.5	0.0	178.3	65.6	13.5	13.5	67.0	7.9	7.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.4	0.0	36.9	91.5	0.0	178.3	65.6	13.5	13.5	67.0	7.9	7.9
LOS by Move:	D	A	D	F	A	F	E	B	B	E	A	A
HCM2k95thQ:	387	0	248	38	0	48	9	442	442	155	150	150

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        1  0  0  1  0    1  0  0  1  0    1  0  1  1  0    1  0  1  1  0
Lane Group:    L   RT     RT    L   RT     RT    L   RT     RT    L   RT     RT
#LnsInGrps:     1    1     1     1    1     1     1    2     2     1    2     2
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:          8                8                8                8
% Hev Veh:            2                2                2                2
Grade:               0%               0%               0%               0%
Parking/Hr:          No               No               No               No
Bus Stp/Hr:           0                0                0                0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:          0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:           0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 xxxx  1.00  1.00 xxxx  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Hev Veh Adj: 0.98 xxxx  0.98  0.98 xxxx  0.98  0.98 0.98  0.98  0.98 0.98  0.98
Grade Adj:   1.00 xxxx  1.00  1.00 xxxx  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Parking Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx 1.00  1.00  xxxx 1.00  1.00
Bus Stp Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx 1.00  1.00  xxxx 1.00  1.00
Area Adj:    1.00 xxxx  1.00  1.00 xxxx  1.00  1.00 1.00  1.00  1.00 1.00  1.00
RT Adj:      xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx 0.99  0.99  xxxx 1.00  1.00
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.93 1.00  0.83  0.93 1.00  0.83  0.93 0.97  0.97  0.93 0.98  0.98
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 0.95  0.95  1.00 0.95  0.95
Fnl Sat Adj: 0.93 1.00  0.83  0.93 1.00  0.83  0.93 0.92  0.92  0.93 0.93  0.93
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 0.00  1.00  1.00 0.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
```


EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Green/Cycle: 0.21 0.00  0.21  0.01 0.00  0.01  0.01 0.62  0.62  0.05 0.66  0.66
ArrivalType:         4                4                4                4
ProgFactor:  0.96 1.00  0.95  1.00 1.00  1.00  1.00 0.61  0.61  0.99 0.40  0.40
Q1:           6.3  0.0   4.0   0.2  0.0   0.2   0.1  8.7   8.7   1.6  2.4   2.4
UpstreamVC:  0.00 0.00  0.00  0.00 0.00  0.00  0.79 0.79  0.79  0.00 0.00  0.00
UpstreamAdj: 0.00 0.00  0.00  0.00 0.00  0.00  0.51 0.51  0.51  0.00 0.00  0.00
EarlyArrAdj: 1.00 0.00  1.00  1.00 0.00  1.00  0.03 0.41  0.41  1.00 1.00  1.00
Q2:           1.9  0.0   1.0   0.6  0.0   0.7   0.0  0.9   0.9   1.5  0.6   0.6
HCM2KQueue:   8.2  0.0   5.1   0.7  0.0   0.9   0.2  9.5   9.5   3.1  3.0   3.0
------------|---------------||---------------||---------------||---------------|
70th%Factor: 1.18 1.20  1.19  1.20 1.20  1.20  1.20 1.18  1.18  1.19 1.19  1.19
HCM2k70thQ:   9.7  0.0   6.0   0.9  0.0   1.1   0.2 11.2  11.2   3.7  3.6   3.6
------------|---------------||---------------||---------------||---------------|
85th%Factor: 1.53 1.60  1.55  1.59 1.60  1.59  1.60 1.52  1.52  1.57 1.57  1.57
HCM2k85thQ:  12.6  0.0   7.9   1.2  0.0   1.5   0.3 14.5  14.5   4.9  4.7   4.7
------------|---------------||---------------||---------------||---------------|
90th%Factor: 1.66 1.80  1.71  1.79 1.80  1.78  1.80 1.65  1.65  1.74 1.74  1.74
HCM2k90thQ:  13.7  0.0   8.7   1.3  0.0   1.7   0.3 15.7  15.7   5.4  5.2   5.2
------------|---------------||---------------||---------------||---------------|
95th%Factor: 1.88 2.10  1.95  2.08 2.10  2.07  2.09 1.85  1.85  2.01 2.01  2.01
HCM2k95thQ:  15.5  0.0   9.9   1.5  0.0   1.9   0.4 17.7  17.7   6.2  6.0   6.0
------------|---------------||---------------||---------------||---------------|
98th%Factor: 2.23 2.70  2.38  2.65 2.70  2.63  2.69 2.18  2.18  2.49 2.49  2.49
HCM2k98thQ:  18.4  0.0  12.1   1.9  0.0   2.4   0.5 20.8  20.8   7.7  7.5   7.5
```

EPAP + GP Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Cycle (sec):	100	Critical Vol./Cap.(X):	0.457
Loss Time (sec):	12	Average Delay (sec/veh):	10.5
Optimal Cycle:	38	Level Of Service:	B

Street Name:	Micke Grove Road/Holman Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	6	0	5	7	792	0	0	666	7
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	6	0	5	7	792	0	0	666	7
Added Vol:	44	0	0	0	0	41	100	327	106	0	133	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	44	0	0	6	0	46	107	1119	106	0	799	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	48	0	0	7	0	50	116	1216	115	0	868	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	48	0	0	7	0	50	116	1216	115	0	868	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	48	0	0	7	0	50	116	1216	115	0	868	8
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	1.00	0.93	1.00	0.83	0.93	0.93	0.83	1.00	0.93	0.83
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1769	1900	1900	1769	1900	1583	1769	3538	1583	1900	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.00	0.00	0.00	0.00	0.03	0.07	0.34	0.07	0.00	0.25	0.00
Crit Moves:	****					****		****		****		
Green/Cycle:	0.06	0.00	0.00	0.13	0.00	0.07	0.16	0.75	0.75	0.00	0.59	0.59
Volume/Cap:	0.46	0.00	0.00	0.03	0.00	0.46	0.41	0.46	0.10	0.00	0.41	0.01
Delay/Veh:	48.6	0.0	0.0	38.2	0.0	47.8	38.9	4.8	3.4	0.0	11.1	8.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.6	0.0	0.0	38.2	0.0	47.8	38.9	4.8	3.4	0.0	11.1	8.3
LOS by Move:	D	A	A	D	A	D	D	A	A	A	B	A
HCM2k95thQ:	103	0	0	9	0	106	173	43	6	0	217	3

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	1 0	1		1 0	1 0	1		1 0	2 0	1		1 0	2 0	1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	1	1		1	1	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		xxxx	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	xxxxx		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
Hev Veh Adj:	0.98	xxxx	xxxxx		0.98	xxxx	0.98		0.98	0.98	0.98		xxxx	0.98	0.98	
Grade Adj:	1.00	xxxx	xxxxx		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
Parking Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	xxxx	xxxxx		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
RT Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		xxxx	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	1.00	1.00		0.93	1.00	0.83		0.93	0.98	0.83		1.00	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	1.00	1.00		0.93	1.00	0.83		0.93	0.93	0.83		1.00	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	0.00		1.00	0.00	1.00		1.00	1.00	1.00		0.00	1.00	1.00	

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.06	0.00	0.00	0.13	0.00	0.07	0.16	0.75	0.75	0.00	0.59	0.59
ArrivalType:	4				4				4				4			
ProgFactor:	0.99	1.00	1.00	0.95	1.00	0.99	0.96	0.00	0.00	1.00	0.58	0.52
Q1:	1.3	0.0	0.0	0.2	0.0	1.3	2.8	0.0	0.0	0.0	4.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.55
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82	0.82
EarlyArrAdj:	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.64	0.58
Q2:	0.8	0.0	0.0	0.0	0.0	0.8	0.7	0.8	0.1	0.0	0.4	0.0
HCM2KQueue:	2.0	0.0	0.0	0.2	0.0	2.1	3.5	0.8	0.1	0.0	4.4	0.0
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.19	1.19	1.20	1.20	1.20	1.19	1.20
HCM2k70thQ:	2.4	0.0	0.0	0.2	0.0	2.5	4.1	1.0	0.1	0.0	5.2	0.1
85th%Factor:	1.58	1.60	1.60	1.60	1.60	1.58	1.57	1.59	1.60	1.60	1.56	1.60
HCM2k85thQ:	3.2	0.0	0.0	0.3	0.0	3.3	5.4	1.3	0.2	0.0	6.9	0.1
90th%Factor:	1.76	1.80	1.80	1.80	1.80	1.76	1.74	1.78	1.80	1.80	1.72	1.80
HCM2k90thQ:	3.6	0.0	0.0	0.3	0.0	3.7	6.0	1.5	0.2	0.0	7.6	0.1
95th%Factor:	2.04	2.10	2.10	2.09	2.10	2.03	1.99	2.07	2.10	2.10	1.97	2.10
HCM2k95thQ:	4.1	0.0	0.0	0.4	0.0	4.2	6.9	1.7	0.2	0.0	8.7	0.1
98th%Factor:	2.56	2.70	2.70	2.69	2.70	2.55	2.47	2.64	2.69	2.70	2.41	2.70
HCM2k98thQ:	5.2	0.0	0.0	0.5	0.0	5.3	8.6	2.2	0.3	0.0	10.6	0.1

EPAP + GP Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Average Delay (sec/veh): 9.1 Worst Case Level Of Service: B[14.6]

Street Name:	SR 99 West Frontage Rd								SR 99 SB Ramps (Eight Mile Rd)							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	1 0	0	1	0	0 0	0	0	0	0 0	1	0	0	0 1
Volume Module:AM Peak Hour																
Base Vol:	0	103	1	350	106	0	0	0	0	14	0	287				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	103	1	350	106	0	0	0	0	14	0	287				
Added Vol:	0	0	0	256	0	0	0	0	0	0	0	12				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	103	1	606	106	0	0	0	0	14	0	299				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92				
PHF Volume:	0	112	1	659	115	0	0	0	0	15	0	325				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	0	112	1	659	115	0	0	0	0	15	0	325				
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2				
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3				
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx	113	xxxx	xxxxx	xxxx	xxxx	xxxxx	1545	xxxx	112				
Potent Cap.:	xxxx	xxxx	xxxxx	1476	xxxx	xxxxx	xxxx	xxxx	xxxxx	126	xxxx	940				
Move Cap.:	xxxx	xxxx	xxxxx	1476	xxxx	xxxxx	xxxx	xxxx	xxxxx	54	xxxx	940				
Volume/Cap:	xxxx	xxxx	xxxx	0.45	xxxx	xxxx	xxxx	xxxx	xxxx	0.28	xxxx	0.35				
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx	59.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	24.4	xxxx	38.8				
Control Del:	xxxxx	xxxx	xxxxx	9.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	95.7	xxxx	10.8				
LOS by Move:	*	*	*	A	*	*	*	*	*	F	*	B				
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT				
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	2.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	xxxxx	xxxx	xxxxx	9.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*				
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			14.6						
ApproachLOS:	*			*			*			B						

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		

Time Period: 0.25 hour
Upstream Signals:

Link Index:	#183	
Dist(miles):	0.250	
Speed (mph):	1.00	
SignalIndex:	#12	
Cycle Time:	100 secs	
InitVolume:	149	20
Saturation:	1769	871
ArrivalType:	4	4
G/C:	0.13	0.04

*** Computation 1: Time for Queue to Clear at Each Upstream Intersection

P:	0.173	0.047
gq1:	6.96	2.19
gq2:	0.88	0.07
gq:	7.84	2.26

*** Computation 2: Time Intersection Blocked Because of Upstream Platoons

alpha:	0.550	
beta:	0.645	
ta (secs):	900.000	
F:	0.003	
f:	1.000	1.000
vcmax:	43	6
vcg:	45	6
vcmin:	1000	1000
tp:	0.0	0.0
p:	0.000	

*** Computation 3: Platoon Event Periods
pdom/psubo: 0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period

InitCnflVol:	0	xxxxx	xxxxx	113	xxxxx	xxxxx	1708	1546	115	1545	1545	112
AdjCnflVol:	0	xxxxx	xxxxx	113	xxxxx	xxxxx	1708	1546	115	1545	1545	112
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	0	xxxxx	xxxxx	113	xxxxx	xxxxx	1708	1546	115	1545	1545	112

*** Computation 5: Capacity for Subject Movement During Unblocked Period

InitPotCap:	1623	xxxxx	xxxxx	1476	xxxxx	xxxxx	72	114	937	126	115	940
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
Potent Cap.:	1623	xxxxx	xxxxx	1476	xxxxx	xxxxx	72	114	937	126	115	940

EPAP + GP Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Average Delay (sec/veh): 12.5 Worst Case Level Of Service: F[53.4]

Street Name:	SR 99 East Frontage Rd								SR 99 NB Ramps (Eight Mile Rd)							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Volume Module: AM Peak Hour																				
Base Vol:	152	197	0	0	301	214	96	0	50	0	0	0								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	152	197	0	0	301	214	96	0	50	0	0	0								
Added Vol:	0	12	0	0	28	28	104	0	0	0	0	0								
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0								
Initial Fut:	152	209	0	0	329	242	200	0	50	0	0	0								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92								
PHF Volume:	165	227	0	0	358	263	217	0	54	0	0	0								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	165	227	0	0	358	263	217	0	54	0	0	0								
Critical Gap Module:																				
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx								
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	621	xxxx	xxxxx	xxxx	xxxx	xxxxx	915	xxxx	358	xxxx	xxxx	xxxxx								
Potent Cap.:	960	xxxx	xxxxx	xxxx	xxxx	xxxxx	303	xxxx	687	xxxx	xxxx	xxxxx								
Move Cap.:	960	xxxx	xxxxx	xxxx	xxxx	xxxxx	259	xxxx	687	xxxx	xxxx	xxxxx								
Volume/Cap:	0.17	xxxx	xxxx	xxxx	xxxx	xxxx	0.84	xxxx	0.08	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	15.5	xxxx	xxxxx	xxxx	xxxx	xxxxx	170	xxxx	6.4	xxxx	xxxx	xxxxx								
Control Del:	9.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	64.0	xxxx	10.7	xxxxx	xxxx	xxxxx								
LOS by Move:	A	*	*	*	*	*	F	*	B	*	*	*								
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT								
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	0.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	9.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx			xxxxxx			53.4			xxxxxx										
ApproachLOS:	*			*			F			*										

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #15 SR99 E Front & NB Ramps 8 Mile

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
-----------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:       #222             #188
Dist(miles):      0.250            0.250
Speed (mph):       1.00             1.00
SignalIndex:      #23              #13
Cycle Time:         100 secs         100 secs
InitVolume:     0    84         50    19
Saturation:     0   993       1769  1597
ArrivalType:    0     4          4     4
G/C:         0.00  0.36       0.04  0.07
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:          0.000 0.475      0.057 0.088
gq1:         0.00  4.45       2.67  1.09
gq2:         0.00  0.57       0.10  0.02
gq:          0.00  5.01       2.77  1.10
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:            0.550            0.550
beta:             0.645            0.645
ta (secs):       900.000           900.000
F:                0.003            0.003
f:          1.000 1.000      1.000 1.000
vcmax:          0    15         15     5
vcg:            0    24         15     6
vcmin:       1000  1000       1000  1000
tp:           0.0   0.0        0.0   0.0
p:                0.000            0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol: 621 xxxxx xxxxx    0 xxxxx xxxxx  915   915   358 1074  1178   227
AdjCnflVol:  621 xxxxx xxxxx    0 xxxxx xxxxx  915   915   358 1074  1178   227
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol: 621 xxxxx xxxxx    0 xxxxx xxxxx  915   915   358 1074  1178   227
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap:  960 xxxxx xxxxx 1623 xxxxx xxxxx  303   273   687  198   191   812
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.: 960 xxxxx xxxxx 1623 xxxxx xxxxx  303   273   687  198   191   812
```


EPAP + GP Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #16 West & L.C.MarkTaylor/Marlette

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

```
Street Name:            West Lane               Lt.Col.Mark Taylor/Marlette Rd
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
-----------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  2  0  1    0  0  3  0  0    0  0  0  0  0    0  0  0  0  1
-----------|---------------||---------------||---------------||---------------|
Volume Module:AMPeak Hour
Base Vol:       0  735     0     0 1073     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  735     0     0 1073     0     0    0     0     0    0     0
Added Vol:      0  141    59     0  491     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0  876    59     0 1564     0     0    0     0     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0  952    64     0 1700     0     0    0     0     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0  952    64     0 1700     0     0    0     0     0    0     0
-----------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.9
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3
-----------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   476
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   535
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   535
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.00
-----------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         *                *                *                *
```

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #16 West & L.C.MarkTaylor/Marlette

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------|----------------|----------------|----------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                        #105
Dist(miles):                       0.250
Speed (mph):                        1.00
SignalIndex:                       #56
Cycle Time:                          100 secs
InitVolume:                    175  1389
Saturation:                   1769  5083
ArrivalType:                     4     4
G/C:                           0.24  0.67
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                            0.322 0.891
gq1:                           6.70  2.99
gq2:                           1.02  1.71
gq:                            7.72  4.70
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                             0.500
beta:                              0.667
ta (secs):                        900.000
F:                                 0.003
f:                            1.000 1.000
vcmax:                           45    79
vcg:                             55   410
vcmin:                         2000  2000
tp:                             0.0   0.0
p:                                 0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 2176  2716   567 1519  2652   476
AdjCnflVol:    0 xxxxx xxxxx    0 xxxxx xxxxx 2176  2716   567 1519  2652   476
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 2176  2716   567 1519  2652   476
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1622 xxxxx xxxxx 1622 xxxxx xxxxx   40    21   467  110    23   535
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1622 xxxxx xxxxx 1622 xxxxx xxxxx   40    21   467  110    23   535
```


EPAP + GP Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

```
Cycle (sec):          100                Critical Vol./Cap.(X):          0.346
Loss Time (sec):       12                Average Delay (sec/veh):         30.2
Optimal Cycle:         33                Level Of Service:                   C
Street Name:            Holman Road                Lt. Col. Mark Taylor Street
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------||---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        1  0  2  0  1    1  0  3  0  1    1  0  1  0  1    1  0  0  1  0
------------||---------------||---------------||---------------||---------------|
Volume Module:AM Peak Hour
Base Vol:     133   98    87    11  174     7     9  135   126   149  104     4
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  133   98    87    11  174     7     9  135   126   149  104     4
Added Vol:      0   15     0     0   35     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  133  113    87    11  209     7     9  135   126   149  104     4
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:   145  123    95    12  227     8    10  147   137   162  113     4
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  145  123    95    12  227     8    10  147   137   162  113     4
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  145  123    95    12  227     8    10  147   137   162  113     4
------------||---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.93 0.93  0.83  0.93 0.89  0.83  0.93 0.98  0.83  0.93 0.97  0.97
Lanes:       1.00 2.00  1.00  1.00 3.00  1.00  1.00 1.00  1.00  1.00 0.96  0.04
Final Sat.:  1769 3538  1583  1769 5083  1583  1769 1862  1583  1769 1782    69
------------||---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.08 0.03  0.06  0.01 0.04  0.00  0.01 0.08  0.09  0.09 0.06  0.06
Crit Moves:  ****                ****                     ****  ****
Green/Cycle: 0.24 0.33  0.33  0.04 0.13  0.13  0.04 0.25  0.25  0.26 0.47  0.47
Volume/Cap:  0.35 0.11  0.18  0.18 0.35  0.04  0.13 0.32  0.35  0.35 0.13  0.13
Delay/Veh:   32.3 23.4  24.2  48.0 40.0  38.2  47.1 30.9  31.3  30.2 14.9  14.9
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  32.3 23.4  24.2  48.0 40.0  38.2  47.1 30.9  31.3  30.2 14.9  14.9
LOS by Move:    C    C     C     D    D     D     D    C     C     C    B     B
HCM2k95thQ:   166   58    88    28  129    11    15  163   155   190   75    75
```

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 2	0 1		1	0 3	0 1		1	0 1	0 1		1	0 0	1 0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	2	1		1	3	1		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.89	0.83		0.93	0.98	0.83		0.93	0.97	0.97	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.24	0.33	0.33		0.04	0.13	0.13		0.04	0.25	0.25		0.26	0.47	0.47	
ArrivalType:		4				4				4				4		
ProgFactor:	0.92	0.85	0.86		0.99	0.97	0.95		0.99	0.92	0.92		0.91	0.72	0.72	
Q1:	3.1	1.1	1.6		0.3	2.0	0.2		0.3	3.0	2.9		3.3	1.3	1.3	
UpstreamVC:	0.19	0.19	0.19		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.99	0.99	0.99		0.00	0.00	0.00		1.00	1.00	1.00		0.00	0.00	0.00	
EarlyArrAdj:	0.43	0.54	0.49		1.00	1.00	1.00		0.15	0.46	0.42		1.00	1.00	1.00	
Q2:	0.2	0.1	0.1		0.2	0.5	0.0		0.0	0.2	0.2		0.5	0.2	0.2	
HCM2KQueue:	3.3	1.1	1.7		0.5	2.6	0.2		0.3	3.2	3.1		3.8	1.5	1.5	
70th%Factor:	1.19	1.20	1.20		1.20	1.19	1.20		1.20	1.19	1.19		1.19	1.20	1.20	
HCM2k70thQ:	4.0	1.3	2.1		0.6	3.0	0.3		0.3	3.9	3.7		4.6	1.8	1.8	
85th%Factor:	1.57	1.59	1.58		1.59	1.58	1.60		1.60	1.57	1.57		1.56	1.59	1.59	
HCM2k85thQ:	5.2	1.8	2.7		0.9	4.0	0.3		0.5	5.1	4.9		6.0	2.3	2.3	
90th%Factor:	1.74	1.78	1.77		1.79	1.75	1.80		1.79	1.74	1.74		1.73	1.77	1.77	
HCM2k90thQ:	5.8	2.0	3.0		1.0	4.5	0.4		0.5	5.7	5.4		6.6	2.6	2.6	
95th%Factor:	2.00	2.06	2.05		2.08	2.02	2.09		2.09	2.00	2.01		1.98	2.05	2.05	
HCM2k95thQ:	6.6	2.3	3.5		1.1	5.2	0.4		0.6	6.5	6.2		7.6	3.0	3.0	
98th%Factor:	2.47	2.62	2.58		2.66	2.52	2.68		2.68	2.48	2.49		2.44	2.59	2.59	
HCM2k98thQ:	8.2	2.9	4.4		1.4	6.4	0.6		0.8	8.1	7.7		9.4	3.8	3.8	

EPAP + GP Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.608
Loss Time (sec):	12	Average Delay (sec/veh):	27.2
Optimal Cycle:	49	Level Of Service:	C

Street Name:	West Lane						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	3	0	1	2	0	3	0	1
Volume Module:AM Peak Hour																				
Base Vol:	80	450	242	354	656	32	67	90	67	243	62	212
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	80	450	242	354	656	32	67	90	67	243	62	212
Added Vol:	0	168	0	36	412	43	17	0	0	0	0	14
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	80	618	242	390	1068	75	84	90	67	243	62	226
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	87	672	263	424	1161	82	91	98	73	264	67	246
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	672	263	424	1161	82	91	98	73	264	67	246
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	87	672	263	424	1161	82	91	98	73	264	67	246
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	5083	1583	3432	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.19	0.17	0.12	0.33	0.05	0.03	0.02	0.05	0.08	0.01	0.16
Crit Moves:	****				****		****					****
Green/Cycle:	0.04	0.35	0.35	0.23	0.54	0.54	0.04	0.11	0.11	0.19	0.26	0.26
Volume/Cap:	0.61	0.54	0.47	0.54	0.61	0.10	0.61	0.17	0.41	0.41	0.05	0.61
Delay/Veh:	54.5	26.4	25.8	34.7	16.4	11.2	54.0	40.4	42.9	36.2	28.1	35.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.5	26.4	25.8	34.7	16.4	11.2	54.0	40.4	42.9	36.2	28.1	35.5
LOS by Move:	D	C	C	C	B	B	D	D	D	D	C	D
HCM2k95thQ:	121	382	283	297	460	41	124	56	126	191	27	339

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L - T - R						L - T - R						L - T - R						L - T - R					
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	3	0	1	2	0	3	0	1				
Lane Group:	L		T		R	L		T		R	L		T		R	L		T		R				
#LnsInGrps:	2		2		1	2		2		1	2		3		1	2		3		1				
HCM Ops Adjusted Lane Utilization Module:																								
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12				
CrsswalkWid:	8					8					8					8								
% Hev Veh:	2					2					2					2								
Grade:	0%					0%					0%					0%								
Parking/Hr:	No					No					No					No								
Bus Stp/Hr:	0					0					0					0								
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:	0					0					0					0								
ExclusiveRT:	Include					Include					Include					Include								
% RT Prtct:	0					0					0					0								
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx						
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98						
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00						
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00						
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85												
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx												
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83												
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
MLF Sat Adj:	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00												
Fnl Sat Adj:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83												
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.04	0.35	0.35	0.23	0.54	0.54	0.04	0.11	0.11	0.19	0.26	0.26
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.89	0.88	0.95	0.73	0.62	0.99	0.96	0.97	0.95	0.89	0.94
Q1:	1.2	7.0	5.0	5.0	8.5	0.7	1.3	0.9	1.8	3.2	0.5	5.7
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	1.2	1.1	0.9	1.1	1.5	0.1	1.2	0.2	0.7	0.7	0.1	1.4
HCM2KQueue:	2.4	8.1	5.9	6.2	10.0	0.8	2.5	1.1	2.5	3.8	0.5	7.1
70th%Factor:	1.19	1.18	1.19	1.19	1.18	1.20	1.19	1.20	1.19	1.19	1.20	1.18
HCM2k70thQ:	2.9	9.6	6.9	7.3	11.8	0.9	2.9	1.3	3.0	4.6	0.6	8.4
85th%Factor:	1.58	1.53	1.55	1.54	1.52	1.59	1.58	1.59	1.58	1.56	1.59	1.54
HCM2k85thQ:	3.8	12.4	9.1	9.5	15.1	1.3	3.9	1.7	3.9	6.0	0.8	10.9
90th%Factor:	1.75	1.67	1.70	1.69	1.64	1.78	1.75	1.78	1.75	1.73	1.79	1.68
HCM2k90thQ:	4.2	13.5	9.9	10.4	16.4	1.4	4.3	1.9	4.4	6.6	0.9	12.0
95th%Factor:	2.03	1.88	1.93	1.93	1.84	2.07	2.02	2.07	2.02	1.98	2.08	1.90
HCM2k95thQ:	4.8	15.3	11.3	11.9	18.4	1.6	5.0	2.2	5.1	7.6	1.1	13.6
98th%Factor:	2.53	2.24	2.34	2.32	2.16	2.64	2.53	2.62	2.53	2.44	2.66	2.28
HCM2k98thQ:	6.0	18.1	13.7	14.3	21.6	2.1	6.2	2.8	6.3	9.4	1.4	16.2

EPAP + GP Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.583
Loss Time (sec): 12 Average Delay (sec/veh): 35.1
Optimal Cycle: 47 Level Of Service: D

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3 0 1	1	0	3 0 1	1	0	3 0 1	1	0	3 0 1
Volume Module: AM Peak Hour												
Base Vol:	236	112	116	319	215	181	143	585	171	182	500	191
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	236	112	116	319	215	181	143	585	171	182	500	191
Added Vol:	0	12	0	0	28	6	3	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	236	124	116	319	243	187	146	585	171	182	500	191
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	257	135	126	347	264	203	159	636	186	198	543	208
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	257	135	126	347	264	203	159	636	186	198	543	208
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	257	135	126	347	264	203	159	636	186	198	543	208
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.15	0.03	0.08	0.20	0.05	0.13	0.09	0.13	0.12	0.11	0.11	0.13
Crit Moves:			****	****				****		****		
Green/Cycle:	0.25	0.14	0.14	0.34	0.22	0.22	0.17	0.21	0.21	0.19	0.24	0.24
Volume/Cap:	0.58	0.19	0.58	0.58	0.23	0.58	0.54	0.58	0.55	0.58	0.44	0.54
Delay/Veh:	34.7	38.4	44.5	28.9	32.0	37.1	40.4	36.0	36.8	39.3	32.5	34.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.7	38.4	44.5	28.9	32.0	37.1	40.4	36.0	36.8	39.3	32.5	34.7
LOS by Move:	C	D	D	C	C	D	D	D	D	D	C	C
HCM2k95thQ:	307	63	177	372	110	257	245	327	267	245	222	241

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	3	0	1	1	0	3	0	1	1	0	3	0	1	1
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	3	1		1	3	1		1	3	1		1	3	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.25	0.14	0.14		0.34	0.22	0.22		0.17	0.21	0.21		0.19	0.24	0.24	
ArrivalType:		4				4				4				4		
ProgFactor:	0.94	0.96	0.98		0.90	0.92	0.95		0.97	0.95	0.95		0.96	0.93	0.94	
Q1:		5.9	1.2		3.2	7.2	2.0		4.8	3.9	5.5		4.4	4.8	4.4	4.7
UpstreamVC:	0.49	0.49	0.49		0.35	0.35	0.35		0.00	0.00	0.00		0.86	0.86	0.86	
UpstreamAdj:	0.86	0.86	0.86		0.95	0.95	0.95		0.00	0.00	0.00		0.39	0.39	0.39	
EarlyArrAdj:	0.39	0.28	0.25		0.51	0.41	0.37		1.00	1.00	1.00		0.15	0.18	0.16	
Q2:		0.5	0.1		0.3	0.7	0.1		0.5	1.1	1.3		1.1	0.2	0.1	0.2
HCM2KQueue:		6.4	1.2		3.5	7.9	2.2		5.3	5.0	6.9		5.5	5.0	4.5	4.9
70th%Factor:	1.19	1.20	1.19		1.18	1.19	1.19		1.19	1.18	1.19		1.19	1.19	1.19	
HCM2k70thQ:		7.6	1.5		4.2	9.3	2.6		6.3	6.0	8.1		6.5	6.0	5.4	5.9
85th%Factor:	1.54	1.59	1.57		1.53	1.58	1.55		1.55	1.54	1.55		1.55	1.56	1.55	
HCM2k85thQ:		9.9	2.0		5.6	12.1	3.4		8.2	7.8	10.5		8.5	7.8	7.0	7.7
90th%Factor:	1.69	1.78	1.73		1.67	1.76	1.71		1.71	1.68	1.70		1.71	1.72	1.71	
HCM2k90thQ:		10.8	2.2		6.2	13.2	3.8		9.0	8.6	11.5		9.4	8.6	7.8	8.4
95th%Factor:	1.92	2.06	1.99		1.89	2.03	1.95		1.95	1.91	1.94		1.95	1.97	1.96	
HCM2k95thQ:		12.3	2.5		7.1	14.9	4.4		10.3	9.8	13.1		10.7	9.8	8.9	9.6
98th%Factor:	2.31	2.61	2.46		2.25	2.55	2.37		2.38	2.29	2.35		2.38	2.41	2.38	
HCM2k98thQ:		14.8	3.2		8.7	17.7	5.5		12.5	11.9	15.7		13.0	11.9	10.9	11.8

EPAP + GP Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 SR99 W Front & SB Ramps Morada

Average Delay (sec/veh): 42.7 Worst Case Level Of Service: F[93.5]

Street Name:	SR 99 West Frontage Rd						SR 99 SB Ramps (Morada Lane)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0	1 0	0 1	0	0 0	0 0	0	0 0	1 0	0	0 1
Volume Module:AM Peak Hour												
Base Vol:	0	62	788	31	50	0	0	0	0	282	0	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	62	788	31	50	0	0	0	0	282	0	19
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	62	788	31	50	0	0	0	0	282	0	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	67	857	34	54	0	0	0	0	307	0	21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	67	857	34	54	0	0	0	0	307	0	21
Critical Gap Module:												
Critical Gp:xxxxx	6.5	6.2		7.1	6.5	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:xxxxx	4.0	3.3		3.5	4.0	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol: xxxx	634	0		647	613	xxxxx	xxxx	xxxx	xxxxx	0	xxxx	xxxxx
Potent Cap.: xxxx	397	1085		384	408	xxxxx	xxxx	xxxx	xxxxx	1623	xxxx	xxxxx
Move Cap.: xxxx	322	1085		58	331	xxxxx	xxxx	xxxx	xxxxx	1623	xxxx	xxxxx
Volume/Cap: xxxx	0.21	0.79		0.58	0.16	xxxx	xxxx	xxxx	xxxx	0.19	xxxx	xxxx
Level Of Service Module:												
2Way95thQ: xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	17.4	xxxx	xxxxx
Control Del:xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx
LOS by Move: *	*	*		*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.: xxxx	xxxx	925		119	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:xxxxx	xxxx	18.5		4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:xxxxx	xxxx	50.5		93.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS: *	*	F		F	*	*	*	*	*	*	*	*
ApproachDel:	50.5			93.5			xxxxxx			xxxxxx		
ApproachLOS:	F			F			*			*		

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #21 SR99 E Front & NB Ramps Morada

Average Delay (sec/veh): 15.7 Worst Case Level Of Service: F[69.2]

Street Name:	SR 99 East Frontage Rd						SR 99 NB Ramps (Morada Lane)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1	0	0 0	0 0	0	1 0	1 0	0	0 1	0 0	0	0 0
Volume Module:AM Peak Hour												
Base Vol:	230	451	0	0	511	2	95	0	214	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	230	451	0	0	511	2	95	0	214	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	230	451	0	0	511	2	95	0	214	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	250	490	0	0	555	2	103	0	233	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	250	490	0	0	555	2	103	0	233	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	558	xxxx	xxxxx	xxxx	xxxx	xxxxx	1547	xxxx	557	xxxx	xxxx	xxxxx
Potent Cap.:	1013	xxxx	xxxxx	xxxx	xxxx	xxxxx	126	xxxx	530	xxxx	xxxx	xxxxx
Move Cap.:	1013	xxxx	xxxxx	xxxx	xxxx	xxxxx	98	xxxx	530	xxxx	xxxx	xxxxx
Volume/Cap:	0.25	xxxx	xxxx	xxxx	xxxx	xxxx	1.05	xxxx	0.44	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	24.3	xxxx	xxxxx	xxxx	xxxx	xxxxx	164	xxxx	55.3	xxxx	xxxx	xxxxx
Control Del:	9.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	186.7	xxxx	17.0	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	F	*	C	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	1.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	9.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			69.2			xxxxxx		
ApproachLOS:	*			*			F			*		

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 West Ln & West Ln Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.741
Loss Time (sec):	9	Average Delay (sec/veh):	20.7
Optimal Cycle:	57	Level Of Service:	C

Street Name:	West Lane						West Lane Frontage Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	0 1	0	0 1	1 0	0	1 0
Volume Module:AM Peak Hour												
Base Vol:	111	611	52	47	900	69	117	14	116	177	17	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	111	611	52	47	900	69	117	14	116	177	17	4
Added Vol:	0	168	0	0	412	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	111	779	52	47	1312	69	117	14	116	177	17	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	121	847	57	51	1426	75	127	15	126	192	18	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	121	847	57	51	1426	75	127	15	126	192	18	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	121	847	57	51	1426	75	127	15	126	192	18	4
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.92	0.92	0.93	0.92	0.92	0.71	0.71	0.83	0.57	0.95	0.95
Lanes:	1.00	1.87	0.13	1.00	1.90	0.10	0.89	0.11	1.00	1.00	0.81	0.19
Final Sat.:	1769	3287	219	1769	3338	176	1199	143	1583	1078	1465	345
Capacity Analysis Module:												
Vol/Sat:	0.07	0.26	0.26	0.03	0.43	0.43	0.11	0.11	0.08	0.18	0.01	0.01
Crit Moves:	****				****					****		
Green/Cycle:	0.09	0.60	0.60	0.07	0.58	0.58	0.24	0.24	0.24	0.24	0.24	0.24
Volume/Cap:	0.74	0.43	0.43	0.43	0.74	0.74	0.44	0.44	0.33	0.74	0.05	0.05
Delay/Veh:	60.7	10.8	10.8	47.2	17.1	17.1	33.2	33.2	31.8	45.9	29.2	29.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.7	10.8	10.8	47.2	17.1	17.1	33.2	33.2	31.8	45.9	29.2	29.2
LOS by Move:	E	B	B	D	B	B	C	C	C	D	C	C
HCM2k95thQ:	189	221	221	104	638	638	193	193	158	334	26	26

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	1	0	1	1	0		1	0	1	1	0		0	1	0	0	1		1	0	0	1	0	
Lane Group:	L		RT		RT		L		RT		RT		LT		LT		R		L		RT		RT	
#LnsInGrps:	1		2		2		1		2		2		1		1		1		1		1		1	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:			8						8						8						8			
% Hev Veh:			2						2						2						2			
Grade:			0%						0%						0%						0%			
Parking/Hr:			No						No						No						No			
Bus Stp/Hr:			0						0						0						0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0						0						0						0			
ExclusiveRT:			Include						Include						Include						Include			
% RT Prtct:			0						0						0						0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx		xxxx			1	xxxx		xxxx			5		5	xxxx			2	xxxx		xxxx		
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
Hev Veh Adj:	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98
Grade Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
Parking Adj:	xxxx	1.00		1.00		xxxx	1.00	1.00		xxxx		1.00	xxxx	xxxx		1.00		xxxx	1.00	1.00		xxxx		1.00
Bus Stp Adj:	xxxx	1.00		1.00		xxxx	1.00	1.00		xxxx		1.00	xxxx	xxxx		1.00		xxxx	1.00	1.00		xxxx		1.00
Area Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
RT Adj:	xxxx	0.99		0.99		xxxx	0.99	0.99		xxxx		0.99	xxxx	xxxx		0.85		xxxx	0.97	0.97				
LT Adj:	0.95	xxxx		xxxxx		0.95	xxxx	xxxxx					0.72	0.72		xxxxx		0.58	xxxx	xxxxx				
PedBike Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
HCM Sat Adj:	0.93	0.97		0.97		0.93	0.97	0.97		0.71		0.71	0.83	0.57		0.95		0.95						
Usr Sat Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
MLF Sat Adj:	1.00	0.95		0.95		1.00	0.95	0.95		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
Fnl Sat Adj:	0.93	0.92		0.92		0.93	0.92	0.92		0.71		0.71	0.83	0.57		0.95		0.95						
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North	South	East	West
Cycle Length, C:	xxxxxx	xxxxxx	100	100
Actual Green Time Per Lane Group, G:	xxxxxx	xxxxxx	23.10	23.10
Effective Green Time Per Lane Group, g:	xxxxxx	xxxxxx	24.10	24.10
Opposing Effective Green Time, go:	xxxxxx	xxxxxx	24.10	24.10
Number Of Opposing Lanes, No:	xxxxxx	xxxxxx	1	1
Number Of Lanes In Lane Group, N:	xxxxxx	xxxxxx	1	1
Adjusted Left-Turn Flow Rate, Vlt:	xxxxxx	xxxxxx	127	192
Proportion of Left Turns in Lane Group, Plt:	xxxxxx	xxxxxx	0.89	1.00
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	xxxxxx	xxxxxx	3.53	5.34
Adjusted Opposing Flow Rate, Vo:	xxxxxx	xxxxxx	23	142
Opposing Flow Per Lane Per Cycle, Volc:	xxxxxx	xxxxxx	0.64	3.94
Opposing Platoon Ratio, Rpo:	xxxxxx	xxxxxx	1.33	1.33
Lost Time Per Phase, tl:	xxxxxx	xxxxxx	3.00	3.00
Eff grn until arrival of left-turn car, gf:	xxxxxx	xxxxxx	0.00	0.00
Opposing Queue Ratio, qro:	xxxxxx	xxxxxx	0.68	0.68
Eff grn blocked by opposing queue, gq:	xxxxxx	xxxxxx	0.00	2.98
Eff grn while left turns filter thru, gu:	xxxxxx	xxxxxx	24.10	21.12
Max opposing cars arriving during gq-gf, n:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	0.86	0.79
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	0.89	1.00
Through-car Equivalents, el1:	xxxxxx	xxxxxx	1.43	1.51
Single Lane Through-car Equivalents, el2:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	xxxxxx	xxxxxx	0.16	0.17
Single Lane Left Turn Adjustment Factor, fm:	xxxxxx	xxxxxx	0.72	0.58
Left Turn Adjustment Factor, flt:	xxxxxx	xxxxxx	0.72	0.58

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.09	0.60	0.60	0.07	0.58	0.58	0.24	0.24	0.24	0.24	0.24	0.24
ArrivalType:	4			4			4			4		
ProgFactor:	0.99	0.56	0.56	0.99	0.73	0.73	0.93	0.93	0.92	0.96	0.90	0.90
Q1:	3.2	4.0	4.0	1.3	11.8	11.8	3.1	3.1	2.7	4.8	0.4	0.4
UpstreamVC:	0.45	0.45	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.89	0.89	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.22	0.70	0.70	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.6	0.5	0.5	0.7	2.7	2.7	0.8	0.8	0.5	2.3	0.1	0.1
HCM2KQueue:	3.8	4.5	4.5	2.0	14.4	14.4	3.9	3.9	3.1	7.0	0.5	0.5
70th%Factor:	1.19	1.19	1.19	1.20	1.17	1.17	1.19	1.19	1.19	1.18	1.20	1.20
HCM2k70thQ:	4.5	5.4	5.4	2.4	16.9	16.9	4.6	4.6	3.8	8.3	0.6	0.6
85th%Factor:	1.56	1.56	1.56	1.58	1.49	1.49	1.56	1.56	1.57	1.54	1.60	1.60
HCM2k85thQ:	5.9	7.0	7.0	3.2	21.4	21.4	6.1	6.1	4.9	10.8	0.8	0.8
90th%Factor:	1.73	1.72	1.72	1.76	1.59	1.59	1.73	1.73	1.74	1.68	1.79	1.79
HCM2k90thQ:	6.6	7.7	7.7	3.6	23.0	23.0	6.7	6.7	5.5	11.8	0.9	0.9
95th%Factor:	1.99	1.97	1.97	2.04	1.77	1.77	1.98	1.98	2.00	1.91	2.08	2.08
HCM2k95thQ:	7.6	8.9	8.9	4.1	25.5	25.5	7.7	7.7	6.3	13.4	1.0	1.0
98th%Factor:	2.45	2.41	2.41	2.56	2.03	2.03	2.44	2.44	2.49	2.28	2.66	2.66
HCM2k98thQ:	9.3	10.8	10.8	5.2	29.3	29.3	9.5	9.5	7.8	16.0	1.3	1.3

EPAP + GP Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 West Lane & Knickerbocker Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.573
Loss Time (sec):	12	Average Delay (sec/veh):	22.5
Optimal Cycle:	46	Level Of Service:	C

Street Name:	West Lane						Knickerbocker Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:AM Peak Hour												
Base Vol:	24	681	78	124	995	48	70	56	39	192	88	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	24	681	78	124	995	48	70	56	39	192	88	30
Added Vol:	0	168	0	0	412	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	24	849	78	124	1407	48	70	56	39	192	88	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	26	923	85	135	1529	52	76	61	42	209	96	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	923	85	135	1529	52	76	61	42	209	96	33
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	26	923	85	135	1529	52	76	61	42	209	96	33
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.89	0.93	0.92	0.92	0.93	0.94	0.94
Lanes:	1.00	3.00	1.00	1.00	2.90	0.10	1.00	0.59	0.41	1.00	0.75	0.25
Final Sat.:	1769	5083	1583	1769	4891	167	1769	1030	717	1769	1336	455
Capacity Analysis Module:												
Vol/Sat:	0.01	0.18	0.05	0.08	0.31	0.31	0.04	0.06	0.06	0.12	0.07	0.07
Crit Moves:	****				****			****		****		
Green/Cycle:	0.03	0.40	0.40	0.17	0.55	0.55	0.12	0.10	0.10	0.21	0.19	0.19
Volume/Cap:	0.57	0.45	0.13	0.45	0.57	0.57	0.37	0.57	0.57	0.57	0.37	0.37
Delay/Veh:	64.7	22.0	19.0	38.5	15.3	15.3	42.0	47.2	47.2	38.0	35.8	35.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.7	22.0	19.0	38.5	15.3	15.3	42.0	47.2	47.2	38.0	35.8	35.8
LOS by Move:	E	C	B	D	B	B	D	D	D	D	D	D
HCM2k95thQ:	44	299	65	170	382	382	125	192	192	301	175	175

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	3 0	1	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0	1 0	0 1	0	
Lane Group:	L	T	R	L	RT	RT	L	RT	RT	L	RT	RT				
#LnsInGrps:	1	3	1	1	3	3	1	1	1	1	1	1				
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12				
CrsswalkWid:	8				8			8			8					
% Hev Veh:	2				2			2			2					
Grade:	0%				0%			0%			0%					
Parking/Hr:	No				No			No			No					
Bus Stp/Hr:	0				0			0			0					
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0			0			0					
ExclusiveRT:	Include				Include			Include			Include					
% RT Prtct:	0				0			0			0					
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx				
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98				
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Parking Adj:	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00				
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00				
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
RT Adj:	xxxx	xxxx	0.85	xxxx	1.00	1.00	xxxx	0.94	0.94	xxxx	0.96	0.96				
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx				
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.98	0.93	0.92	0.92	0.93	0.94	0.94				
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Sat Adj:	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00				
Fnl Sat Adj:	0.93	0.89	0.83	0.93	0.89	0.89	0.93	0.92	0.92	0.93	0.94	0.94				
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.03	0.40	0.40	0.17	0.55	0.55	0.12	0.10	0.10	0.21	0.19	0.19
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.84	0.79	0.96	0.71	0.71	0.97	0.98	0.98	0.96	0.94	0.94
Q1:	0.7	5.7	1.2	3.2	7.5	7.5	1.9	2.7	2.7	5.0	2.9	2.9
UpstreamVC:	0.34	0.34	0.34	0.74	0.74	0.74	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.95	0.95	0.95	0.59	0.59	0.59	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.11	0.59	0.53	0.21	0.44	0.44	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.1	0.5	0.1	0.2	0.6	0.6	0.6	1.2	1.2	1.3	0.6	0.6
HCM2KQueue:	0.9	6.2	1.3	3.4	8.1	8.1	2.5	3.9	3.9	6.3	3.5	3.5
70th%Factor:	1.20	1.19	1.20	1.19	1.18	1.18	1.19	1.19	1.19	1.19	1.19	1.19
HCM2k70thQ:	1.0	7.4	1.5	4.1	9.6	9.6	2.9	4.6	4.6	7.4	4.2	4.2
85th%Factor:	1.59	1.54	1.59	1.57	1.53	1.53	1.58	1.56	1.56	1.54	1.57	1.57
HCM2k85thQ:	1.4	9.6	2.0	5.3	12.4	12.4	3.9	6.1	6.1	9.7	5.5	5.5
90th%Factor:	1.78	1.69	1.78	1.74	1.67	1.67	1.75	1.73	1.73	1.69	1.74	1.74
HCM2k90thQ:	1.5	10.5	2.2	5.9	13.5	13.5	4.3	6.7	6.7	10.6	6.1	6.1
95th%Factor:	2.07	1.92	2.06	2.00	1.88	1.88	2.02	1.98	1.98	1.92	1.99	1.99
HCM2k95thQ:	1.8	12.0	2.6	6.8	15.3	15.3	5.0	7.7	7.7	12.0	7.0	7.0
98th%Factor:	2.64	2.32	2.61	2.47	2.24	2.24	2.53	2.44	2.44	2.32	2.46	2.46
HCM2k98thQ:	2.2	14.4	3.3	8.4	18.1	18.1	6.2	9.5	9.5	14.5	8.6	8.6

EPAP + GP Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.629
Loss Time (sec): 12 Average Delay (sec/veh): 32.5
Optimal Cycle: 51 Level Of Service: C

Street Name:	West Lane						Hammer Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4 0 1	2	0	4 0 1	2	0	4 0 1	2	0	4 0 1
Volume Module:	AM Peak Hour											
Base Vol:	217	458	119	168	917	196	311	843	219	383	654	59
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	217	458	119	168	917	196	311	843	219	383	654	59
Added Vol:	0	168	0	0	412	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	217	626	119	168	1329	196	311	843	219	383	654	59
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	236	680	129	183	1445	213	338	916	238	416	711	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	236	680	129	183	1445	213	338	916	238	416	711	64
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	236	680	129	183	1445	213	338	916	238	416	711	64
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.07	0.10	0.08	0.05	0.21	0.13	0.10	0.14	0.15	0.12	0.10	0.04
Crit Moves:	****				****				****	****		
Green/Cycle:	0.11	0.29	0.29	0.16	0.34	0.34	0.21	0.24	0.24	0.19	0.22	0.22
Volume/Cap:	0.63	0.34	0.28	0.34	0.63	0.40	0.47	0.57	0.63	0.63	0.47	0.18
Delay/Veh:	46.0	27.9	27.6	38.1	28.3	25.7	35.2	33.9	37.4	39.0	34.0	31.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.0	27.9	27.6	38.1	28.3	25.7	35.2	33.9	37.4	39.0	34.0	31.7
LOS by Move:	D	C	C	D	C	C	D	C	D	D	C	C
HCM2k95thQ:	228	206	143	120	427	208	239	336	342	285	235	72

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	4	0 1	2	0	4	0 1	2	0	4	0 1	2	0	4	0 1
Lane Group:	L	T		R	L	T		R	L	T		R	L	T		R
#LnsInGrps:	2	4		1	2	4		1	2	4		1	2	4		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.11	0.29	0.29		0.16	0.34	0.34		0.21	0.24	0.24		0.19	0.22	0.22	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.90	0.89		0.96	0.91	0.87		0.95	0.94	0.95		0.96	0.94	0.92	
Q1:	3.2	3.7	2.5		2.2	8.4	4.0		4.0	5.8	5.6		5.3	4.4	1.3	
UpstreamVC:	0.00	0.00	0.00		0.57	0.57	0.57		0.00	0.00	0.00		0.29	0.29	0.29	
UpstreamAdj:	0.00	0.00	0.00		0.80	0.80	0.80		0.00	0.00	0.00		0.97	0.97	0.97	
EarlyArrAdj:	1.00	1.00	1.00		0.27	0.44	0.40		1.00	1.00	1.00		0.37	0.42	0.38	
Q2:	1.5	0.5	0.4		0.1	0.7	0.3		0.9	1.2	1.6		0.6	0.4	0.1	
HCM2KQueue:	4.6	4.2	2.8		2.4	9.2	4.2		4.9	7.0	7.2		5.9	4.8	1.4	
70th%Factor:	1.19	1.19	1.19		1.19	1.18	1.19		1.19	1.18	1.18		1.19	1.19	1.20	
HCM2k70thQ:	5.5	5.0	3.4		2.8	10.8	5.0		5.8	8.3	8.5		7.0	5.7	1.7	
85th%Factor:	1.56	1.56	1.57		1.58	1.52	1.56		1.55	1.54	1.54		1.55	1.56	1.59	
HCM2k85thQ:	7.2	6.5	4.5		3.7	14.0	6.6		7.6	10.8	11.0		9.1	7.5	2.2	
90th%Factor:	1.72	1.72	1.75		1.76	1.65	1.72		1.71	1.68	1.68		1.70	1.71	1.77	
HCM2k90thQ:	8.0	7.2	5.0		4.2	15.2	7.3		8.4	11.9	12.1		10.0	8.2	2.5	
95th%Factor:	1.96	1.98	2.01		2.03	1.86	1.97		1.96	1.91	1.90		1.93	1.96	2.05	
HCM2k95thQ:	9.1	8.2	5.7		4.8	17.1	8.3		9.5	13.4	13.7		11.4	9.4	2.9	
98th%Factor:	2.40	2.43	2.50		2.53	2.19	2.42		2.39	2.28	2.28		2.34	2.39	2.60	
HCM2k98thQ:	11.1	10.1	7.1		6.0	20.1	10.2		11.6	16.1	16.4		13.8	11.5	3.7	

EPAP + GP Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.883
Loss Time (sec):	12	Average Delay (sec/veh):	38.3
Optimal Cycle:	102	Level Of Service:	D

Street Name:	Hammer Lane						Holman Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2 1 0	2	0	3 0 1	2	0	3 1 0	2	0	3 1 0
Volume Module:	AM Peak Hour											
Base Vol:	466	393	241	97	657	92	129	777	412	645	696	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	466	393	241	97	657	92	129	777	412	645	696	29
Added Vol:	0	12	0	0	28	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	466	405	241	97	685	92	129	777	412	645	696	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	507	440	262	105	745	100	140	845	448	701	757	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	507	440	262	105	745	100	140	845	448	701	757	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	507	440	262	105	745	100	140	845	448	701	757	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.84	0.84	0.90	0.89	0.83	0.90	0.85	0.85	0.90	0.89	0.89
Lanes:	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.84	0.16
Final Sat.:	3432	3199	1600	3432	5083	1583	3432	4819	1606	3432	6468	269
Capacity Analysis Module:												
Vol/Sat:	0.15	0.14	0.16	0.03	0.15	0.06	0.04	0.18	0.28	0.20	0.12	0.12
Crit Moves:	****				****				****	****		
Green/Cycle:	0.17	0.28	0.28	0.05	0.17	0.17	0.14	0.32	0.32	0.23	0.41	0.41
Volume/Cap:	0.88	0.49	0.58	0.58	0.88	0.38	0.29	0.56	0.88	0.88	0.29	0.29
Delay/Veh:	55.7	30.3	31.7	51.1	51.6	38.1	38.7	28.7	39.2	48.6	20.1	20.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	55.7	30.3	31.7	51.1	51.6	38.1	38.7	28.7	39.2	48.6	20.1	20.1
LOS by Move:	E	C	C	D	D	D	D	C	D	D	C	C
HCM2k95thQ:	501	293	366	87	429	129	93	334	661	618	183	183

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	1 0	2	0	3	0 1	2	0	3	1 0	2	0	3	1 0
Lane Group:	L		RT	RT	L		T	R	L		RT	RT	L		RT	RT
#LnsInGrps:	2		3	3	2		3	1	2		4	4	2		4	4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.94	0.94		xxxx	xxxx	0.85		xxxx	0.95	0.95		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.93	0.93		0.93	0.98	0.83		0.93	0.93	0.93		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	0.91		0.97	0.91	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.84	0.84		0.90	0.89	0.83		0.90	0.85	0.85		0.90	0.89	0.89	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + GP Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.17	0.28	0.28	0.05	0.17	0.17	0.14	0.32	0.32	0.23	0.41	0.41
ArrivalType:	4			4			4			4		
ProgFactor:	0.99	0.92	0.93	0.99	0.99	0.96	0.96	0.91	0.97	0.98	0.81	0.81
Q1:	7.0	5.2	6.4	1.5	7.3	2.4	1.7	6.5	12.6	9.5	3.3	3.3
UpstreamVC:	0.00	0.00	0.00	0.23	0.23	0.23	0.57	0.57	0.57	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.98	0.98	0.98	0.80	0.80	0.80	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	0.17	0.36	0.32	0.26	0.42	0.42	1.00	1.00	1.00
Q2:	3.9	0.9	1.3	0.2	1.9	0.2	0.1	0.5	2.4	4.4	0.4	0.4
HCM2KQueue:	11.0	6.1	7.7	1.7	9.2	2.6	1.8	7.0	15.0	13.9	3.7	3.7
70th%Factor:	1.18	1.19	1.18	1.20	1.18	1.19	1.20	1.18	1.17	1.17	1.19	1.19
HCM2k70thQ:	12.9	7.2	9.2	2.0	10.9	3.1	2.2	8.3	17.6	16.3	4.4	4.4
85th%Factor:	1.51	1.54	1.53	1.58	1.52	1.58	1.58	1.54	1.48	1.49	1.57	1.57
HCM2k85thQ:	16.5	9.4	11.9	2.7	14.0	4.0	2.9	10.8	22.3	20.7	5.8	5.8
90th%Factor:	1.63	1.70	1.67	1.77	1.65	1.75	1.77	1.68	1.59	1.60	1.73	1.73
HCM2k90thQ:	17.9	10.3	12.9	3.0	15.2	4.5	3.2	11.8	23.9	22.2	6.4	6.4
95th%Factor:	1.83	1.93	1.89	2.05	1.86	2.02	2.04	1.91	1.76	1.78	1.99	1.99
HCM2k95thQ:	20.0	11.7	14.6	3.5	17.2	5.2	3.7	13.4	26.4	24.7	7.3	7.3
98th%Factor:	2.13	2.33	2.25	2.58	2.19	2.52	2.57	2.28	2.01	2.04	2.45	2.45
HCM2k98thQ:	23.4	14.2	17.4	4.4	20.2	6.5	4.7	16.0	30.3	28.4	9.0	9.0

EPAP + GP Alt AM Pk Hr

Future Queue Length Report (feet)

Node	Intersection	Northbound L	-- T	-- R	Southbound L	-- T	-- R	Eastbound L	-- T	-- R	Westbound L	-- T	-- R
#3	[HCM2k95thQ]:	930	39	99	19	640	640	377	666	348	166	1158	1158
#4	[HCM2k95thQ]:	508	128	193	31	479	479	168	765	765	405	495	5
#5	[HCM2k95thQ]:	105	357	958	264	619	118	191	1157	22	935	496	64
#6	[HCM2k95thQ]:	30	411	411	342	282	282	363	363	363	390	390	390
#7	[HCM2k95thQ]:	65	65	65	109	109	109	23	70	0	45	54	54
#8	[HCM2k95thQ]:	882	165	245	116	657	514	353	689	1189	921	539	45
#9	[HCM2k95thQ]:	627	614	614	110	71	71	14	667	667	282	335	335
#10	[HCM2k95thQ]:	387	0	248	38	0	48	9	442	442	155	150	150
#11	[HCM2k95thQ]:	103	0	0	9	0	106	173	43	6	0	217	3
#14	[2Way95thQ]:	xxxx	xxxx	xxxx	59.1	59.1	xxxx	xxxx	xxxx	xxxx	24.4	xxxx	38.8
#15	[2Way95thQ]:	15.5	15.5	xxxx	xxxx	xxxx	xxxx	170	xxxx	6.4	xxxx	xxxx	xxxx
#16	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#17	[HCM2k95thQ]:	166	58	88	28	129	11	15	163	155	190	75	75
#18	[HCM2k95thQ]:	121	382	283	297	460	41	124	56	126	191	27	339
#19	[HCM2k95thQ]:	307	63	177	372	110	257	245	327	267	245	222	241
#20	[2Way95thQ]:	xxxx	464	464	104	104	xxxx	xxxx	xxxx	xxxx	17.4	xxxx	xxxx
#21	[2Way95thQ]:	24.3	24.3	xxxx	xxxx	xxxx	xxxx	164	xxxx	55.3	xxxx	xxxx	xxxx
#24	[HCM2k95thQ]:	189	221	221	104	638	638	193	193	158	334	26	26
#25	[HCM2k95thQ]:	44	299	65	170	382	382	125	192	192	301	175	175
#26	[HCM2k95thQ]:	228	206	143	120	427	208	239	336	342	285	235	72
#27	[HCM2k95thQ]:	501	293	366	87	429	129	93	334	661	618	183	183

EPAP + GP Alt AM Pk Hr Mitigated

Scenario Report

Scenario: EPAP + GP Alt AM

Command: EPAP + GP Alt AM
Volume: EPAP AM
Geometry: EPAP GP Alt
Impact Fee: Default Impact Fee
Trip Generation: AM Pk Hr
Trip Distribution: EPAP AM
Paths: EPAP GP Alt
Routes: Default Route
Configuration: Default Configuration

EPAP + GP Alt AM Pk Hr Mitigated

Trip Generation Report

Forecast for AM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	0.00	ElemSchStudent	0.25	0.20	0	0	0	0.0
1	Village West	0.00	Tra Vigne SFDU	0.18	0.53	0	0	0	0.0
1	Village West	1646.00	GP Alt SFDU	0.18	0.53	296	872	1168	58.4
1	Village West	130.68	GP Alt Com KSF	0.60	0.36	78	47	125	6.2
1	Village West	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
1	Village West	232.00	GP Alt MFDU	0.10	0.41	23	95	118	5.9
1	Village West	0.00	Tra V Internal	-6.00	-6.00	0	0	0	0.0
1	Village West	1.00	GP Alt Interna	-7.00	-7.00	-7	-7	-14	-0.7
1	Village West	1.00	GP Alt Pass-By	-11.00	-7.00	-11	-7	-18	-0.9
	Zone 1 Subtotal					379	1000	1379	68.9
2	Village East	0.00	Tra Vigne SFDU	0.18	0.53	0	0	0	0.0
2	Village East	774.00	GP Alt SFDU	0.18	0.53	139	410	549	27.4
2	Village East	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
	Zone 2 Subtotal					139	410	549	27.4
4	Industrial	406.94	Indust KSF	0.15	0.03	61	12	73	3.6
	Zone 4 Subtotal					61	12	73	3.6
TOTAL						579	1422	2001	100.0

EPAP + GP Alt AM Pk Hr Mitigated

Trip Distribution Report

Percent Of Trips EPAP AM

Zone	To Gates 1	2	5	6	8	9	10	11	14	15	16
1	2.0	1.0	2.0	4.0	7.0	2.0	3.0	1.0	1.0	3.0	8.0
2	2.0	1.0	2.0	4.0	7.0	2.0	3.0	1.0	1.0	3.0	8.0
4	2.0	1.0	2.0	4.0	7.0	2.0	3.0	1.0	1.0	3.0	8.0

Zone	To Gates 17	18	19	20	22	23	24	25	26
1	1.0	3.0	29.0	5.0	2.0	18.0	4.0	2.0	2.0
2	1.0	3.0	29.0	5.0	2.0	18.0	4.0	2.0	2.0
4	1.0	3.0	29.0	5.0	2.0	18.0	4.0	2.0	2.0

EPAP + GP Alt AM Pk Hr Mitigated

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	D	36.1	0.886	D	38.3	0.916	+ 2.181 D/V
# 5 Eight Mile & Lower Sacto Rd	C	33.5	0.815	D	40.1	0.920	+ 6.574 D/V
# 8 Eight Mile Rd & West Ln	C	33.5	0.780	D	52.2	1.001	+18.655 D/V
# 9 Eight Mile Road & Ham Lane	A	3.1	0.283	C	28.6	0.714	+25.582 D/V

EPAP + GP Alt AM Pk Hr Mitigated

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]

EPAP + GP Alt AM Pk Hr Mitigated

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.916
Loss Time (sec):	12	Average Delay (sec/veh):	38.3
Optimal Cycle:	118	Level Of Service:	D

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	1 0	1	1 0	2 0	1	1 0	1 1	0
Volume Module:	AM Peak Hour											
Base Vol:	836	46	103	5	26	229	169	983	326	80	1148	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	836	46	103	5	26	229	169	983	326	80	1148	14
Added Vol:	0	0	6	0	0	0	0	35	0	14	85	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	836	46	109	5	26	229	169	1018	326	94	1233	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	909	50	118	5	28	249	184	1107	354	102	1340	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	909	50	118	5	28	249	184	1107	354	102	1340	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	909	50	118	5	28	249	184	1107	354	102	1340	15
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.98	0.83	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.98	0.02
Final Sat.:	3432	1862	1583	1769	1862	1583	1769	3538	1583	1769	3491	40
Capacity Analysis Module:												
Vol/Sat:	0.26	0.03	0.07	0.00	0.02	0.16	0.10	0.31	0.22	0.06	0.38	0.38
Crit Moves:	****					****	****				****	
Green/Cycle:	0.29	0.33	0.33	0.01	0.06	0.17	0.11	0.45	0.45	0.08	0.42	0.42
Volume/Cap:	0.92	0.08	0.22	0.22	0.26	0.92	0.92	0.70	0.50	0.70	0.92	0.92
Delay/Veh:	47.1	22.9	24.2	53.5	46.3	73.9	84.6	23.4	20.1	58.2	36.6	36.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.1	22.9	24.2	53.5	46.3	73.9	84.6	23.4	20.1	58.2	36.6	36.6
LOS by Move:	D	C	C	D	D	E	F	C	C	E	D	D
HCM2k95thQ:	766	46	117	21	56	505	314	558	295	156	903	903

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt AM Pk Hr Mitigated

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 1	0 1		1	0 1	0 1		1	0 2	0 1		1	0 1	1 0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	2	1	1		1	1	1		1	2	1		1	2	2	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	0.95	
Fnl Sat Adj:	0.90	0.98	0.83		0.93	0.98	0.83		0.93	0.93	0.83		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + GP Alt AM Pk Hr Mitigated

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.29	0.33	0.33		0.01	0.06	0.17		0.11	0.45	0.45		0.08	0.42	0.42	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.84	0.86		1.00	0.98	0.99		1.00	0.86	0.81		0.99	0.96	0.96	
Q1:	12.4	0.8	2.0		0.1	0.7	6.7		5.0	11.1	5.6		2.7	17.9	17.9	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.49	0.49	0.49		0.62	0.62	0.62	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.87	0.87	0.87		0.74	0.74	0.74	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.24	0.57	0.52		0.17	0.47	0.47	
Q2:	5.4	0.1	0.3		0.3	0.3	4.3		1.5	1.3	0.5		0.4	3.6	3.6	
HCM2KQueue:	17.8	0.9	2.3		0.4	1.1	11.1		6.6	12.4	6.1		3.1	21.5	21.5	
70th%Factor:	1.16	1.20	1.19		1.20	1.20	1.18		1.18	1.17	1.19		1.19	1.16	1.16	
HCM2k70thQ:	20.7	1.1	2.8		0.5	1.3	13.0		7.8	14.5	7.3		3.7	24.9	24.9	
85th%Factor:	1.47	1.59	1.58		1.60	1.59	1.51		1.54	1.50	1.54		1.57	1.45	1.45	
HCM2k85thQ:	26.1	1.4	3.7		0.7	1.7	16.7		10.1	18.6	9.5		4.9	31.1	31.1	
90th%Factor:	1.56	1.78	1.76		1.79	1.78	1.63		1.69	1.62	1.69		1.74	1.54	1.54	
HCM2k90thQ:	27.8	1.6	4.1		0.7	1.9	18.1		11.1	20.0	10.4		5.4	33.0	33.0	
95th%Factor:	1.72	2.07	2.03		2.09	2.07	1.82		1.92	1.80	1.93		2.00	1.68	1.68	
HCM2k95thQ:	30.6	1.8	4.7		0.9	2.2	20.2		12.6	22.3	11.8		6.2	36.1	36.1	
98th%Factor:	1.95	2.63	2.54		2.67	2.62	2.13		2.30	2.09	2.32		2.49	1.89	1.89	
HCM2k98thQ:	34.8	2.3	5.9		1.1	2.8	23.6		15.1	25.8	14.3		7.7	40.6	40.6	

EPAP + GP Alt AM Pk Hr Mitigated

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.920
Loss Time (sec):	12	Average Delay (sec/veh):	40.1
Optimal Cycle:	120	Level Of Service:	D

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1	0	1	1	0	1	0	1	1	0
Volume Module:AM Peak Hour												
Base Vol:	44	268	393	57	412	103	86	1020	21	311	814	61
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	268	393	57	412	103	86	1020	21	311	814	61
Added Vol:	0	0	46	12	0	0	0	58	0	114	142	28
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	44	268	439	69	412	103	86	1078	21	425	956	89
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	48	291	477	75	448	112	93	1172	23	462	1039	97
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	48	291	477	75	448	112	93	1172	23	462	1039	97
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	48	291	477	75	448	112	93	1172	23	462	1039	97
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.98	0.83	0.93	0.93	0.83	0.90	0.93	0.83
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3432	1862	1583	1769	1862	1583	1769	3538	1583	3432	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.01	0.16	0.30	0.04	0.24	0.07	0.05	0.33	0.01	0.13	0.29	0.06
Crit Moves:			****	****				****		****		
Green/Cycle:	0.02	0.33	0.33	0.05	0.35	0.35	0.08	0.36	0.36	0.15	0.43	0.43
Volume/Cap:	0.68	0.48	0.92	0.92	0.68	0.20	0.68	0.92	0.04	0.92	0.68	0.14
Delay/Veh:	72.5	27.4	54.1	120.6	30.4	22.7	58.4	41.5	20.8	64.4	24.4	17.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	72.5	27.4	54.1	120.6	30.4	22.7	58.4	41.5	20.8	64.4	24.4	17.5
LOS by Move:	E	C	D	F	C	C	E	D	C	E	C	B
HCM2k95thQ:	95	318	776	233	529	105	206	922	20	494	571	73

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt AM Pk Hr Mitigated

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	1	0 1	1	0	1	0 1	1	0	2	0 1	2	0	2	0 1
Lane Group:	L		T	R	L		T	R	L		T	R	L		T	R
#LnsInGrps:	2		1	1	1		1	1	1		2	1	2		2	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		0.97	0.95	1.00	
Fnl Sat Adj:	0.90	0.98	0.83		0.93	0.98	0.83		0.93	0.93	0.83		0.90	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + GP Alt AM Pk Hr Mitigated

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.02	0.33	0.33	0.05	0.35	0.35	0.08	0.36	0.36	0.15	0.43	0.43
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.89	0.98	1.00	0.91	0.84	0.99	0.97	0.82	0.99	0.87	0.77
Q1:	0.7	5.8	12.5	2.1	9.7	1.8	2.5	16.0	0.3	6.5	10.7	1.3
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	1.2	0.9	5.6	2.7	2.0	0.2	1.7	6.1	0.0	4.3	2.0	0.2
HCM2KQueue:	1.9	6.7	18.0	4.8	11.7	2.1	4.2	22.0	0.4	10.8	12.7	1.4
70th%Factor:	1.20	1.18	1.16	1.19	1.17	1.19	1.19	1.16	1.20	1.18	1.17	1.20
HCM2k70thQ:	2.2	7.9	21.0	5.7	13.7	2.5	5.0	25.5	0.5	12.7	14.9	1.7
85th%Factor:	1.58	1.54	1.46	1.56	1.50	1.58	1.56	1.44	1.60	1.51	1.50	1.59
HCM2k85thQ:	2.9	10.2	26.4	7.4	17.5	3.3	6.5	31.8	0.6	16.3	19.0	2.2
90th%Factor:	1.76	1.69	1.56	1.72	1.62	1.76	1.72	1.53	1.79	1.63	1.61	1.77
HCM2k90thQ:	3.3	11.2	28.2	8.2	18.9	3.6	7.2	33.7	0.7	17.6	20.5	2.5
95th%Factor:	2.04	1.91	1.72	1.96	1.81	2.03	1.98	1.68	2.09	1.83	1.80	2.05
HCM2k95thQ:	3.8	12.7	31.0	9.3	21.2	4.2	8.2	36.9	0.8	19.8	22.9	2.9
98th%Factor:	2.57	2.30	1.95	2.39	2.11	2.55	2.43	1.88	2.67	2.14	2.08	2.60
HCM2k98thQ:	4.8	15.3	35.2	11.4	24.6	5.3	10.1	41.5	1.0	23.1	26.4	3.7

EPAP + GP Alt AM Pk Hr Mitigated

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	1.001
Loss Time (sec):	12	Average Delay (sec/veh):	52.2
Optimal Cycle:	180	Level Of Service:	D

Street Name:	West Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:	AM Peak Hour											
Base Vol:	398	273	64	31	445	185	194	735	522	106	584	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	398	273	64	31	445	185	194	735	522	106	584	8
Added Vol:	0	0	133	18	0	0	0	116	0	316	284	44
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	398	273	197	49	445	185	194	851	522	422	868	52
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	433	297	214	53	484	201	211	925	567	459	943	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	433	297	214	53	484	201	211	925	567	459	943	57
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	433	297	214	53	484	201	211	925	567	459	943	57
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3432	3538	1583	1769	3538	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.13	0.08	0.14	0.03	0.14	0.13	0.12	0.26	0.36	0.26	0.27	0.04
Crit Moves:	****				****				****	****		
Green/Cycle:	0.13	0.21	0.21	0.05	0.14	0.14	0.19	0.36	0.36	0.26	0.43	0.43
Volume/Cap:	1.00	0.39	0.63	0.63	1.00	0.93	0.63	0.73	1.00	1.00	0.63	0.08
Delay/Veh:	87.2	34.0	39.4	61.0	84.3	84.7	40.8	30.1	70.0	79.2	23.2	17.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	87.2	34.0	39.4	61.0	84.3	84.7	40.8	30.1	70.0	79.2	23.2	17.1
LOS by Move:	F	C	D	E	F	F	D	C	E	E	C	B
HCM2k95thQ:	421	186	280	137	571	447	321	593	1002	761	468	39

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt AM Pk Hr Mitigated

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0	1	1	0	2	0	1	1	0	2	0	1	1
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	2	1		1	2	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.90	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + GP Alt AM Pk Hr Mitigated

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.13	0.21	0.21		0.05	0.14	0.14		0.19	0.36	0.36		0.26	0.43	0.43	
ArrivalType:	4				4				4				4			
ProgFactor:	1.00	0.94	0.96		0.99	1.00	1.00		0.97	0.92	1.00		1.00	0.86	0.76	
Q1:	6.2	3.5	5.2		1.4	7.1	5.5		5.2	10.8	15.8		12.7	9.2	0.7	
UpstreamVC:	0.28	0.28	0.28		0.00	0.00	0.00		0.00	0.00	0.00		0.44	0.44	0.44	
UpstreamAdj:	0.97	0.97	0.97		0.00	0.00	0.00		0.00	0.00	0.00		0.90	0.90	0.90	
EarlyArrAdj:	0.29	0.41	0.37		1.00	1.00	1.00		1.00	1.00	1.00		0.41	0.58	0.52	
Q2:	2.9	0.3	0.6		1.3	5.7	4.2		1.5	2.4	8.4		4.9	0.9	0.0	
HCM2KQueue:	9.0	3.7	5.8		2.7	12.7	9.7		6.7	13.3	24.2		17.6	10.2	0.8	
70th%Factor:	1.18	1.19	1.19		1.19	1.17	1.18		1.18	1.17	1.15		1.16	1.18	1.20	
HCM2k70thQ:	10.7	4.5	6.9		3.3	14.9	11.4		8.0	15.6	27.9		20.5	12.0	0.9	
85th%Factor:	1.52	1.56	1.55		1.57	1.50	1.52		1.54	1.49	1.43		1.47	1.51	1.59	
HCM2k85thQ:	13.8	5.9	9.0		4.3	19.0	14.7		10.3	19.8	34.7		25.9	15.4	1.2	
90th%Factor:	1.65	1.73	1.70		1.75	1.61	1.65		1.69	1.61	1.52		1.57	1.64	1.79	
HCM2k90thQ:	15.0	6.5	9.8		4.8	20.5	15.9		11.3	21.3	36.8		27.6	16.7	1.4	
95th%Factor:	1.86	1.99	1.93		2.02	1.80	1.85		1.91	1.79	1.66		1.73	1.84	2.08	
HCM2k95thQ:	16.9	7.4	11.2		5.5	22.9	17.9		12.8	23.7	40.1		30.4	18.7	1.6	
98th%Factor:	2.20	2.45	2.34		2.51	2.08	2.18		2.30	2.06	1.86		1.96	2.16	2.64	
HCM2k98thQ:	19.9	9.2	13.6		6.8	26.4	21.0		15.4	27.4	44.9		34.5	21.9	2.0	

EPAP + GP Alt AM Pk Hr Mitigated

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.714
Loss Time (sec):	12	Average Delay (sec/veh):	28.6
Optimal Cycle:	61	Level Of Service:	C

Street Name:	Ham Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	20	0	8	7	772	0	0	632	24
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	20	0	8	7	772	0	0	632	24
Added Vol:	418	4	375	3	3	0	0	77	190	164	228	8
Pass-By:	3	0	4	0	0	0	0	-6	6	5	-5	0
Initial Fut:	421	4	379	23	3	8	7	843	196	169	855	32
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	458	4	412	25	3	9	8	916	213	184	929	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	458	4	412	25	3	9	8	916	213	184	929	35
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	458	4	412	25	3	9	8	916	213	184	929	35
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.83	0.83	0.93	0.87	0.87	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	1.00	0.01	0.99	1.00	0.27	0.73	1.00	2.00	1.00	1.00	1.93	0.07
Final Sat.:	1769	17	1570	1769	452	1207	1769	3538	1583	1769	3393	127
Capacity Analysis Module:												
Vol/Sat:	0.26	0.26	0.26	0.01	0.01	0.01	0.00	0.26	0.13	0.10	0.27	0.27
Crit Moves:	****				****			****		****		
Green/Cycle:	0.36	0.35	0.35	0.02	0.01	0.01	0.01	0.36	0.36	0.15	0.50	0.50
Volume/Cap:	0.71	0.74	0.74	0.74	0.71	0.71	0.55	0.71	0.37	0.71	0.55	0.55
Delay/Veh:	31.3	33.7	33.7	109.7	138	138.4	88.5	29.4	23.9	49.9	17.6	17.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.3	33.7	33.7	109.7	138	138.4	88.5	29.4	23.9	49.9	17.6	17.6
LOS by Move:	C	C	C	F	F	F	F	C	C	D	B	B
HCM2k95thQ:	555	540	540	102	66	66	14	537	199	266	385	385

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt AM Pk Hr Mitigated

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	1 0	1	0	0	1 0	1	0	2	0 1	1	0	1	1 0
Lane Group:	L		RT	RT	L		RT	RT	L		T	R	L		RT	RT
#LnsInGrps:	1		1	1	1		1	1	1		2	1	1		2	2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1		xxxx	xxxx	1		xxxx	xxxx	1		xxxx	xxxx	1		xxxx	xxxx
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.85	0.85		xxxx	0.89	0.89		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.83	0.83		0.93	0.87	0.87		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	0.95	
Fnl Sat Adj:	0.93	0.83	0.83		0.93	0.87	0.87		0.93	0.93	0.83		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + GP Alt AM Pk Hr Mitigated

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.36	0.35	0.35	0.02	0.01	0.01	0.01	0.36	0.36	0.15	0.50	0.50
ArrivalType:		4			4			4			4	
ProgFactor:	0.92	0.93	0.93	1.00	1.00	1.00	1.00	0.92	0.85	0.98	0.76	0.76
Q1:	10.0	9.4	9.4	0.7	0.3	0.3	0.2	10.6	3.7	4.8	7.4	7.4
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.36	0.36	0.38	0.38	0.38
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.94	0.94	0.94	0.93	0.93	0.93
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.05	0.55	0.50	0.30	0.65	0.65
Q2:	2.3	2.5	2.5	1.3	1.0	1.0	0.1	1.3	0.3	0.7	0.8	0.8
HCM2KQueue:	12.3	11.9	11.9	2.0	1.3	1.3	0.3	11.9	4.0	5.5	8.2	8.2
70th%Factor:	1.17	1.17	1.17	1.20	1.20	1.20	1.20	1.17	1.19	1.19	1.18	1.18
HCM2k70thQ:	14.5	14.0	14.0	2.4	1.5	1.5	0.3	13.9	4.8	6.5	9.7	9.7
85th%Factor:	1.50	1.50	1.50	1.58	1.59	1.59	1.60	1.50	1.56	1.55	1.53	1.53
HCM2k85thQ:	18.5	17.9	17.9	3.2	2.0	2.0	0.4	17.8	6.3	8.5	12.5	12.5
90th%Factor:	1.62	1.62	1.62	1.76	1.78	1.78	1.79	1.62	1.73	1.70	1.67	1.67
HCM2k90thQ:	19.9	19.4	19.4	3.5	2.3	2.3	0.5	19.2	6.9	9.3	13.6	13.6
95th%Factor:	1.80	1.81	1.81	2.04	2.06	2.06	2.09	1.81	1.98	1.94	1.88	1.88
HCM2k95thQ:	22.2	21.6	21.6	4.1	2.7	2.7	0.6	21.5	8.0	10.6	15.4	15.4
98th%Factor:	2.09	2.10	2.10	2.56	2.61	2.61	2.68	2.10	2.43	2.36	2.23	2.23
HCM2k98thQ:	25.7	25.1	25.1	5.1	3.4	3.4	0.7	24.9	9.8	12.9	18.3	18.3

EPAP + GP Alt AM Pk Hr Mitigated

Future Queue Length Report (feet)

Node	Intersection	Northbound L	-- T	-- R	Southbound L	-- T	-- R	Eastbound L	-- T	-- R	Westbound L	-- T	-- R
#3	[HCM2k95thQ]:	766	46	117	21	56	505	314	558	295	156	903	903
#5	[HCM2k95thQ]:	95	318	776	233	529	105	206	922	20	494	571	73
#8	[HCM2k95thQ]:	421	186	280	137	571	447	321	593	1002	761	468	39
#9	[HCM2k95thQ]:	555	540	540	102	66	66	14	537	199	266	385	385

EPAP + GP Alt PM Pk Hr

Scenario Report

Scenario:	EPAP + GP Alt PM
Command:	EPAP + GP Alt PM
Volume:	EPAP PM
Geometry:	EPAP GP Alt
Impact Fee:	Default Impact Fee
Trip Generation:	PM Pk Hr
Trip Distribution:	EPAP PM
Paths:	EPAP GP Alt
Routes:	Default Route
Configuration:	Default Configuration

EPAP + GP Alt PM Pk Hr

Trip Generation Report

Forecast for PM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	0.00	ElemSchStudent	0.07	0.08	0	0	0	0.0
1	Village West	0.00	Tra Vigne SFDU	0.51	0.30	0	0	0	0.0
1	Village West	1646.00	GP Alt SFDU	0.48	0.28	790	461	1251	51.7
1	Village West	130.68	GP Alt Com KSF	2.63	2.85	344	372	716	29.6
1	Village West	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
1	Village West	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
1	Village West	232.00	GP Alt MFDU	0.41	0.22	95	51	146	6.0
1	Village West	0.00	Tra V Internal	-64.00	-64.00	0	0	0	0.0
1	Village West	1.00	GP Alt Interna	-76.00	-76.00	-76	-76	-152	-6.3
1	Village West	1.00	GP Alt Pass-By	-106.00	-111.00	-106	-111	-217	-9
	Zone 1 Subtotal					1047	697	1744	72.0
2	Village East	0.00	Tra Vigne SFDU	0.51	0.30	0	0	0	0.0
2	Village East	774.00	GP Alt SFDU	0.48	0.28	372	217	589	24.3
2	Village East	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
2	Village East	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
	Zone 2 Subtotal					372	217	589	24.3
4	Industrial	406.94	Indust KSF	0.05	0.17	20	69	89	3.7
	Zone 4 Subtotal					20	69	89	3.7
TOTAL						1439	983	2422	100.0

EPAP + GP Alt PM Pk Hr

Trip Distribution Report

Percent Of Trips EPAP PM

Zone	To Gates 1	2	5	6	8	9	10	11	14	15	16
1	2.0	1.0	2.0	4.0	7.0	2.0	3.0	3.0	1.0	3.0	8.0
2	2.0	1.0	2.0	4.0	7.0	2.0	3.0	3.0	1.0	3.0	8.0
4	2.0	1.0	2.0	4.0	7.0	2.0	3.0	3.0	1.0	3.0	8.0

Zone	To Gates 17	18	19	20	22	23
1	2.0	3.0	32.0	5.0	2.0	20.0
2	2.0	3.0	32.0	5.0	2.0	20.0
4	2.0	3.0	32.0	5.0	2.0	20.0

EPAP + GP Alt PM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	D	42.4	0.915	D	45.2	0.958	+ 2.757 D/V
# 4 Eight Mile Rd & Davis Rd	C	29.0	0.812	C	31.3	0.867	+ 2.316 D/V
# 5 Eight Mile & Lower Sacto Rd	D	41.4	0.918	E	72.5	1.134	+31.155 D/V
# 6 West Lane & Armstrong Road	C	33.0	0.721	C	33.1	0.735	+ 0.068 D/V
# 7 West Lane & Ham Lane	A	4.2	0.254	A	5.3	0.279	+ 1.104 D/V
# 8 Eight Mile Rd & West Ln	E	55.2	1.014	F	84.2	1.091	+28.967 D/V
# 9 Eight Mile Road & Ham Lane	A	2.6	0.318	F	85.8	1.135	+83.202 D/V
# 10 Eight Mile & Leach Rd/St J	A	1.3	0.304	B	14.3	0.627	+12.942 D/V
# 11 Eight Mile & MickeGrove/Holman	A	2.7	0.317	B	16.0	0.638	+13.307 D/V
# 14 SR99 W Front & SB Ramps 8 Mile	B	11.8	0.374	B	13.9	0.408	+ 2.049 D/V
# 15 SR99 E Front & NB Ramps 8 Mile	C	24.8	0.658	F	190.6	1.372	+165.807 D/V
# 16 West & L.C.MarkTaylor/Marlette	A	0.0	0.000	A	0.0	0.000	+ 0.000 D/V
# 17 Holman & Lt Col Mark Taylor	C	29.1	0.412	C	29.2	0.412	+ 0.101 D/V
# 18 Morada Lane & West Lane	C	26.3	0.500	C	26.0	0.709	-0.301 D/V
# 19 Morada Lane & Holman Road	C	32.1	0.514	C	32.3	0.514	+ 0.160 D/V
# 20 SR99 W Front & SB Ramps Morada	F	62.9	0.465	F	62.9	0.465	+ 0.000 D/V
# 21 SR99 E Front & NB Ramps Morada	D	27.3	0.796	D	27.3	0.796	+ 0.000 D/V
# 24 West Ln & West Ln Frontage Rd	B	19.6	0.545	B	18.7	0.689	-0.887 D/V
# 25 West Lane & Knickerbocker Dr	C	24.8	0.540	C	22.5	0.652	-2.303 D/V
# 26 West Lane & Hammer Lane	D	35.8	0.728	D	35.8	0.728	+ 0.062 D/V
# 27 Hammer Lane & Holman Road	D	39.8	0.904	D	39.8	0.903	-0.003 D/V

EPAP + GP Alt PM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 14 SR99 W Front & SB Ramps 8 Mile	??? / ???	No / No
# 15 SR99 E Front & NB Ramps 8 Mile	??? / ???	Yes / Yes
# 16 West & L.C.MarkTaylor/Marlette	??? / ???	No / No
# 20 SR99 W Front & SB Ramps Morada	??? / ???	No / No
# 21 SR99 E Front & NB Ramps Morada	??? / ???	Yes / Yes

EPAP + GP Alt PM Pk Hr

Peak Hour Delay Signal Warrant Report

****

Intersection #14 SR99 W Front & SB Ramps 8 Mile

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	112		7	454	143		0	0	0		0	26		0	347
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				13.9			

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.4]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=373]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1089]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + GP Alt PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	112			7	454	143			0	0		0		0	26		0	347	

Major Street Volume: 716
Minor Approach Volume: 373
Minor Approach Volume Threshold: 398

SIGNAL WARRANT DISCLAIMER
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EPAP + GP Alt PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	60	234			0	0	204		193		554		0		50	0		0		0
ApproachDel:	xxxxxx					xxxxxx					190.6					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=32.0]
SUCCEED - Vehicle-hours >= 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=604]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1295]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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EPAP + GP Alt PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	60	234			0		0	204	193		554		0		50		0		0	0

Major Street Volume: 691
Minor Approach Volume: 604
Minor Approach Volume Threshold: 533

SIGNAL WARRANT DISCLAIMER
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EPAP + GP Alt PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #16 West & L.C.MarkTaylor/Marlette

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1356		168		0	1205			0	0		0		0	0		0	0	0
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					xxxxxx				

SIGNAL WARRANT DISCLAIMER
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EPAP + GP Alt PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #16 West & L.C.MarkTaylor/Marlette

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1356		168		0	1205		0		0		0		0	0		0		0

Major Street Volume: 2729
Minor Approach Volume: 0
Minor Approach Volume Threshold: -61 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
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EPAP + GP Alt PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #20 SR99 W Front & SB Ramps Morada

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	73		290		30	101		0		0		0		0	372		0		16
ApproachDel:	20.3					62.9					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=2.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=363]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=882]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=2.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=131]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=882]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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EPAP + GP Alt PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #20 SR99 W Front & SB Ramps Morada

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	73	290			30	101			0	0		0		0	372		0		16

Major Street Volume: 388
Minor Approach Volume: 363
Minor Approach Volume Threshold: 611

SIGNAL WARRANT DISCLAIMER
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EPAP + GP Alt PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #21 SR99 E Front & NB Ramps Morada

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0
Initial Vol:	190	223			0		0	262		13	120		0	547			0		0	0
ApproachDel:	xxxxxx					xxxxxx					27.3					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=5.1]
SUCCEED - Vehicle-hours >= 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=667]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1355]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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EPAP + GP Alt PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #21 SR99 E Front & NB Ramps Morada

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1 0 0 0			0 0 0 1 0			1 0 0 0 1			0 0 0 0 0		
Initial Vol:	190	223	0	0	262	13	120	0	547	0	0	0

Major Street Volume: 688
Minor Approach Volume: 667
Minor Approach Volume Threshold: 410

SIGNAL WARRANT DISCLAIMER
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EPAP + GP Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.958
Loss Time (sec):	12	Average Delay (sec/veh):	45.2
Optimal Cycle:	145	Level Of Service:	D

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	0 1	0	1 0	2 0	1	1 0	1 1	0
Volume Module:PM Peak Hour												
Base Vol:	422	20	49	18	61	219	174	1454	583	73	1229	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	422	20	49	18	61	219	174	1454	583	73	1229	5
Added Vol:	0	0	14	0	0	0	0	86	0	10	59	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	422	20	63	18	61	219	174	1540	583	83	1288	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	459	22	68	20	66	238	189	1674	634	90	1400	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	459	22	68	20	66	238	189	1674	634	90	1400	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	459	22	68	20	66	238	189	1674	634	90	1400	5
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.87	0.87	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	2.00	1.00	1.00	1.00	0.22	0.78	1.00	2.00	1.00	1.00	1.99	0.01
Final Sat.:	3432	1862	1583	1769	358	1286	1769	3538	1583	1769	3521	14
Capacity Analysis Module:												
Vol/Sat:	0.13	0.01	0.04	0.01	0.19	0.19	0.11	0.47	0.40	0.05	0.40	0.40
Crit Moves:	****				****			****		****		
Green/Cycle:	0.14	0.27	0.27	0.07	0.19	0.19	0.12	0.49	0.49	0.05	0.43	0.43
Volume/Cap:	0.96	0.04	0.16	0.16	0.96	0.96	0.92	0.96	0.81	0.96	0.92	0.92
Delay/Veh:	73.3	27.4	28.4	44.6	79.1	79.1	85.3	37.3	27.7	125.9	36.5	36.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	73.3	27.4	28.4	44.6	79.1	79.1	85.3	37.3	27.7	125.9	36.5	36.5
LOS by Move:	E	C	C	D	E	E	F	D	C	F	D	D
HCM2k95thQ:	515	23	77	36	611	611	265	987	588	171	924	924

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 1	0 1		1	0 0	1 0		1	0 2	0 1		1	0 1	1 0	
Lane Group:	L	T	R		L	RT	RT		L	T	R		L	RT	RT	
#LnsInGrps:	2	1	1		1	1	1		1	2	1		1	2	2	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.88	0.88		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.87	0.87		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	0.95	
Fnl Sat Adj:	0.90	0.98	0.83		0.93	0.87	0.87		0.93	0.93	0.83		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.14	0.27	0.27		0.07	0.19	0.19		0.12	0.49	0.49		0.05	0.43	0.43	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.88	0.89		0.98	1.00	1.00		1.00	0.96	0.87		1.00	0.96	0.96	
Q1:		6.5	0.4	1.3		0.5	8.3	8.3		5.2	22.6	12.9		2.5	18.6	18.6
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		1.02	1.02	1.02		0.70	0.70	0.70	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.09	0.09	0.09		0.65	0.65	0.65	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.03	0.06	0.06		0.12	0.42	0.42	
Q2:		4.8	0.0	0.2		0.2	5.4	5.4		0.3	1.2	0.2		0.9	3.5	3.5
HCM2KQueue:		11.3	0.4	1.5		0.7	13.7	13.7		5.4	23.8	13.1		3.4	22.0	22.0
70th%Factor:	1.18	1.20	1.20		1.20	1.17	1.17		1.19	1.16	1.17		1.19	1.16	1.16	
HCM2k70thQ:		13.3	0.5	1.8		0.8	16.1	16.1		6.5	27.5	15.4		4.1	25.5	25.5
85th%Factor:	1.51	1.60	1.59		1.59	1.49	1.49		1.55	1.44	1.49		1.57	1.44	1.44	
HCM2k85thQ:		17.1	0.7	2.4		1.1	20.4	20.4		8.4	34.2	19.6		5.4	31.8	31.8
90th%Factor:	1.63	1.79	1.77		1.79	1.60	1.60		1.70	1.52	1.61		1.74	1.53	1.53	
HCM2k90thQ:		18.4	0.8	2.7		1.2	22.0	22.0		9.3	36.2	21.1		5.9	33.8	33.8
95th%Factor:	1.82	2.09	2.05		2.08	1.78	1.78		1.94	1.66	1.79		2.00	1.68	1.68	
HCM2k95thQ:		20.6	0.9	3.1		1.4	24.4	24.4		10.6	39.5	23.5		6.8	37.0	37.0
98th%Factor:	2.12	2.67	2.59		2.65	2.05	2.05		2.36	1.86	2.06		2.47	1.88	1.88	
HCM2k98thQ:		24.0	1.2	3.9		1.8	28.1	28.1		12.8	44.3	27.1		8.5	41.5	41.5

EPAP + GP Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.867
Loss Time (sec):	12	Average Delay (sec/veh):	31.3
Optimal Cycle:	96	Level Of Service:	C

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	1	0	0	1	0	1	0	1	1	0	1	0	2	0	1
Volume Module:	PM Peak Hour											
Base Vol:	178	85	73	8	98	114	95	1081	265	72	1098	3
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	178	85	73	8	98	114	95	1081	265	72	1098	3
Added Vol:	0	0	43	0	0	0	0	101	0	29	69	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	178	85	116	8	98	114	95	1182	265	101	1167	3
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	193	92	126	9	107	124	103	1285	288	110	1268	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	193	92	126	9	107	124	103	1285	288	110	1268	3
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	193	92	126	9	107	124	103	1285	288	110	1268	3
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.90	0.90	0.93	0.91	0.91	0.93	0.93	0.83
Lanes:	1.00	1.00	1.00	1.00	0.46	0.54	1.00	1.63	0.37	1.00	2.00	1.00
Final Sat.:	1769	1862	1583	1769	791	920	1769	2812	630	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.11	0.05	0.08	0.00	0.13	0.13	0.06	0.46	0.46	0.06	0.36	0.00
Crit Moves:	****				****			****		****		
Green/Cycle:	0.13	0.27	0.27	0.02	0.16	0.16	0.08	0.53	0.53	0.07	0.51	0.51
Volume/Cap:	0.87	0.19	0.30	0.30	0.87	0.87	0.70	0.87	0.87	0.87	0.70	0.00
Delay/Veh:	71.0	28.6	29.7	54.4	65.9	65.9	58.1	25.3	25.3	88.6	19.6	11.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	71.0	28.6	29.7	54.4	65.9	65.9	58.1	25.3	25.3	88.6	19.6	11.8
LOS by Move:	E	C	C	D	E	E	E	C	C	F	B	B
HCM2k95thQ:	404	102	149	32	452	452	144	787	787	281	595	2

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L - T - R						L - T - R						L - T - R						L - T - R					
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	1	0	1	0	1	1	0	0	1	0	1	0	1	1	0	1	0	2	0	1				
Lane Group:	L	T	R	L	RT	RT	L	RT	RT	L	T	R												
#LnsInGrps:	1	1	1	1	1	1	1	2	2	1	2	1												
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12												
CrsswalkWid:	8			8			8			8														
% Hev Veh:	2			2			2			2														
Grade:	0%			0%			0%			0%														
Parking/Hr:	No			No			No			No														
Bus Stp/Hr:	0			0			0			0														
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:	0			0			0			0														
ExclusiveRT:	Include			Include			Include			Include														
% RT Prtct:	0			0			0			0														
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx												
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98												
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
Parking Adj:	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	xxxx	1.00												
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	xxxx	1.00												
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
RT Adj:	xxxx	xxxx	0.85	xxxx	0.92	0.92	xxxx	0.97	0.97	xxxx	xxxx	0.85												
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx												
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.90	0.90	0.93	0.95	0.95	0.93	0.98	0.83												
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00												
Fnl Sat Adj:	0.93	0.98	0.83	0.93	0.90	0.90	0.93	0.91	0.91	0.93	0.93	0.83												
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.13	0.27	0.27	0.02	0.16	0.16	0.08	0.53	0.53	0.07	0.51	0.51
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.90	0.91	1.00	0.99	0.99	0.99	0.87	0.87	1.00	0.79	0.65
Q1:	5.2	1.8	2.5	0.2	6.2	6.2	2.8	17.5	17.5	3.0	11.1	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.96	0.96	0.96	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.19	0.19	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.04	0.14	0.14	1.00	1.00	1.00
Q2:	3.4	0.2	0.4	0.4	3.6	3.6	0.1	0.8	0.8	2.8	2.2	0.0
HCM2KQueue:	8.6	2.0	3.0	0.6	9.8	9.8	2.9	18.3	18.3	5.8	13.3	0.0
70th%Factor:	1.18	1.20	1.19	1.20	1.18	1.18	1.19	1.16	1.16	1.19	1.17	1.20
HCM2k70thQ:	10.2	2.4	3.5	0.7	11.5	11.5	3.4	21.3	21.3	6.9	15.6	0.0
85th%Factor:	1.52	1.58	1.57	1.59	1.52	1.52	1.57	1.46	1.46	1.55	1.49	1.60
HCM2k85thQ:	13.2	3.2	4.7	1.0	14.8	14.8	4.5	26.8	26.8	9.0	19.9	0.1
90th%Factor:	1.66	1.76	1.74	1.79	1.65	1.65	1.75	1.56	1.56	1.70	1.61	1.80
HCM2k90thQ:	14.3	3.5	5.2	1.1	16.1	16.1	5.0	28.6	28.6	9.9	21.4	0.1
95th%Factor:	1.87	2.04	2.01	2.08	1.85	1.85	2.01	1.72	1.72	1.93	1.79	2.10
HCM2k95thQ:	16.2	4.1	5.9	1.3	18.1	18.1	5.8	31.5	31.5	11.2	23.8	0.1
98th%Factor:	2.21	2.56	2.50	2.65	2.17	2.17	2.50	1.94	1.94	2.34	2.06	2.70
HCM2k98thQ:	19.1	5.1	7.4	1.6	21.2	21.2	7.2	35.7	35.7	13.6	27.4	0.1

EPAP + GP Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec): 100 Critical Vol./Cap.(X): 1.134
Loss Time (sec): 12 Average Delay (sec/veh): 72.5
Optimal Cycle: 180 Level Of Service: E

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:	PM Peak Hour											
Base Vol:	49	372	339	61	334	112	98	1001	22	375	1111	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	49	372	339	61	334	112	98	1001	22	375	1111	42
Added Vol:	0	0	115	29	0	0	0	144	0	79	98	20
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	49	372	454	90	334	112	98	1145	22	454	1209	62
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	53	404	493	98	363	122	107	1245	24	493	1314	67
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	53	404	493	98	363	122	107	1245	24	493	1314	67
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	53	404	493	98	363	122	107	1245	24	493	1314	67
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.98	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3432	1862	1583	1769	1862	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.02	0.22	0.31	0.06	0.19	0.08	0.06	0.35	0.02	0.28	0.37	0.04
Crit Moves:			****	****				****		****		
Green/Cycle:	0.02	0.27	0.27	0.05	0.30	0.30	0.08	0.31	0.31	0.25	0.48	0.48
Volume/Cap:	0.65	0.79	1.13	1.13	0.65	0.26	0.78	1.13	0.05	1.13	0.78	0.09
Delay/Veh:	65.4	41.7	121.3	185.2	33.2	26.8	69.0	106	24.2	122.8	23.9	14.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.4	41.7	121.3	185.2	33.2	26.8	69.0	106	24.2	122.8	23.9	14.2
LOS by Move:	E	D	F	F	C	C	E	F	C	F	C	B
HCM2k95thQ:	97	585	1067	334	458	131	248	1327	23	1067	731	42

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        2  0  1  0  1    1  0  1  0  1    1  0  2  0  1    1  0  2  0  1
Lane Group:    L    T     R     L    T     R     L    T     R     L    T     R
#LnsInGrps:     2    1     1     1    1     1     1    2     1     1    2     1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:          8                8                8                8
% Hev Veh:            2                2                2                2
Grade:               0%               0%               0%               0%
Parking/Hr:          No               No               No               No
Bus Stp/Hr:           0                0                0                0
Area Type:    < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:          0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:           0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Hev Veh Adj: 0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
Grade Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Parking Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00
Bus Stp Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00
Area Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
RT Adj:      xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx xxxx  0.85
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.93 0.98  0.83  0.93 0.98  0.83  0.93 0.98  0.83  0.93 0.98  0.83
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 0.97 1.00  1.00  1.00 1.00  1.00  1.00 0.95  1.00  1.00 0.95  1.00
Fnl Sat Adj: 0.90 0.98  0.83  0.93 0.98  0.83  0.93 0.93  0.83  0.93 0.93  0.83
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < < < No  > > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
```


EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Green/Cycle: 0.02 0.27  0.27  0.05 0.30  0.30  0.08 0.31  0.31  0.25 0.48  0.48
ArrivalType:         4                4                4                4
ProgFactor:  1.00 0.96  1.00  1.00 0.93  0.88  0.99 1.00  0.85  1.00 0.86  0.70
Q1:           0.8 10.0  13.7   2.7  8.2   2.3   2.9 18.2   0.4  13.7 13.8   0.7
UpstreamVC:  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00
UpstreamAdj: 0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00
EarlyArrAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Q2:           1.1  3.1  12.3   4.3  1.7   0.3   2.2 15.1   0.1  12.3  3.1   0.1
HCM2KQueue:   1.9 13.1  26.0   7.0  9.9   2.6   5.1 33.3   0.4  26.0 16.9   0.8
------------|---------------||---------------||---------------||---------------|
70th%Factor: 1.20 1.17  1.15  1.18 1.18  1.19  1.19 1.14  1.20  1.15 1.17  1.20
HCM2k70thQ:   2.3 15.3  30.0   8.3 11.7   3.1   6.0 38.1   0.5  30.0 19.6   1.0
------------|---------------||---------------||---------------||---------------|
85th%Factor: 1.58 1.49  1.43  1.54 1.52  1.58  1.55 1.40  1.60  1.43 1.47  1.59
HCM2k85thQ:   3.0 19.5  37.1  10.8 15.0   4.1   7.9 46.6   0.7  37.1 24.8   1.3
------------|---------------||---------------||---------------||---------------|
90th%Factor: 1.76 1.61  1.51  1.68 1.64  1.75  1.71 1.48  1.79  1.51 1.57  1.78
HCM2k90thQ:   3.4 21.0  39.2  11.8 16.3   4.6   8.7 49.1   0.8  39.2 26.5   1.5
------------|---------------||---------------||---------------||---------------|
95th%Factor: 2.04 1.79  1.64  1.91 1.85  2.02  1.95 1.59  2.09  1.64 1.74  2.07
HCM2k95thQ:   3.9 23.4  42.7  13.4 18.3   5.3   9.9 53.1   0.9  42.7 29.3   1.7
------------|---------------||---------------||---------------||---------------|
98th%Factor: 2.56 2.07  1.84  2.28 2.17  2.52  2.38 1.78  2.67  1.84 1.97  2.64
HCM2k98thQ:   4.9 27.0  47.7  16.0 21.5   6.6  12.1 59.2   1.2  47.7 33.3   2.2
```

EPAP + GP Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.735
Loss Time (sec):	12	Average Delay (sec/veh):	33.1
Optimal Cycle:	65	Level Of Service:	C

Street Name:	West Lane						Armstrong Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	0 0	1!	0 0	0 0	1!	0 0
Volume Module:PM Peak Hour												
Base Vol:	3	582	41	132	476	35	29	60	4	78	202	208
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	582	41	132	476	35	29	60	4	78	202	208
Added Vol:	0	39	0	0	58	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	621	41	132	534	35	29	60	4	78	202	208
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	3	675	45	143	580	38	32	65	4	85	220	226
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	675	45	143	580	38	32	65	4	85	220	226
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	675	45	143	580	38	32	65	4	85	220	226
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.92	0.92	0.93	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92
Lanes:	1.00	1.88	0.12	1.00	1.88	0.12	0.31	0.65	0.04	0.16	0.41	0.43
Final Sat.:	1769	3289	217	1769	3290	216	568	1176	78	278	720	742
Capacity Analysis Module:												
Vol/Sat:	0.00	0.21	0.21	0.08	0.18	0.18	0.06	0.06	0.06	0.30	0.30	0.30
Crit Moves:		****		****					****	****		
Green/Cycle:	0.00	0.28	0.28	0.11	0.39	0.39	0.08	0.08	0.08	0.41	0.41	0.41
Volume/Cap:	0.46	0.73	0.73	0.73	0.46	0.46	0.73	0.73	0.73	0.73	0.73	0.73
Delay/Veh:	89.9	35.6	35.6	56.6	23.2	23.2	63.7	63.7	63.7	28.6	28.6	28.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	89.9	35.6	35.6	56.6	23.2	23.2	63.7	63.7	63.7	28.6	28.6	28.6
LOS by Move:	F	D	D	E	C	C	E	E	E	C	C	C
HCM2k95thQ:	28	523	523	285	315	315	229	229	229	606	606	606

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	1	1	0	1 0	1	1	0	0 0	1!	0	0	0 0	1!	0	0
Lane Group:	L	RT		RT	L	RT		RT	LTR	LTR		LTR	LTR	LTR		LTR
#LnsInGrps:	1	2		2	1	2		2	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		4	4		4	4	4		4
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98		0.98	0.98	0.98		0.98
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
RT Adj:	xxxx	0.99	0.99		xxxx	0.99	0.99		0.99	0.99		0.99	0.94	0.94		0.94
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.99	0.99		0.99	0.99	0.99		0.99
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
HCM Sat Adj:	0.93	0.97	0.97		0.93	0.97	0.97		0.96	0.96		0.96	0.92	0.92		0.92
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
MLF Sat Adj:	1.00	0.95	0.95		1.00	0.95	0.95		1.00	1.00		1.00	1.00	1.00		1.00
Fnl Sat Adj:	0.93	0.92	0.92		0.93	0.92	0.92		0.96	0.96		0.96	0.92	0.92		0.92
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.00	0.28	0.28	0.11	0.39	0.39	0.08	0.08	0.08	0.41	0.41	0.41
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.95	0.95	0.99	0.85	0.85	0.99	0.99	0.99	0.89	0.89	0.89
Q1:	0.1	9.1	9.1	3.8	5.7	5.7	2.7	2.7	2.7	11.1	11.1	11.1
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.4	2.4	2.4	2.1	0.8	0.8	1.9	1.9	1.9	2.5	2.5	2.5
HCM2KQueue:	0.5	11.5	11.5	5.9	6.6	6.6	4.7	4.7	4.7	13.6	13.6	13.6
70th%Factor:	1.20	1.17	1.17	1.19	1.18	1.18	1.19	1.19	1.19	1.17	1.17	1.17
HCM2k70thQ:	0.6	13.5	13.5	7.0	7.8	7.8	5.6	5.6	5.6	15.9	15.9	15.9
85th%Factor:	1.59	1.50	1.50	1.55	1.54	1.54	1.56	1.56	1.56	1.49	1.49	1.49
HCM2k85thQ:	0.8	17.3	17.3	9.1	10.1	10.1	7.3	7.3	7.3	20.3	20.3	20.3
90th%Factor:	1.79	1.62	1.62	1.70	1.69	1.69	1.72	1.72	1.72	1.60	1.60	1.60
HCM2k90thQ:	1.0	18.7	18.7	10.0	11.1	11.1	8.0	8.0	8.0	21.8	21.8	21.8
95th%Factor:	2.08	1.82	1.82	1.93	1.92	1.92	1.96	1.96	1.96	1.78	1.78	1.78
HCM2k95thQ:	1.1	20.9	20.9	11.4	12.6	12.6	9.2	9.2	9.2	24.2	24.2	24.2
98th%Factor:	2.66	2.11	2.11	2.33	2.30	2.30	2.40	2.40	2.40	2.05	2.05	2.05
HCM2k98thQ:	1.4	24.3	24.3	13.8	15.1	15.1	11.2	11.2	11.2	27.9	27.9	27.9

EPAP + GP Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.279
Loss Time (sec): 9 Average Delay (sec/veh): 5.3
Optimal Cycle: 25 Level Of Service: A

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0 1	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Volume Module:	PM Peak Hour											
Base Vol:	0	2	21	18	0	1	5	669	0	16	545	45
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2	21	18	0	1	5	669	0	16	545	45
Added Vol:	0	0	9	0	0	0	0	31	0	12	46	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2	30	18	0	1	5	700	0	28	591	45
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	2	33	20	0	1	5	761	0	30	642	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2	33	20	0	1	5	761	0	30	642	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2	33	20	0	1	5	761	0	30	642	49
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.86	0.86	0.73	1.00	0.73	0.93	0.93	0.95	0.93	0.92	0.92
Lanes:	0.00	0.06	0.94	0.95	0.00	0.05	1.00	2.00	0.00	1.00	1.86	0.14
Final Sat.:	0	102	1524	1315	0	73	1769	3538	0	1769	3251	248
Capacity Analysis Module:												
Vol/Sat:	0.00	0.02	0.02	0.01	0.00	0.01	0.00	0.22	0.00	0.02	0.20	0.20
Crit Moves:		****						****		****		
Green/Cycle:	0.00	0.08	0.08	0.08	0.00	0.08	0.01	0.77	0.00	0.06	0.82	0.82
Volume/Cap:	0.00	0.28	0.28	0.19	0.00	0.19	0.24	0.28	0.00	0.28	0.24	0.24
Delay/Veh:	0.0	44.8	44.8	44.2	0.0	44.2	54.4	3.4	0.0	46.2	2.1	2.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	44.8	44.8	44.2	0.0	44.2	54.4	3.4	0.0	46.2	2.1	2.1
LOS by Move:	A	D	D	D	A	D	D	A	A	D	A	A
HCM2k95thQ:	0	65	65	39	0	39	22	20	0	60	17	17

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        0  0  0  1  0    0  0  1! 0  0    1  0  1  1  0    1  0  1  1  0
Lane Group:  xxxx  RT     RT   LTR  LTR   LTR    L   RT     RT    L   RT     RT
#LnsInGrps:     0    1     1     1    1     1     1    2     2     1    2     2
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:         8                8                8                8
% Hev Veh:           2                2                2                2
Grade:              0%               0%               0%               0%
Parking/Hr:         No               No               No               No
Bus Stp/Hr:          0                0                0                0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:         0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:          0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:  xxxx xxxx  xxxx     5 xxxx     5     1 xxxx  xxxx     1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  xxxx 1.00  1.00  1.00 xxxx  1.00  1.00 1.00 xxxxx  1.00 1.00  1.00
Hev Veh Adj: xxxx 0.98  0.98  0.98 xxxx  0.98  0.98 0.98 xxxxx  0.98 0.98  0.98
Grade Adj:   xxxx 1.00  1.00  1.00 xxxx  1.00  1.00 1.00 xxxxx  1.00 1.00  1.00
Parking Adj: xxxx 1.00  1.00  1.00 xxxx  1.00  xxxx 1.00 xxxxx  xxxx 1.00  1.00
Bus Stp Adj: xxxx 1.00  1.00  1.00 xxxx  1.00  xxxx 1.00 xxxxx  xxxx 1.00  1.00
Area Adj:    xxxx 1.00  1.00  1.00 xxxx  1.00  1.00 1.00 xxxxx  1.00 1.00  1.00
RT Adj:      xxxx 0.87  0.87  0.99 xxxx  0.99  xxxx xxxx xxxxx  xxxx 0.99  0.99
LT Adj:      xxxx xxxx xxxxx  0.75 xxxx  0.75  0.95 xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 1.00 0.86  0.86  0.73 1.00  0.73  0.93 0.98  1.00  0.93 0.97  0.97
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 0.95  0.95  1.00 0.95  0.95
Fnl Sat Adj: 1.00 0.86  0.86  0.73 1.00  0.73  0.93 0.93  0.95  0.93 0.92  0.92
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  0.00 1.00  1.00  1.00 0.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
```


EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	xxxxxx	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	xxxxxx	6.68	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	xxxxxx	7.68	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	xxxxxx	7.68	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	xxxxxx	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	xxxxxx	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	xxxxxx	20	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	xxxxxx	0.95	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	0.00	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	xxxxxx	0.54	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	xxxxxx	35	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	xxxxxx	0.97	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	xxxxxx	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	xxxxxx	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	xxxxxx	0.72	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	xxxxxx	0.90	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	xxxxxx	1.31	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	xxxxxx	6.37	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	xxxxxx	0.30	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	1.00	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	xxxxxx	1.45	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	xxxxxx	1.00	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	xxxxxx	0.51	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	xxxxxx	0.75	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	xxxxxx	0.75	xxxxxx	xxxxxx

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.00	0.08	0.08	0.08	0.00	0.08	0.01	0.77	0.00	0.06	0.82	0.82
ArrivalType:		4				4			4				4			
ProgFactor:	1.00	0.98	0.98	0.98	1.00	0.98	1.00	0.00	1.00	0.98	0.00	0.00
Q1:	0.0	0.9	0.9	0.5	0.0	0.5	0.1	0.0	0.0	0.8	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Q2:	0.0	0.4	0.4	0.2	0.0	0.2	0.3	0.4	0.0	0.4	0.3	0.3
HCM2KQueue:	0.0	1.3	1.3	0.8	0.0	0.8	0.4	0.4	0.0	1.2	0.3	0.3
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	0.0	1.5	1.5	0.9	0.0	0.9	0.5	0.5	0.0	1.4	0.4	0.4
85th%Factor:	1.60	1.59	1.59	1.59	1.60	1.59	1.60	1.60	1.60	1.59	1.60	1.60
HCM2k85thQ:	0.0	2.0	2.0	1.2	0.0	1.2	0.7	0.6	0.0	1.9	0.5	0.5
90th%Factor:	1.80	1.78	1.78	1.79	1.80	1.79	1.79	1.79	1.80	1.78	1.79	1.79
HCM2k90thQ:	0.0	2.2	2.2	1.4	0.0	1.4	0.8	0.7	0.0	2.1	0.6	0.6
95th%Factor:	2.10	2.06	2.06	2.08	2.10	2.08	2.09	2.09	2.10	2.06	2.09	2.09
HCM2k95thQ:	0.0	2.6	2.6	1.6	0.0	1.6	0.9	0.8	0.0	2.4	0.7	0.7
98th%Factor:	2.70	2.61	2.61	2.64	2.70	2.64	2.67	2.67	2.70	2.61	2.68	2.68
HCM2k98thQ:	0.0	3.3	3.3	2.0	0.0	2.0	1.1	1.0	0.0	3.0	0.8	0.8

EPAP + GP Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 1.091
Loss Time (sec): 12 Average Delay (sec/veh): 84.2
Optimal Cycle: 180 Level Of Service: F

Street Name:	West Lane								Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	2	0 1	1	0	2	0 1	1	0	2	0 1	1	0	2	0 1
Volume Module:	PM Peak Hour															
Base Vol:	528	385	84		14	320	204		264	728	458		68	865	3	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	528	385	84		14	320	204		264	728	458		68	865	3	
Added Vol:	0	0	333		46	0	0		0	288	0		230	197	31	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	528	385	417		60	320	204		264	1016	458		298	1062	34	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	574	418	453		65	348	222		287	1104	498		324	1154	37	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	574	418	453		65	348	222		287	1104	498		324	1154	37	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	574	418	453		65	348	222		287	1104	498		324	1154	37	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Lanes:	1.00	2.00	1.00		1.00	2.00	1.00		1.00	2.00	1.00		1.00	2.00	1.00	
Final Sat.:	1769	3538	1583		1769	3538	1583		1769	3538	1583		1769	3538	1583	
Capacity Analysis Module:																
Vol/Sat:	0.32	0.12	0.29		0.04	0.10	0.14		0.16	0.31	0.31		0.18	0.33	0.02	
Crit Moves:	****						****			****			****			
Green/Cycle:	0.30	0.38	0.38		0.05	0.13	0.13		0.15	0.29	0.29		0.17	0.30	0.30	
Volume/Cap:	1.09	0.31	0.76		0.76	0.77	1.09		1.08	1.09	1.10		1.09	1.08	0.08	
Delay/Veh:	101.3	22.1	32.8		78.8	49.7	133.0		119.2	92.0	107.6		120.2	85.1	24.9	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	101.3	22.1	32.8		78.8	49.7	133.0		119.2	92.0	107.6		120.2	85.1	24.9	
LOS by Move:	F	C	C		E	D	F		F	F	F		F	F	C	
HCM2k95thQ:	1045	191	525		180	346	570		674	1146	1031		646	1069	35	

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	2	0	1	1	0	2	0	1	1	0	2	0	1	1
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	2	1		1	2	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.30	0.38	0.38		0.05	0.13	0.13		0.15	0.29	0.29		0.17	0.30	0.30	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.84	0.92		1.00	0.99	1.00		1.00	1.00	1.00		1.00	1.00	0.86	
Q1:	15.9	3.6	10.1		1.8	4.9	6.2		8.0	16.1	13.8		9.0	16.9	0.6	
UpstreamVC:	0.41	0.41	0.41		0.00	0.00	0.00		0.00	0.00	0.00		0.46	0.46	0.46	
UpstreamAdj:	0.92	0.92	0.92		0.00	0.00	0.00		0.00	0.00	0.00		0.89	0.89	0.89	
EarlyArrAdj:	0.46	0.55	0.50		1.00	1.00	1.00		1.00	1.00	1.00		0.31	0.46	0.42	
Q2:	9.5	0.2	1.4		1.8	2.4	6.5		7.4	12.1	11.2		5.6	9.2	0.0	
HCM2KQueue:	25.4	3.9	11.6		3.6	7.3	12.7		15.4	28.2	25.0		14.6	26.1	0.7	
70th%Factor:	1.15	1.19	1.17		1.19	1.18	1.17		1.17	1.15	1.15		1.17	1.15	1.20	
HCM2k70thQ:	29.3	4.6	13.6		4.3	8.6	14.9		17.9	32.4	28.8		17.1	30.0	0.8	
85th%Factor:	1.43	1.56	1.50		1.57	1.54	1.50		1.48	1.42	1.43		1.48	1.43	1.59	
HCM2k85thQ:	36.3	6.0	17.4		5.7	11.2	19.0		22.7	40.0	35.8		21.7	37.1	1.1	
90th%Factor:	1.51	1.73	1.62		1.73	1.68	1.61		1.59	1.50	1.51		1.59	1.51	1.79	
HCM2k90thQ:	38.4	6.7	18.8		6.3	12.2	20.5		24.3	42.2	37.9		23.3	39.3	1.2	
95th%Factor:	1.65	1.98	1.82		1.99	1.90	1.80		1.76	1.63	1.65		1.77	1.64	2.08	
HCM2k95thQ:	41.8	7.7	21.0		7.2	13.8	22.8		27.0	45.8	41.2		25.8	42.8	1.4	
98th%Factor:	1.84	2.44	2.11		2.46	2.27	2.08		2.01	1.81	1.85		2.02	1.83	2.65	
HCM2k98thQ:	46.8	9.4	24.4		8.9	16.5	26.4		30.8	51.2	46.2		29.6	47.8	1.8	

EPAP + GP Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	1.135
Loss Time (sec):	12	Average Delay (sec/veh):	85.8
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Ham Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:	PM Peak Hour											
Base Vol:	0	0	0	13	0	13	6	726	0	0	851	20
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	13	0	13	6	726	0	0	851	20
Added Vol:	333	4	300	7	5	0	0	214	452	416	125	4
Pass-By:	56	0	55	0	0	0	0	-53	53	53	-53	0
Initial Fut:	389	4	355	20	5	13	6	887	505	469	923	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	423	4	386	22	5	14	7	964	549	510	1003	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	423	4	386	22	5	14	7	964	549	510	1003	26
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	423	4	386	22	5	14	7	964	549	510	1003	26
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.83	0.83	0.93	0.87	0.87	0.93	0.88	0.88	0.93	0.93	0.93
Lanes:	1.00	0.01	0.99	1.00	0.28	0.72	1.00	1.27	0.73	1.00	1.95	0.05
Final Sat.:	1769	18	1569	1769	461	1200	1769	2133	1214	1769	3434	89
Capacity Analysis Module:												
Vol/Sat:	0.24	0.25	0.25	0.01	0.01	0.01	0.00	0.45	0.45	0.29	0.29	0.29
Crit Moves:		****		****				****		****		
Green/Cycle:	0.22	0.22	0.22	0.01	0.01	0.01	0.01	0.40	0.40	0.25	0.64	0.64
Volume/Cap:	1.10	1.13	1.13	1.13	1.10	1.10	0.45	1.13	1.13	1.13	0.45	0.45
Delay/Veh:	115.5	129	129.4	300.9	298	297.8	70.4	100	100.5	122.1	9.1	9.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	115.5	129	129.4	300.9	298	297.8	70.4	100	100.5	122.1	9.1	9.1
LOS by Move:	F	F	F	F	F	F	E	F	F	F	A	A
HCM2k95thQ:	917	896	896	123	113	113	11	1468	1468	1001	200	200

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	1	0	0	1	0		1	0	0	1	0		1	0	1	1	0		1	0	1	1	0	
Lane Group:	L		RT		RT		L		RT		RT		L		RT		RT		L		RT		RT	
#LnsInGrps:	1		1		1		1		1		1		1		2		2		1		2		2	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:			8						8						8						8			
% Hev Veh:			2						2						2						2			
Grade:			0%						0%						0%						0%			
Parking/Hr:			No						No						No						No			
Bus Stp/Hr:			0						0						0						0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0						0						0						0			
ExclusiveRT:			Include						Include						Include						Include			
% RT Prtct:			0						0						0						0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1		xxxx		xxxx		1		xxxx		xxxx		1		xxxx		xxxx		1		xxxx		xxxx	
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Hev Veh Adj:	0.98		0.98		0.98		0.98		0.98		0.98		0.98		0.98		0.98		0.98		0.98		0.98	
Grade Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Parking Adj:	xxxx		1.00		1.00		xxxx		1.00		1.00		xxxx		1.00		1.00		xxxx		1.00		1.00	
Bus Stp Adj:	xxxx		1.00		1.00		xxxx		1.00		1.00		xxxx		1.00		1.00		xxxx		1.00		1.00	
Area Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
RT Adj:	xxxx		0.85		0.85		xxxx		0.89		0.89		xxxx		0.95		0.95		xxxx		1.00		1.00	
LT Adj:	0.95		xxxx		xxxxx		0.95		xxxx		xxxxx		0.95		xxxx		xxxxx		0.95		xxxx		xxxxx	
PedBike Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
HCM Sat Adj:	0.93		0.83		0.83		0.93		0.87		0.87		0.93		0.93		0.93		0.93		0.98		0.98	
Usr Sat Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
MLF Sat Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		0.95		0.95		1.00		0.95		0.95	
Fnl Sat Adj:	0.93		0.83		0.83		0.93		0.87		0.87		0.93		0.88		0.88		0.93		0.93		0.93	
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.22	0.22	0.22	0.01	0.01	0.01	0.01	0.40	0.40	0.25	0.64	0.64
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.46	0.46
Q1:	11.7	10.8	10.8	0.6	0.5	0.5	0.2	22.1	22.1	14.2	3.5	3.5
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.53	0.53	0.53
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.85	0.85	0.84	0.84	0.84
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.05	0.50	0.50	0.38	0.69	0.69
Q2:	10.1	10.5	10.5	1.8	1.7	1.7	0.0	15.1	15.1	10.0	0.6	0.6
HCM2KQueue:	21.9	21.3	21.3	2.4	2.2	2.2	0.2	37.3	37.3	24.2	4.0	4.0
70th%Factor:	1.16	1.16	1.16	1.19	1.19	1.19	1.20	1.14	1.14	1.15	1.19	1.19
HCM2k70thQ:	25.3	24.7	24.7	2.9	2.7	2.7	0.3	42.4	42.4	27.9	4.8	4.8
85th%Factor:	1.44	1.45	1.45	1.58	1.58	1.58	1.60	1.39	1.39	1.43	1.56	1.56
HCM2k85thQ:	31.6	30.8	30.8	3.8	3.5	3.5	0.4	51.7	51.7	34.6	6.3	6.3
90th%Factor:	1.53	1.54	1.54	1.75	1.76	1.76	1.80	1.46	1.46	1.52	1.73	1.73
HCM2k90thQ:	33.5	32.8	32.8	4.2	3.9	3.9	0.4	54.5	54.5	36.7	7.0	7.0
95th%Factor:	1.68	1.68	1.68	2.02	2.03	2.03	2.09	1.58	1.58	1.66	1.98	1.98
HCM2k95thQ:	36.7	35.9	35.9	4.9	4.5	4.5	0.5	58.7	58.7	40.0	8.0	8.0
98th%Factor:	1.89	1.89	1.89	2.53	2.54	2.54	2.68	1.76	1.76	1.86	2.43	2.43
HCM2k98thQ:	41.2	40.3	40.3	6.1	5.7	5.7	0.6	65.5	65.5	44.8	9.8	9.8

EPAP + GP Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St J

Cycle (sec): 100 Critical Vol./Cap.(X): 0.627
Loss Time (sec): 12 Average Delay (sec/veh): 14.3
Optimal Cycle: 51 Level Of Service: B

Street Name:	Leach Road/Street J						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0
Volume Module:PM Peak Hour												
Base Vol:	0	0	0	6	0	5	6	681	0	0	854	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	6	0	5	6	681	0	0	854	5
Added Vol:	129	0	88	0	0	0	0	300	221	151	416	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	129	0	88	6	0	5	6	981	221	151	1270	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	140	0	96	7	0	5	7	1066	240	164	1380	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	140	0	96	7	0	5	7	1066	240	164	1380	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	140	0	96	7	0	5	7	1066	240	164	1380	5
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	0.93	1.00	0.83	0.93	0.90	0.90	0.93	0.93	0.93
Lanes:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.63	0.37	1.00	1.99	0.01
Final Sat.:	1769	0	1583	1769	0	1583	1769	2806	632	1769	3520	14
Capacity Analysis Module:												
Vol/Sat:	0.08	0.00	0.06	0.00	0.00	0.00	0.00	0.38	0.38	0.09	0.39	0.39
Crit Moves:	****				****			****		****		
Green/Cycle:	0.13	0.00	0.12	0.01	0.00	0.01	0.01	0.61	0.61	0.15	0.75	0.75
Volume/Cap:	0.63	0.00	0.51	0.51	0.00	0.47	0.53	0.63	0.63	0.63	0.53	0.53
Delay/Veh:	47.0	0.0	43.6	79.0	0.0	77.1	85.2	13.2	13.2	44.8	5.5	5.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.0	0.0	43.6	79.0	0.0	77.1	85.2	13.2	13.2	44.8	5.5	5.5
LOS by Move:	D	A	D	E	A	E	F	B	B	D	A	A
HCM2k95thQ:	249	0	169	40	0	35	10	358	358	275	67	67

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        1  0  0  1  0    1  0  0  1  0    1  0  1  1  0    1  0  1  1  0
Lane Group:    L   RT     RT    L   RT     RT    L   RT     RT    L   RT     RT
#LnsInGrps:     1    1     1     1    1     1     1    2     2     1    2     2
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:          8                8                8                8
% Hev Veh:            2                2                2                2
Grade:               0%               0%               0%               0%
Parking/Hr:          No               No               No               No
Bus Stp/Hr:           0                0                0                0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:          0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:           0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 xxxx  1.00  1.00 xxxx  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Hev Veh Adj: 0.98 xxxx  0.98  0.98 xxxx  0.98  0.98 0.98  0.98  0.98 0.98  0.98
Grade Adj:   1.00 xxxx  1.00  1.00 xxxx  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Parking Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx 1.00  1.00  xxxx 1.00  1.00
Bus Stp Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx 1.00  1.00  xxxx 1.00  1.00
Area Adj:    1.00 xxxx  1.00  1.00 xxxx  1.00  1.00 1.00  1.00  1.00 1.00  1.00
RT Adj:      xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx 0.97  0.97  xxxx 1.00  1.00
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.93 1.00  0.83  0.93 1.00  0.83  0.93 0.95  0.95  0.93 0.98  0.98
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 0.95  0.95  1.00 0.95  0.95
Fnl Sat Adj: 0.93 1.00  0.83  0.93 1.00  0.83  0.93 0.90  0.90  0.93 0.93  0.93
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 0.00  1.00  1.00 0.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
```


EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Green/Cycle: 0.13 0.00  0.12  0.01 0.00  0.01  0.01 0.61  0.61  0.15 0.75  0.75
ArrivalType:         4                4                4                4
ProgFactor:  0.98 1.00  0.98  1.00 1.00  1.00  1.00 0.61  0.61  0.98 0.02  0.02
Q1:           3.6  0.0   2.4   0.2  0.0   0.2   0.2  7.5   7.5   4.2  0.2   0.2
UpstreamVC:  0.00 0.00  0.00  0.00 0.00  0.00  1.13 1.13  1.13  0.00 0.00  0.00
UpstreamAdj: 0.00 0.00  0.00  0.00 0.00  0.00  0.09 0.09  0.09  0.00 0.00  0.00
EarlyArrAdj: 1.00 0.00  1.00  1.00 0.00  1.00  0.00 0.07  0.07  1.00 1.00  1.00
Q2:           1.5  0.0   1.0   0.6  0.0   0.5   0.0  0.1   0.1   1.5  1.1   1.1
HCM2KQueue:   5.1  0.0   3.4   0.8  0.0   0.7   0.2  7.6   7.6   5.7  1.3   1.3
------------|---------------||---------------||---------------||---------------|
70th%Factor: 1.19 1.20  1.19  1.20 1.20  1.20  1.20 1.18  1.18  1.19 1.20  1.20
HCM2k70thQ:   6.1  0.0   4.0   0.9  0.0   0.8   0.2  9.0   9.0   6.7  1.5   1.5
------------|---------------||---------------||---------------||---------------|
85th%Factor: 1.55 1.60  1.57  1.59 1.60  1.59  1.60 1.53  1.53  1.55 1.59  1.59
HCM2k85thQ:   7.9  0.0   5.3   1.2  0.0   1.1   0.3 11.6  11.6   8.8  2.1   2.1
------------|---------------||---------------||---------------||---------------|
90th%Factor: 1.71 1.80  1.74  1.78 1.80  1.79  1.80 1.67  1.67  1.70 1.77  1.77
HCM2k90thQ:   8.7  0.0   5.9   1.4  0.0   1.2   0.3 12.7  12.7   9.7  2.3   2.3
------------|---------------||---------------||---------------||---------------|
95th%Factor: 1.95 2.10  2.00  2.07 2.10  2.08  2.09 1.89  1.89  1.94 2.06  2.06
HCM2k95thQ:   9.9  0.0   6.8   1.6  0.0   1.4   0.4 14.3  14.3  11.0  2.7   2.7
------------|---------------||---------------||---------------||---------------|
98th%Factor: 2.38 2.70  2.47  2.64 2.70  2.65  2.69 2.26  2.26  2.35 2.61  2.61
HCM2k98thQ:  12.1  0.0   8.4   2.0  0.0   1.8   0.5 17.1  17.1  13.3  3.4   3.4
```

EPAP + GP Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Cycle (sec):	100	Critical Vol./Cap.(X):	0.638
Loss Time (sec):	12	Average Delay (sec/veh):	16.0
Optimal Cycle:	52	Level Of Service:	B

Street Name:	Micke Grove Road/Holman Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:PM Peak Hour												
Base Vol:	0	0	0	18	0	8	6	767	0	0	861	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	18	0	8	6	767	0	0	861	11
Added Vol:	107	0	0	0	0	101	69	246	73	0	360	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	107	0	0	18	0	109	75	1013	73	0	1221	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	116	0	0	20	0	118	82	1101	79	0	1327	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	116	0	0	20	0	118	82	1101	79	0	1327	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	116	0	0	20	0	118	82	1101	79	0	1327	12
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	1.00	0.93	1.00	0.83	0.93	0.93	0.83	1.00	0.93	0.83
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1769	1900	1900	1769	1900	1583	1769	3538	1583	1900	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.07	0.00	0.00	0.01	0.00	0.07	0.05	0.31	0.05	0.00	0.38	0.01
Crit Moves:	****					****	****				****	
Green/Cycle:	0.10	0.00	0.00	0.22	0.00	0.12	0.07	0.66	0.66	0.00	0.59	0.59
Volume/Cap:	0.64	0.00	0.00	0.05	0.00	0.64	0.64	0.47	0.08	0.00	0.64	0.01
Delay/Veh:	50.4	0.0	0.0	30.8	0.0	49.4	55.5	8.6	6.1	0.0	14.3	8.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.4	0.0	0.0	30.8	0.0	49.4	55.5	8.6	6.1	0.0	14.3	8.6
LOS by Move:	D	A	A	C	A	D	E	A	A	A	B	A
HCM2k95thQ:	224	0	0	23	0	225	179	207	19	0	415	4

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	1 0	1		1 0	1 0	1		1 0	2 0	1		1 0	2 0	1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	1	1		1	1	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		xxxx	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	xxxxx		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
Hev Veh Adj:	0.98	xxxx	xxxxx		0.98	xxxx	0.98		0.98	0.98	0.98		xxxx	0.98	0.98	
Grade Adj:	1.00	xxxx	xxxxx		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
Parking Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	xxxx	xxxxx		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
RT Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		xxxx	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	1.00	1.00		0.93	1.00	0.83		0.93	0.98	0.83		1.00	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	1.00	1.00		0.93	1.00	0.83		0.93	0.93	0.83		1.00	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	0.00		1.00	0.00	1.00		1.00	1.00	1.00		0.00	1.00	1.00	

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.10	0.00	0.00	0.22	0.00	0.12	0.07	0.66	0.66	0.00	0.59	0.59
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	1.00	1.00	0.91	1.00	0.98	0.99	0.42	0.36	1.00	0.66	0.53
Q1:	3.1	0.0	0.0	0.4	0.0	3.1	2.2	3.3	0.3	0.0	8.4	0.1
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.87
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.36
EarlyArrAdj:	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.28	0.26
Q2:	1.5	0.0	0.0	0.1	0.0	1.5	1.4	0.9	0.1	0.0	0.5	0.0
HCM2KQueue:	4.5	0.0	0.0	0.4	0.0	4.6	3.6	4.2	0.4	0.0	8.9	0.1
70th%Factor:	1.19	1.20	1.20	1.20	1.20	1.19	1.19	1.19	1.20	1.20	1.18	1.20
HCM2k70thQ:	5.4	0.0	0.0	0.5	0.0	5.4	4.3	5.0	0.4	0.0	10.5	0.1
85th%Factor:	1.56	1.60	1.60	1.60	1.60	1.56	1.57	1.56	1.60	1.60	1.52	1.60
HCM2k85thQ:	7.1	0.0	0.0	0.7	0.0	7.1	5.6	6.6	0.6	0.0	13.6	0.1
90th%Factor:	1.72	1.80	1.80	1.79	1.80	1.72	1.73	1.72	1.79	1.80	1.66	1.80
HCM2k90thQ:	7.8	0.0	0.0	0.8	0.0	7.9	6.2	7.2	0.7	0.0	14.8	0.1
95th%Factor:	1.97	2.10	2.10	2.09	2.10	1.97	1.99	1.98	2.09	2.10	1.87	2.10
HCM2k95thQ:	8.9	0.0	0.0	0.9	0.0	9.0	7.2	8.3	0.8	0.0	16.6	0.2
98th%Factor:	2.40	2.70	2.70	2.67	2.70	2.40	2.46	2.42	2.67	2.70	2.20	2.69
HCM2k98thQ:	10.9	0.0	0.0	1.2	0.0	11.0	8.8	10.2	1.0	0.0	19.6	0.2

EPAP + GP Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Average Delay (sec/veh): 8.4 Worst Case Level Of Service: B[13.9]

Street Name:	SR 99 West Frontage Rd						SR 99 SB Ramps (Eight Mile Rd)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Volume Module:PM Peak Hour												
Base Vol:	0	112	7	257	143	0	0	0	0	26	0	318
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	112	7	257	143	0	0	0	0	26	0	318
Added Vol:	0	0	0	197	0	0	0	0	0	0	0	29
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	112	7	454	143	0	0	0	0	26	0	347
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	122	8	493	155	0	0	0	0	28	0	377
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	122	8	493	155	0	0	0	0	28	0	377
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	129	xxxx	xxxxx	xxxx	xxxx	xxxxx	1268	xxxx	126
Potent Cap.:	xxxx	xxxx	xxxxx	1456	xxxx	xxxxx	xxxx	xxxx	xxxxx	186	xxxx	925
Move Cap.:	xxxx	xxxx	xxxxx	1456	xxxx	xxxxx	xxxx	xxxx	xxxxx	118	xxxx	925
Volume/Cap:	xxxx	xxxx	xxxx	0.34	xxxx	xxxx	xxxx	xxxx	xxxx	0.24	xxxx	0.41
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	38.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	21.9	xxxx	50.2
Control Del:	xxxxx	xxxx	xxxxx	8.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	44.9	xxxx	11.5
LOS by Move:	*	*	*	A	*	*	*	*	*	E	*	B
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	1.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	8.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			13.9		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

Upstream Signals:

Link Index:	#183	
Dist(miles):	0.250	
Speed (mph):	1.00	
SignalIndex:	#12	
Cycle Time:	100 secs	
InitVolume:	116	40
Saturation:	1769	999
ArrivalType:	4	4
G/C:	0.11	0.05

*** Computation 1: Time for Queue to Clear at Each Upstream Intersection

P:	0.150	0.066
gq1:	5.57	3.74
gq2:	0.53	0.21
gq:	6.11	3.95

*** Computation 2: Time Intersection Blocked Because of Upstream Platoons

alpha:	0.550	
beta:	0.645	
ta (secs):	900.000	
F:	0.003	
f:	1.000	1.000
vcmax:	33	12
vcg:	35	12
vcmin:	1000	1000
tp:	0.0	0.0
p:	0.000	

*** Computation 3: Platoon Event Periods

pdom/psubo: 0.000/0.000/Unconstrained

*** Computation 4: Conflicting Flows During Each Unblocked Period

InitCnflVol:	0	xxxxx	xxxxx	129	xxxxx	xxxxx	1457	1272	155	1268	1268	126
AdjCnflVol:	0	xxxxx	xxxxx	129	xxxxx	xxxxx	1457	1272	155	1268	1268	126
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	0	xxxxx	xxxxx	129	xxxxx	xxxxx	1457	1272	155	1268	1268	126

*** Computation 5: Capacity for Subject Movement During Unblocked Period

InitPotCap:	1623	xxxxx	xxxxx	1456	xxxxx	xxxxx	108	168	890	186	169	925
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
Potent Cap.:	1623	xxxxx	xxxxx	1456	xxxxx	xxxxx	108	168	890	186	169	925

EPAP + GP Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Average Delay (sec/veh): 89.3 Worst Case Level Of Service: F[190.6]

Street Name:	SR 99 East Frontage Rd								SR 99 NB Ramps (Eight Mile Rd)							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Volume Module: PM Peak Hour																				
Base Vol:	60	234	0	0	204	173	266	0	50	0	0	0								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	60	234	0	0	204	173	266	0	50	0	0	0								
Added Vol:	0	0	0	0	0	20	288	0	0	0	0	0								
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0								
Initial Fut:	60	234	0	0	204	193	554	0	50	0	0	0								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92								
PHF Volume:	65	254	0	0	222	210	602	0	54	0	0	0								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	65	254	0	0	222	210	602	0	54	0	0	0								
Critical Gap Module:																				
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx								
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	432	xxxx	xxxxx	xxxx	xxxx	xxxxx	607	xxxx	222	xxxx	xxxx	xxxxx								
Potent Cap.:	1128	xxxx	xxxxx	xxxx	xxxx	xxxxx	460	xxxx	818	xxxx	xxxx	xxxxx								
Move Cap.:	1128	xxxx	xxxxx	xxxx	xxxx	xxxxx	439	xxxx	818	xxxx	xxxx	xxxxx								
Volume/Cap:	0.06	xxxx	xxxx	xxxx	xxxx	xxxx	1.37	xxxx	0.07	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	4.6	xxxx	xxxxx	xxxx	xxxx	xxxxx	710	xxxx	5.3	xxxx	xxxx	xxxxx								
Control Del:	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	206.9	xxxx	9.7	xxxxx	xxxx	xxxxx								
LOS by Move:	A	*	*	*	*	*	F	*	A	*	*	*								
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT								
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx			xxxxxx			190.6			xxxxxx										
ApproachLOS:	*			*			F			*										

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #15 SR99 E Front & NB Ramps 8 Mile

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
-----------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:       #222             #188
Dist(miles):      0.250            0.250
Speed (mph):       1.00             1.00
SignalIndex:      #23              #13
Cycle Time:         100 secs         100 secs
InitVolume:     0    48         41    22
Saturation:     0   738       1769  1348
ArrivalType:    0     4          4     4
G/C:         0.00  0.48       0.03  0.06
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:          0.000 0.645      0.040 0.074
gq1:         0.00  2.31       2.23  1.51
gq2:         0.00  0.22       0.07  0.03
gq:          0.00  2.52       2.30  1.55
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:            0.550            0.550
beta:             0.645            0.645
ta (secs):       900.000           900.000
F:                0.003            0.003
f:          1.000 1.000      1.000 1.000
vcmax:          0     6         13     6
vcg:            0    14         13     7
vcmin:       1000  1000       1000  1000
tp:           0.0   0.0        0.0   0.0
p:                0.000            0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol: 432 xxxxx xxxxx    0 xxxxx xxxxx  607   607   222  739   816   254
AdjCnflVol:  432 xxxxx xxxxx    0 xxxxx xxxxx  607   607   222  739   816   254
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol: 432 xxxxx xxxxx    0 xxxxx xxxxx  607   607   222  739   816   254
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1128 xxxxx xxxxx 1623 xxxxx xxxxx  460   411   818  333   311   784
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1128 xxxxx xxxxx 1623 xxxxx xxxxx  460   411   818  333   311   784
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EPAP + GP Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #16 West & L.C.MarkTaylor/Marlette

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

```
Street Name:            West Lane               Lt.Col.Mark Taylor/Marlette Rd
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
-----------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  2  0  1    0  0  3  0  0    0  0  0  0  0    0  0  0  0  1
-----------|---------------||---------------||---------------||---------------|
Volume Module:PM Peak Hour
Base Vol:       0  997     0     0  846     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  997     0     0  846     0     0    0     0     0    0     0
Added Vol:      0  359   168     0  359     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0 1356   168     0 1205     0     0    0     0     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0 1474   183     0 1310     0     0    0     0     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0 1474   183     0 1310     0     0    0     0     0    0     0
-----------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.9
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3
-----------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   737
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   361
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   361
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.00
-----------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         *                *                *                *
```

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #16 West & L.C.MarkTaylor/Marlette

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:				#105								
Dist(miles):				0.250								
Speed (mph):				1.00								
SignalIndex:				#56								
Cycle Time:				100 secs								
InitVolume:			129	1076								
Saturation:			1769	5083								
ArrivalType:			4	4								
G/C:			0.19	0.72								
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:			0.260	0.953								
gq1:			5.40	0.99								
gq2:			0.58	0.39								
gq:			5.98	1.38								
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:				0.500								
beta:				0.667								
ta (secs):				900.000								
F:				0.003								
f:			1.000	1.000								
vcmax:			35	23								
vcg:			41	317								
vcmin:			2000	2000								
tp:			0.0	0.0								
p:				0.000								
*** Computation 3: Platoon Event Periods												
pdom/psubo:	0.000/0.000/Unconstrained											
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	0	xxxxx	xxxxx	0	xxxxx	xxxxx	2047	2966	437	1911	2784	737
AdjCnflVol:	0	xxxxx	xxxxx	0	xxxxx	xxxxx	2047	2966	437	1911	2784	737
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	0	xxxxx	xxxxx	0	xxxxx	xxxxx	2047	2966	437	1911	2784	737
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx	48	14	568	60	19	361
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
Potent Cap.:	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx	48	14	568	60	19	361

EPAP + GP Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

Cycle (sec):	100	Critical Vol./Cap.(X):	0.412
Loss Time (sec):	12	Average Delay (sec/veh):	29.2
Optimal Cycle:	36	Level Of Service:	C

Street Name:	Holman Road						Lt. Col. Mark Taylor Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	0	1	1	0	3	0	1	1	0
Volume Module:	PM Peak Hour											
Base Vol:	145	202	208	11	157	7	14	178	142	177	134	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	145	202	208	11	157	7	14	178	142	177	134	8
Added Vol:	0	35	0	0	24	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	145	237	208	11	181	7	14	178	142	177	134	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	158	258	226	12	197	8	15	193	154	192	146	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	158	258	226	12	197	8	15	193	154	192	146	9
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	158	258	226	12	197	8	15	193	154	192	146	9
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.89	0.83	0.93	0.98	0.83	0.93	0.97	0.97
Lanes:	1.00	2.00	1.00	1.00	3.00	1.00	1.00	1.00	1.00	1.00	0.94	0.06
Final Sat.:	1769	3538	1583	1769	5083	1583	1769	1862	1583	1769	1743	104
Capacity Analysis Module:												
Vol/Sat:	0.09	0.07	0.14	0.01	0.04	0.00	0.01	0.10	0.10	0.11	0.08	0.08
Crit Moves:			****	****				****		****		
Green/Cycle:	0.25	0.35	0.35	0.02	0.11	0.11	0.05	0.25	0.25	0.26	0.47	0.47
Volume/Cap:	0.35	0.21	0.41	0.41	0.35	0.04	0.18	0.41	0.39	0.41	0.18	0.18
Delay/Veh:	31.1	23.1	25.4	57.9	41.6	39.9	46.7	31.8	31.6	31.0	15.5	15.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.1	23.1	25.4	57.9	41.6	39.9	46.7	31.8	31.6	31.0	15.5	15.5
LOS by Move:	C	C	C	E	D	D	D	C	C	C	B	B
HCM2k95thQ:	176	121	222	46	118	12	23	220	176	232	103	103

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	2	0 1	1	0	3	0 1	1	0	1	0 1	1	0	0	1 0
Lane Group:	L		T	R	L		T	R	L		T	R	L		RT	RT
#LnsInGrps:	1		2	1	1		3	1	1		1	1	1		1	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.89	0.83		0.93	0.98	0.83		0.93	0.97	0.97	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.25	0.35	0.35		0.02	0.11	0.11		0.05	0.25	0.25		0.26	0.47	0.47	
ArrivalType:	4				4				4				4			
ProgFactor:	0.92	0.85	0.87		1.00	0.97	0.96		0.99	0.92	0.92		0.92	0.73	0.73	
Q1:	3.3	2.2	4.2		0.3	1.8	0.2		0.4	4.1	3.3		4.0	1.8	1.8	
UpstreamVC:	0.18	0.18	0.18		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.99	0.99	0.99		0.00	0.00	0.00		1.00	1.00	1.00		0.00	0.00	0.00	
EarlyArrAdj:	0.45	0.56	0.51		1.00	1.00	1.00		0.17	0.47	0.42		1.00	1.00	1.00	
Q2:	0.2	0.1	0.4		0.6	0.5	0.0		0.0	0.3	0.3		0.7	0.2	0.2	
HCM2KQueue:	3.5	2.4	4.5		0.9	2.3	0.2		0.4	4.5	3.5		4.7	2.0	2.0	
70th%Factor:	1.19	1.19	1.19		1.20	1.19	1.20		1.20	1.19	1.19		1.19	1.20	1.20	
HCM2k70thQ:	4.2	2.9	5.4		1.1	2.8	0.3		0.5	5.3	4.2		5.6	2.4	2.4	
85th%Factor:	1.57	1.58	1.56		1.59	1.58	1.60		1.60	1.56	1.57		1.56	1.58	1.58	
HCM2k85thQ:	5.5	3.8	7.0		1.4	3.7	0.4		0.7	7.0	5.5		7.4	3.2	3.2	
90th%Factor:	1.74	1.75	1.72		1.78	1.76	1.80		1.79	1.72	1.74		1.72	1.76	1.76	
HCM2k90thQ:	6.1	4.2	7.8		1.6	4.1	0.4		0.8	7.7	6.1		8.1	3.6	3.6	
95th%Factor:	1.99	2.03	1.97		2.07	2.03	2.09		2.09	1.97	1.99		1.96	2.04	2.04	
HCM2k95thQ:	7.0	4.8	8.9		1.8	4.7	0.5		0.9	8.8	7.0		9.3	4.1	4.1	
98th%Factor:	2.46	2.53	2.41		2.63	2.54	2.68		2.67	2.41	2.46		2.39	2.56	2.56	
HCM2k98thQ:	8.7	6.1	10.9		2.3	5.9	0.6		1.2	10.8	8.7		11.3	5.2	5.2	

EPAP + GP Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.709
Loss Time (sec): 12 Average Delay (sec/veh): 26.0
Optimal Cycle: 61 Level Of Service: C

Street Name:	West Lane						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0
Volume Module:	PM Peak Hour											
Base Vol:	82	674	250	266	580	30	41	54	56	296	55	198
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	82	674	250	266	580	30	41	54	56	296	55	198
Added Vol:	0	460	0	25	315	20	29	0	0	0	0	37
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	82	1134	250	291	895	50	70	54	56	296	55	235
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	89	1233	272	316	973	54	76	59	61	322	60	255
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	1233	272	316	973	54	76	59	61	322	60	255
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	1233	272	316	973	54	76	59	61	322	60	255
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	5083	1583	3432	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.35	0.17	0.09	0.27	0.03	0.02	0.01	0.04	0.09	0.01	0.16
Crit Moves:		****		****			****					****
Green/Cycle:	0.05	0.49	0.49	0.13	0.57	0.57	0.03	0.08	0.08	0.18	0.23	0.23
Volume/Cap:	0.48	0.71	0.35	0.71	0.48	0.06	0.71	0.15	0.51	0.51	0.05	0.71
Delay/Veh:	48.0	21.2	15.9	46.9	13.1	9.7	67.7	43.4	48.1	37.5	30.2	42.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.0	21.2	15.9	46.9	13.1	9.7	67.7	43.4	48.1	37.5	30.2	42.0
LOS by Move:	D	C	B	D	B	A	E	D	D	D	C	D
HCM2k95thQ:	105	617	194	300	307	23	127	38	128	243	25	394

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0 1	2	0	2	0 1	2	0	3	0 1	2	0	3	0 1
Lane Group:	L		T	R	L		T	R	L		T	R	L		T	R
#LnsInGrps:	2		2	1	2		2	1	2		3	1	2		3	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.05	0.49	0.49	0.13	0.57	0.57	0.03	0.08	0.08	0.18	0.23	0.23
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.83	0.73	0.98	0.64	0.57	1.00	0.98	0.99	0.96	0.91	0.96
Q1:	1.2	11.6	3.4	4.3	5.5	0.4	1.1	0.5	1.6	4.0	0.4	6.3
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.8	2.3	0.5	2.0	0.9	0.1	1.4	0.2	0.9	1.0	0.1	2.1
HCM2KQueue:	2.1	13.9	3.9	6.2	6.4	0.4	2.5	0.7	2.5	5.0	0.5	8.4
70th%Factor:	1.19	1.17	1.19	1.19	1.19	1.20	1.19	1.20	1.19	1.19	1.20	1.18
HCM2k70thQ:	2.5	16.3	4.7	7.4	7.6	0.5	3.0	0.9	3.0	5.9	0.6	9.9
85th%Factor:	1.58	1.49	1.56	1.54	1.54	1.60	1.58	1.59	1.58	1.55	1.60	1.53
HCM2k85thQ:	3.2	20.7	6.1	9.6	9.9	0.7	3.9	1.2	4.0	7.7	0.8	12.8
90th%Factor:	1.76	1.60	1.73	1.69	1.69	1.79	1.75	1.79	1.75	1.71	1.79	1.66
HCM2k90thQ:	3.6	22.2	6.8	10.6	10.8	0.8	4.4	1.3	4.4	8.5	0.9	14.0
95th%Factor:	2.04	1.78	1.98	1.92	1.92	2.09	2.02	2.08	2.02	1.96	2.08	1.88
HCM2k95thQ:	4.2	24.7	7.8	12.0	12.3	0.9	5.1	1.5	5.1	9.7	1.0	15.8
98th%Factor:	2.55	2.04	2.44	2.32	2.31	2.67	2.52	2.65	2.52	2.38	2.66	2.22
HCM2k98thQ:	5.2	28.4	9.5	14.5	14.8	1.2	6.3	1.9	6.4	11.8	1.3	18.7

EPAP + GP Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.514
Loss Time (sec): 12 Average Delay (sec/veh): 32.3
Optimal Cycle: 42 Level Of Service: C

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 3	0 1	1	0 3	0 1	1	0 3	0 1	1	0 3	0 1
Volume Module:	PM Peak Hour											
Base Vol:	193	192	202	100	139	91	122	355	161	231	501	200
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	193	192	202	100	139	91	122	355	161	231	501	200
Added Vol:	0	29	0	0	20	4	6	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	193	221	202	100	159	95	128	355	161	231	501	200
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	210	240	220	109	173	103	139	386	175	251	545	217
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	210	240	220	109	173	103	139	386	175	251	545	217
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	210	240	220	109	173	103	139	386	175	251	545	217
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.12	0.05	0.14	0.06	0.03	0.07	0.08	0.08	0.11	0.14	0.11	0.14
Crit Moves:			****	****					****	****		
Green/Cycle:	0.25	0.27	0.27	0.12	0.14	0.14	0.18	0.21	0.21	0.28	0.31	0.31
Volume/Cap:	0.47	0.18	0.51	0.51	0.25	0.47	0.44	0.35	0.51	0.51	0.34	0.44
Delay/Veh:	32.6	28.1	32.0	43.5	38.6	41.3	37.6	33.5	36.0	31.5	26.6	28.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.6	28.1	32.0	43.5	38.6	41.3	37.6	33.5	36.0	31.5	26.6	28.1
LOS by Move:	C	C	C	D	D	D	D	C	D	C	C	C
HCM2k95thQ:	238	89	249	153	82	141	200	182	248	274	193	221

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        1  0  3  0  1    1  0  3  0  1    1  0  3  0  1    1  0  3  0  1
Lane Group:    L    T     R     L    T     R     L    T     R     L    T     R
#LnsInGrps:     1    3     1     1    3     1     1    3     1     1    3     1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:          8                8                8                8
% Hev Veh:            2                2                2                2
Grade:               0%               0%               0%               0%
Parking/Hr:          No               No               No               No
Bus Stp/Hr:           0                0                0                0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:          0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:           0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Hev Veh Adj: 0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
Grade Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Parking Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00
Bus Stp Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00
Area Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
RT Adj:      xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx xxxx  0.85
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.93 0.98  0.83  0.93 0.98  0.83  0.93 0.98  0.83  0.93 0.98  0.83
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 0.91  1.00  1.00 0.91  1.00  1.00 0.91  1.00  1.00 0.91  1.00
Fnl Sat Adj: 0.93 0.89  0.83  0.93 0.89  0.83  0.93 0.89  0.83  0.93 0.89  0.83
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
```


EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Green/Cycle: 0.25 0.27  0.27  0.12 0.14  0.14  0.18 0.21  0.21  0.28 0.31  0.31
ArrivalType:         4                4                4                4
ProgFactor:  0.93 0.89  0.93  0.98 0.96  0.97  0.95 0.93  0.95  0.92 0.88  0.90
Q1:           4.6  1.7   4.8   2.8  1.5   2.6   3.3  3.1   4.1   5.4  3.8   4.3
UpstreamVC:  0.70 0.70  0.70  0.35 0.35  0.35  0.00 0.00  0.00  0.83 0.83  0.83
UpstreamAdj: 0.65 0.65  0.65  0.94 0.94  0.94  0.00 0.00  0.00  0.45 0.45  0.45
EarlyArrAdj: 0.29 0.32  0.29  0.27 0.31  0.28  1.00 1.00  1.00  0.22 0.24  0.22
Q2:           0.3  0.1   0.3   0.3  0.1   0.2   0.8  0.5   1.0   0.2  0.1   0.2
HCM2KQueue:   4.9  1.7   5.1   3.0  1.6   2.8   4.0  3.7   5.1   5.7  3.9   4.5
------------|---------------||---------------||---------------||---------------|
70th%Factor: 1.19 1.20  1.19  1.19 1.20  1.19  1.19 1.19  1.19  1.19 1.19  1.19
HCM2k70thQ:   5.8  2.1   6.1   3.6  1.9   3.4   4.8  4.4   6.0   6.7  4.6   5.3
------------|---------------||---------------||---------------||---------------|
85th%Factor: 1.56 1.58  1.55  1.57 1.58  1.57  1.56 1.57  1.55  1.55 1.56  1.56
HCM2k85thQ:   7.6  2.8   7.9   4.8  2.5   4.4   6.3  5.7   7.9   8.8  6.1   7.0
------------|---------------||---------------||---------------||---------------|
90th%Factor: 1.71 1.77  1.71  1.74 1.77  1.75  1.73 1.73  1.71  1.70 1.73  1.72
HCM2k90thQ:   8.3  3.1   8.7   5.3  2.8   4.9   7.0  6.3   8.7   9.6  6.7   7.7
------------|---------------||---------------||---------------||---------------|
95th%Factor: 1.96 2.04  1.95  2.01 2.05  2.01  1.98 1.99  1.95  1.94 1.98  1.97
HCM2k95thQ:   9.5  3.6   9.9   6.1  3.3   5.7   8.0  7.3   9.9  11.0  7.7   8.8
------------|---------------||---------------||---------------||---------------|
98th%Factor: 2.39 2.57  2.38  2.49 2.58  2.51  2.43 2.45  2.38  2.35 2.44  2.41
HCM2k98thQ:  11.6  4.5  12.1   7.6  4.1   7.0   9.8  9.0  12.1  13.3  9.5  10.8
```

EPAP + GP Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 SR99 W Front & SB Ramps Morada

Average Delay (sec/veh): 21.0 Worst Case Level Of Service: F[62.9]

Street Name:	SR 99 West Frontage Rd						SR 99 SB Ramps (Morada Lane)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0	1 0	0 1	0	0 0	0 0	0	0 0	1 0	0	0 1
Volume Module:PM Peak Hour												
Base Vol:	0	73	290	30	101	0	0	0	0	372	0	16
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	73	290	30	101	0	0	0	0	372	0	16
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	73	290	30	101	0	0	0	0	372	0	16
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	79	315	33	110	0	0	0	0	404	0	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	79	315	33	110	0	0	0	0	404	0	17
Critical Gap Module:												
Critical Gp:xxxxx	6.5	6.2		7.1	6.5	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:xxxxx	4.0	3.3		3.5	4.0	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol: xxxx	826	0		848	809	xxxxx	xxxx	xxxx	xxxxx	0	xxxx	xxxxx
Potent Cap.: xxxx	307	1085		281	314	xxxxx	xxxx	xxxx	xxxxx	1623	xxxx	xxxxx
Move Cap.: xxxx	231	1085		120	236	xxxxx	xxxx	xxxx	xxxxx	1623	xxxx	xxxxx
Volume/Cap: xxxx	0.34	0.29		0.27	0.46	xxxx	xxxx	xxxx	xxxx	0.25	xxxx	xxxx
Level Of Service Module:												
2Way95thQ: xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	24.7	xxxx	xxxxx
Control Del:xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx
LOS by Move: *	*	*		*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.: xxxx	xxxx	622		193	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:xxxxx	xxxx	4.5		4.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:xxxxx	xxxx	20.3		62.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS: *	*	C		F	*	*	*	*	*	*	*	*
ApproachDel:	20.3			62.9			xxxxxx			xxxxxx		
ApproachLOS:	C			F			*			*		

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #21 SR99 E Front & NB Ramps Morada

Average Delay (sec/veh): 14.6 Worst Case Level Of Service: D[27.3]

Street Name:	SR 99 East Frontage Rd						SR 99 NB Ramps (Morada Lane)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1	0	0 0	0 0	0	1 0	1 0	0	0 1	0 0	0	0 0
Volume Module:PM Peak Hour												
Base Vol:	190	223	0	0	262	13	120	0	547	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	190	223	0	0	262	13	120	0	547	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	190	223	0	0	262	13	120	0	547	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	207	242	0	0	285	14	130	0	595	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	207	242	0	0	285	14	130	0	595	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	299	xxxx	xxxxx	xxxx	xxxx	xxxxx	947	xxxx	292	xxxx	xxxx	xxxxx
Potent Cap.:	1262	xxxx	xxxxx	xxxx	xxxx	xxxxx	290	xxxx	747	xxxx	xxxx	xxxxx
Move Cap.:	1262	xxxx	xxxxx	xxxx	xxxx	xxxxx	249	xxxx	747	xxxx	xxxx	xxxxx
Volume/Cap:	0.16	xxxx	xxxx	xxxx	xxxx	xxxx	0.52	xxxx	0.80	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	14.6	xxxx	xxxxx	xxxx	xxxx	xxxxx	69.7	xxxx	204.4	xxxx	xxxx	xxxxx
Control Del:	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	34.4	xxxx	25.8	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	D	*	D	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			27.3			xxxxxx		
ApproachLOS:	*			*			D			*		

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 West Ln & West Ln Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.689
Loss Time (sec):	9	Average Delay (sec/veh):	18.7
Optimal Cycle:	50	Level Of Service:	B

Street Name:	West Lane							West Lane Frontage Road					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R	
Control:	Protected			Protected			Permitted			Permitted			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	1	0 1	1 0	1	0 1	1 0	0	1 0	0 1	1	0 0	1 0	
Volume Module:	PM Peak Hour												
Base Vol:	196	912	148	38	742	63	82	9	107	141	16	9	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Initial Bse:	196	912	148	38	742	63	82	9	107	141	16	9	
Added Vol:	0	460	0	0	315	0	0	0	0	0	0	0	
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	
Initial Fut:	196	1372	148	38	1057	63	82	9	107	141	16	9	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
PHF Volume:	213	1491	161	41	1149	68	89	10	116	153	17	10	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	213	1491	161	41	1149	68	89	10	116	153	17	10	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
FinalVolume:	213	1491	161	41	1149	68	89	10	116	153	17	10	
Saturation Flow Module:													
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Adjustment:	0.93	0.92	0.92	0.93	0.92	0.92	0.71	0.71	0.83	0.62	0.93	0.93	
Lanes:	1.00	1.81	0.19	1.00	1.89	0.11	0.90	0.10	1.00	1.00	0.64	0.36	
Final Sat.:	1769	3145	339	1769	3312	197	1208	133	1583	1186	1127	634	
Capacity Analysis Module:													
Vol/Sat:	0.12	0.47	0.47	0.02	0.35	0.35	0.07	0.07	0.07	0.13	0.02	0.02	
Crit Moves:		****		****						****			
Green/Cycle:	0.19	0.69	0.69	0.03	0.54	0.54	0.19	0.19	0.19	0.19	0.19	0.19	
Volume/Cap:	0.65	0.69	0.69	0.69	0.65	0.65	0.39	0.39	0.39	0.69	0.08	0.08	
Delay/Veh:	42.1	10.1	10.1	76.5	17.3	17.3	36.6	36.6	36.5	46.7	33.6	33.6	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
AdjDel/Veh:	42.1	10.1	10.1	76.5	17.3	17.3	36.6	36.6	36.5	46.7	33.6	33.6	
LOS by Move:	D	B	B	E	B	B	D	D	D	D	C	C	
HCM2k95thQ:	279	320	320	127	510	510	146	146	166	275	35	35	

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 1	1 0		1	0 1	1 0		0	1 0	0 1		1	0 0	1 0	
Lane Group:	L	RT	RT		L	RT	RT		LT	LT	R		L	RT	RT	
#LnsInGrps:	1	2	2		1	2	2		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		5	5	xxxx		2	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.99	0.99		xxxx	0.99	0.99		xxxx	xxxx	0.85		xxxx	0.95	0.95	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.72	0.72	xxxxx		0.64	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.97	0.97		0.93	0.97	0.97		0.71	0.71	0.83		0.62	0.93	0.93	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	0.95		1.00	0.95	0.95		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.92	0.92		0.93	0.92	0.92		0.71	0.71	0.83		0.62	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North	South	East	West
Cycle Length, C:	xxxxxx	xxxxxx	100	100
Actual Green Time Per Lane Group, G:	xxxxxx	xxxxxx	17.76	17.76
Effective Green Time Per Lane Group, g:	xxxxxx	xxxxxx	18.76	18.76
Opposing Effective Green Time, go:	xxxxxx	xxxxxx	18.76	18.76
Number Of Opposing Lanes, No:	xxxxxx	xxxxxx	1	1
Number Of Lanes In Lane Group, N:	xxxxxx	xxxxxx	1	1
Adjusted Left-Turn Flow Rate, Vlt:	xxxxxx	xxxxxx	89	153
Proportion of Left Turns in Lane Group, Plt:	xxxxxx	xxxxxx	0.90	1.00
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	xxxxxx	xxxxxx	2.48	4.26
Adjusted Opposing Flow Rate, Vo:	xxxxxx	xxxxxx	27	99
Opposing Flow Per Lane Per Cycle, Volc:	xxxxxx	xxxxxx	0.75	2.75
Opposing Platoon Ratio, Rpo:	xxxxxx	xxxxxx	1.33	1.33
Lost Time Per Phase, tl:	xxxxxx	xxxxxx	3.00	3.00
Eff grn until arrival of left-turn car, gf:	xxxxxx	xxxxxx	0.28	0.00
Opposing Queue Ratio, qro:	xxxxxx	xxxxxx	0.75	0.75
Eff grn blocked by opposing queue, gq:	xxxxxx	xxxxxx	0.00	1.45
Eff grn while left turns filter thru, gu:	xxxxxx	xxxxxx	18.48	17.31
Max opposing cars arriving during gq-gf, n:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	0.86	0.81
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	0.90	1.00
Through-car Equivalents, el1:	xxxxxx	xxxxxx	1.44	1.45
Single Lane Through-car Equivalents, el2:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	xxxxxx	xxxxxx	0.20	0.21
Single Lane Left Turn Adjustment Factor, fm:	xxxxxx	xxxxxx	0.72	0.64
Left Turn Adjustment Factor, flt:	xxxxxx	xxxxxx	0.72	0.64

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.19	0.69	0.69	0.03	0.54	0.54	0.19	0.19	0.19	0.19	0.19	0.19
ArrivalType:		4			4			4			4	
ProgFactor:	0.97	0.38	0.38	1.00	0.75	0.75	0.95	0.95	0.95	0.97	0.93	0.93
Q1:	5.3	5.4	5.4	1.1	9.4	9.4	2.3	2.3	2.7	3.9	0.6	0.6
UpstreamVC:	0.65	0.65	0.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.71	0.71	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.27	0.60	0.60	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.5	1.3	1.3	1.4	1.8	1.8	0.6	0.6	0.6	1.8	0.1	0.1
HCM2KQueue:	5.8	6.7	6.7	2.5	11.2	11.2	2.9	2.9	3.3	5.7	0.7	0.7
70th%Factor:	1.19	1.18	1.18	1.19	1.18	1.18	1.19	1.19	1.19	1.19	1.20	1.20
HCM2k70thQ:	6.9	7.9	7.9	3.0	13.2	13.2	3.5	3.5	3.9	6.7	0.8	0.8
85th%Factor:	1.55	1.54	1.54	1.58	1.51	1.51	1.57	1.57	1.57	1.55	1.59	1.59
HCM2k85thQ:	8.9	10.3	10.3	4.0	16.9	16.9	4.6	4.6	5.2	8.8	1.1	1.1
90th%Factor:	1.70	1.69	1.69	1.75	1.63	1.63	1.75	1.75	1.74	1.70	1.79	1.79
HCM2k90thQ:	9.8	11.3	11.3	4.4	18.2	18.2	5.1	5.1	5.8	9.7	1.2	1.2
95th%Factor:	1.94	1.91	1.91	2.02	1.82	1.82	2.01	2.01	2.00	1.94	2.08	2.08
HCM2k95thQ:	11.2	12.8	12.8	5.1	20.4	20.4	5.9	5.9	6.6	11.0	1.4	1.4
98th%Factor:	2.34	2.30	2.30	2.52	2.12	2.12	2.50	2.50	2.48	2.35	2.65	2.65
HCM2k98thQ:	13.5	15.4	15.4	6.4	23.8	23.8	7.3	7.3	8.2	13.3	1.8	1.8

EPAP + GP Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 West Lane & Knickerbocker Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.652
Loss Time (sec): 12 Average Delay (sec/veh): 22.5
Optimal Cycle: 53 Level Of Service: C

Street Name:	West Lane						Knickerbocker Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:	PM Peak Hour											
Base Vol:	72	1115	86	112	824	58	99	95	44	135	74	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	72	1115	86	112	824	58	99	95	44	135	74	58
Added Vol:	0	460	0	0	315	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	72	1575	86	112	1139	58	99	95	44	135	74	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	78	1712	93	122	1238	63	108	103	48	147	80	63
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	78	1712	93	122	1238	63	108	103	48	147	80	63
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	78	1712	93	122	1238	63	108	103	48	147	80	63
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.89	0.93	0.93	0.93	0.93	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	2.85	0.15	1.00	0.68	0.32	1.00	0.56	0.44
Final Sat.:	1769	5083	1583	1769	4803	245	1769	1212	561	1769	975	764
Capacity Analysis Module:												
Vol/Sat:	0.04	0.34	0.06	0.07	0.26	0.26	0.06	0.09	0.09	0.08	0.08	0.08
Crit Moves:		****		****				****		****		
Green/Cycle:	0.09	0.52	0.52	0.11	0.53	0.53	0.11	0.13	0.13	0.13	0.15	0.15
Volume/Cap:	0.49	0.65	0.11	0.65	0.49	0.49	0.56	0.65	0.65	0.65	0.56	0.56
Delay/Veh:	45.5	18.2	12.5	50.9	15.0	15.0	45.8	47.8	47.8	48.2	42.2	42.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.5	18.2	12.5	50.9	15.0	15.0	45.8	47.8	47.8	48.2	42.2	42.2
LOS by Move:	D	B	B	D	B	B	D	D	D	D	D	D
HCM2k95thQ:	111	492	48	177	306	306	194	268	268	263	233	233

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	3 0	1	1	0	2 1	0	1	0	0 1	0	1	0	0 1	0	1
Lane Group:	L	T	R	L	RT	RT	L	RT	RT	L	RT	RT	L	RT	RT	L
#LnsInGrps:	1	3	1	1	3	3	1	1	1	1	1	1	1	1	1	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8				8			8			8			8		
% Hev Veh:	2				2			2			2			2		
Grade:	0%				0%			0%			0%			0%		
Parking/Hr:	No				No			No			No			No		
Bus Stp/Hr:	0				0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0			0			0			0		
ExclusiveRT:	Include				Include			Include			Include			Include		
% RT Prtct:	0				0			0			0			0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98				
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Parking Adj:	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00				
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00				
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
RT Adj:	xxxx	xxxx	0.85	xxxx	0.99	0.99	xxxx	0.95	0.95	xxxx	0.93	0.93				
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx				
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.97	0.97	0.93	0.93	0.93	0.93	0.92	0.92				
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Sat Adj:	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00				
Fnl Sat Adj:	0.93	0.89	0.83	0.93	0.89	0.89	0.93	0.93	0.93	0.93	0.92	0.92				
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.09	0.52	0.52	0.11	0.53	0.53	0.11	0.13	0.13	0.13	0.15	0.15
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.78	0.66	0.98	0.70	0.70	0.98	0.98	0.98	0.98	0.97	0.97
Q1:	2.0	9.8	0.9	3.2	5.9	5.9	2.8	3.9	3.9	3.8	3.6	3.6
UpstreamVC:	0.67	0.67	0.67	0.65	0.65	0.65	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.69	0.69	0.69	0.72	0.72	0.72	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.17	0.50	0.45	0.19	0.52	0.52	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.2	0.9	0.1	0.3	0.5	0.5	1.1	1.6	1.6	1.6	1.2	1.2
HCM2KQueue:	2.2	10.8	0.9	3.5	6.4	6.4	3.9	5.5	5.5	5.4	4.7	4.7
70th%Factor:	1.19	1.18	1.20	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19
HCM2k70thQ:	2.6	12.7	1.1	4.2	7.6	7.6	4.7	6.6	6.6	6.4	5.6	5.6
85th%Factor:	1.58	1.51	1.59	1.57	1.54	1.54	1.56	1.55	1.55	1.55	1.56	1.56
HCM2k85thQ:	3.5	16.2	1.5	5.6	9.8	9.8	6.1	8.6	8.6	8.4	7.4	7.4
90th%Factor:	1.76	1.63	1.78	1.74	1.69	1.69	1.73	1.70	1.70	1.71	1.72	1.72
HCM2k90thQ:	3.8	17.6	1.7	6.2	10.8	10.8	6.8	9.4	9.4	9.2	8.1	8.1
95th%Factor:	2.03	1.83	2.07	1.99	1.92	1.92	1.98	1.94	1.94	1.94	1.96	1.96
HCM2k95thQ:	4.4	19.7	1.9	7.1	12.3	12.3	7.8	10.7	10.7	10.5	9.3	9.3
98th%Factor:	2.55	2.14	2.63	2.46	2.31	2.31	2.44	2.35	2.35	2.36	2.39	2.39
HCM2k98thQ:	5.6	23.0	2.5	8.7	14.8	14.8	9.5	13.0	13.0	12.8	11.4	11.4

EPAP + GP Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.728
Loss Time (sec):	12	Average Delay (sec/veh):	35.8
Optimal Cycle:	63	Level Of Service:	D

Street Name:	West Lane						Hammer Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	4 0	1	2 0	4 0	1	2 0	4 0	1	2 0	4 0	1
Volume Module:	PM Peak Hour											
Base Vol:	485	876	189	247	637	242	450	1224	181	368	1112	122
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	485	876	189	247	637	242	450	1224	181	368	1112	122
Added Vol:	0	460	0	0	315	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	485	1336	189	247	952	242	450	1224	181	368	1112	122
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	527	1452	205	268	1035	263	489	1330	197	400	1209	133
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	527	1452	205	268	1035	263	489	1330	197	400	1209	133
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	527	1452	205	268	1035	263	489	1330	197	400	1209	133
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.15	0.21	0.13	0.08	0.15	0.17	0.14	0.20	0.12	0.12	0.18	0.08
Crit Moves:	****					****	****				****	
Green/Cycle:	0.21	0.32	0.32	0.12	0.23	0.23	0.20	0.28	0.28	0.16	0.24	0.24
Volume/Cap:	0.73	0.67	0.40	0.67	0.67	0.73	0.73	0.71	0.45	0.71	0.73	0.34
Delay/Veh:	40.5	30.1	27.0	46.4	36.3	43.0	41.7	33.9	30.6	43.7	36.4	31.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.5	30.1	27.0	46.4	36.3	43.0	41.7	33.9	30.6	43.7	36.4	31.6
LOS by Move:	D	C	C	D	D	D	D	C	C	D	D	C
HCM2k95thQ:	423	490	226	202	361	351	404	497	241	284	419	148

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	4	0 1	2	0	4	0 1	2	0	4	0 1	2	0	4	0 1
Lane Group:	L		T	R	L		T	R	L		T	R	L		T	R
#LnsInGrps:	2		4	1	2		4	1	2		4	1	2		4	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.21	0.32	0.32		0.12	0.23	0.23		0.20	0.28	0.28		0.16	0.24	0.24	
ArrivalType:	4				4				4				4			
ProgFactor:	0.97	0.93	0.89		0.98	0.96	0.97		0.97	0.95	0.92		0.98	0.96	0.92	
Q1:	6.8	8.9	3.9		3.6	6.9	6.5		6.4	8.7	4.1		5.3	8.1	2.8	
UpstreamVC:	0.00	0.00	0.00		0.49	0.49	0.49		0.00	0.00	0.00		0.65	0.65	0.65	
UpstreamAdj:	0.00	0.00	0.00		0.87	0.87	0.87		0.00	0.00	0.00		0.71	0.71	0.71	
EarlyArrAdj:	1.00	1.00	1.00		0.25	0.38	0.35		1.00	1.00	1.00		0.25	0.33	0.30	
Q2:	2.3	1.9	0.7		0.5	0.7	0.9		2.2	2.2	0.8		0.6	0.8	0.2	
HCM2KQueue:	9.1	10.7	4.6		4.1	7.6	7.4		8.6	10.9	4.9		5.9	9.0	2.9	
70th%Factor:	1.18	1.18	1.19		1.19	1.18	1.18		1.18	1.18	1.19		1.19	1.18	1.19	
HCM2k70thQ:	10.7	12.6	5.5		4.9	9.0	8.8		10.2	12.8	5.9		7.0	10.6	3.5	
85th%Factor:	1.52	1.51	1.56		1.56	1.53	1.53		1.52	1.51	1.55		1.55	1.52	1.57	
HCM2k85thQ:	13.8	16.2	7.2		6.4	11.7	11.4		13.2	16.4	7.7		9.1	13.7	4.6	
90th%Factor:	1.65	1.63	1.72		1.73	1.67	1.68		1.66	1.63	1.71		1.70	1.66	1.75	
HCM2k90thQ:	15.0	17.5	7.9		7.1	12.8	12.4		14.3	17.7	8.4		10.0	14.9	5.1	
95th%Factor:	1.86	1.83	1.96		1.98	1.89	1.90		1.87	1.83	1.96		1.93	1.86	2.01	
HCM2k95thQ:	16.9	19.6	9.0		8.1	14.5	14.0		16.2	19.9	9.6		11.4	16.7	5.9	
98th%Factor:	2.20	2.14	2.40		2.43	2.26	2.27		2.21	2.13	2.38		2.34	2.20	2.50	
HCM2k98thQ:	20.0	22.9	11.1		9.9	17.2	16.8		19.1	23.2	11.8		13.7	19.8	7.4	

EPAP + GP Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.903
Loss Time (sec):	12	Average Delay (sec/veh):	39.8
Optimal Cycle:	111	Level Of Service:	D

Street Name:	Hammer Lane									Holman Road								
Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Y+R:	4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0		
Lanes:	2	0	2	1	0	2	0	3	0	1	2	0	3	1	0	2	0	3	1	0
Volume Module:	PM Peak Hour																			
Base Vol:	558	764	512			198	508	119			338	1081	324			473	963	75		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	558	764	512			198	508	119			338	1081	324			473	963	75		
Added Vol:	0	29	0			0	20	0			0	0	0			0	0	0		
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0		
Initial Fut:	558	793	512			198	528	119			338	1081	324			473	963	75		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92		
PHF Volume:	607	862	557			215	574	129			367	1175	352			514	1047	82		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	607	862	557			215	574	129			367	1175	352			514	1047	82		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
FinalVolume:	607	862	557			215	574	129			367	1175	352			514	1047	82		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900		
Adjustment:	0.90	0.84	0.84			0.90	0.89	0.83			0.90	0.86	0.86			0.90	0.88	0.88		
Lanes:	2.00	2.00	1.00			2.00	3.00	1.00			2.00	3.08	0.92			2.00	3.71	0.29		
Final Sat.:	3432	3189	1594			3432	5083	1583			3432	5032	1508			3432	6219	484		
Capacity Analysis Module:																				
Vol/Sat:	0.18	0.27	0.35			0.06	0.11	0.08			0.11	0.23	0.23			0.15	0.17	0.17		
Crit Moves:			****			****						****				****				
Green/Cycle:	0.28	0.39	0.39			0.07	0.18	0.18			0.16	0.26	0.26			0.17	0.26	0.26		
Volume/Cap:	0.64	0.70	0.90			0.90	0.64	0.46			0.65	0.90	0.90			0.90	0.65	0.65		
Delay/Veh:	33.1	26.9	36.6			79.9	39.6	38.0			41.7	43.1	43.1			58.7	33.9	33.9		
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
AdjDel/Veh:	33.1	26.9	36.6			79.9	39.6	38.0			41.7	43.1	43.1			58.7	33.9	33.9		
LOS by Move:	C	C	D			E	D	D			D	D	D			E	C	C		
HCM2k95thQ:	410	547	885			205	284	168			253	587	587			519	418	418		

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																				
Lanes:	2	0	2	1	0	2	0	3	0	1	2	0	3	1	0	2	0	3	1	0
Lane Group:	L		RT		RT	L		T		R	L		RT		RT	L		RT		RT
#LnsInGrps:	2		3		3	2		3		1	2		4		4	2		4		4
HCM Ops Input Saturation Adj Module:																				
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12
CrsswalkWid:			8					8					8					8		
% Hev Veh:			2					2					2					2		
Grade:			0%					0%					0%					0%		
Parking/Hr:			No					No					No					No		
Bus Stp/Hr:			0					0					0					0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																			
Cnft Ped/Hr:			0					0					0					0		
ExclusiveRT:			Include					Include					Include					Include		
% RT Prtct:			0					0					0					0		
HCM Ops f(lt) Adj Case Module:																				
f(lt) Case:	1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx		
HCM Ops Saturation Adj Module:																				
Ln Wid Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Hev Veh Adj:	0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98		
Grade Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Parking Adj:	xxxx	1.00	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00			xxxx	1.00	1.00		
Bus Stp Adj:	xxxx	1.00	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00			xxxx	1.00	1.00		
Area Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
RT Adj:	xxxx	0.94	0.94			xxxx	xxxx	0.85			xxxx	0.97	0.97			xxxx	0.99	0.99		
LT Adj:	0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx		
PedBike Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
HCM Sat Adj:	0.93	0.92	0.92			0.93	0.98	0.83			0.93	0.95	0.95			0.93	0.97	0.97		
Usr Sat Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Sat Adj:	0.97	0.91	0.91			0.97	0.91	1.00			0.97	0.91	0.91			0.97	0.91	0.91		
Fnl Sat Adj:	0.90	0.84	0.84			0.90	0.89	0.83			0.90	0.86	0.86			0.90	0.88	0.88		
Delay Adjustment Factor Module:																				
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																			
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >																			
DelAdjFctr:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		

EPAP + GP Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.28	0.39	0.39	0.07	0.18	0.18	0.16	0.26	0.26	0.17	0.26	0.26
ArrivalType:	4			4			4			4		
ProgFactor:	0.94	0.90	0.96	1.00	0.97	0.96	0.97	0.98	0.98	0.99	0.95	0.95
Q1:	7.1	10.0	15.4	3.1	5.2	3.1	4.8	11.1	11.1	7.2	7.3	7.3
UpstreamVC:	0.00	0.00	0.00	0.25	0.25	0.25	0.71	0.71	0.71	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.98	0.98	0.98	0.64	0.64	0.64	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	0.20	0.37	0.34	0.22	0.30	0.30	1.00	1.00	1.00
Q2:	1.6	2.1	5.6	1.1	0.6	0.3	0.4	2.0	2.0	4.3	1.7	1.7
HCM2KQueue:	8.8	12.1	21.0	4.1	5.9	3.4	5.2	13.1	13.1	11.4	9.0	9.0
70th%Factor:	1.18	1.17	1.16	1.19	1.19	1.19	1.19	1.17	1.17	1.18	1.18	1.18
HCM2k70thQ:	10.4	14.2	24.3	4.9	7.0	4.0	6.2	15.4	15.4	13.4	10.6	10.6
85th%Factor:	1.52	1.50	1.45	1.56	1.55	1.57	1.55	1.49	1.49	1.51	1.52	1.52
HCM2k85thQ:	13.4	18.2	30.4	6.5	9.1	5.3	8.1	19.6	19.6	17.2	13.7	13.7
90th%Factor:	1.66	1.62	1.54	1.73	1.70	1.74	1.71	1.61	1.61	1.63	1.66	1.66
HCM2k90thQ:	14.5	19.6	32.3	7.2	10.0	5.8	8.9	21.1	21.1	18.6	14.9	14.9
95th%Factor:	1.87	1.81	1.69	1.98	1.93	2.00	1.95	1.79	1.79	1.82	1.86	1.86
HCM2k95thQ:	16.4	21.9	35.4	8.2	11.3	6.7	10.1	23.5	23.5	20.8	16.7	16.7
98th%Factor:	2.21	2.09	1.90	2.43	2.34	2.47	2.37	2.06	2.06	2.12	2.20	2.20
HCM2k98thQ:	19.4	25.4	39.8	10.1	13.7	8.3	12.3	27.1	27.1	24.2	19.8	19.8

EPAP + GP Alt PM Pk Hr

Future Queue Length Report (feet)

Node	Intersection	Northbound L	-- T	-- R	Southbound L	-- T	-- R	Eastbound L	-- T	-- R	Westbound L	-- T	-- R
#3	[HCM2k95thQ]:	515	23	77	36	611	611	265	987	588	171	924	924
#4	[HCM2k95thQ]:	404	102	149	32	452	452	144	787	787	281	595	2
#5	[HCM2k95thQ]:	97	585	1067	334	458	131	248	1327	23	1067	731	42
#6	[HCM2k95thQ]:	28	523	523	285	315	315	229	229	229	606	606	606
#7	[HCM2k95thQ]:	0	65	65	39	0	39	22	20	0	60	17	17
#8	[HCM2k95thQ]:	1045	191	525	180	346	570	674	1146	1031	646	1069	35
#9	[HCM2k95thQ]:	917	896	896	123	113	113	11	1468	1468	1001	200	200
#10	[HCM2k95thQ]:	249	0	169	40	0	35	10	358	358	275	67	67
#11	[HCM2k95thQ]:	224	0	0	23	0	225	179	207	19	0	415	4
#14	[2Way95thQ]:	xxxx	xxxx	xxxx	38.0	38.0	xxxx	xxxx	xxxx	xxxx	21.9	xxxx	50.2
#15	[2Way95thQ]:	4.6	4.6	xxxx	xxxx	xxxx	xxxx	710	xxxx	5.3	xxxx	xxxx	xxxx
#16	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#17	[HCM2k95thQ]:	176	121	222	46	118	12	23	220	176	232	103	103
#18	[HCM2k95thQ]:	105	617	194	300	307	23	127	38	128	243	25	394
#19	[HCM2k95thQ]:	238	89	249	153	82	141	200	182	248	274	193	221
#20	[2Way95thQ]:	xxxx	112	112	120	120	xxxx	xxxx	xxxx	xxxx	24.7	xxxx	xxxx
#21	[2Way95thQ]:	14.6	14.6	xxxx	xxxx	xxxx	xxxx	69.7	xxxx	204	xxxx	xxxx	xxxx
#24	[HCM2k95thQ]:	279	320	320	127	510	510	146	146	166	275	35	35
#25	[HCM2k95thQ]:	111	492	48	177	306	306	194	268	268	263	233	233
#26	[HCM2k95thQ]:	423	490	226	202	361	351	404	497	241	284	419	148
#27	[HCM2k95thQ]:	410	547	885	205	284	168	253	587	587	519	418	418

EPAP + GP Alt PM Pk Hr Mitigated

Scenario Report

Scenario:	EPAP + GP Alt PM
Command:	EPAP + GP Alt PM
Volume:	EPAP PM
Geometry:	EPAP GP Alt
Impact Fee:	Default Impact Fee
Trip Generation:	PM Pk Hr
Trip Distribution:	EPAP PM
Paths:	EPAP GP Alt
Routes:	Default Route
Configuration:	Default Configuration

EPAP + GP Alt PM Pk Hr Mitigated

Trip Generation Report

Forecast for PM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	0.00	ElemSchStudent	0.07	0.08	0	0	0	0.0
1	Village West	0.00	Tra Vigne SFDU	0.51	0.30	0	0	0	0.0
1	Village West	1646.00	GP Alt SFDU	0.48	0.28	790	461	1251	51.7
1	Village West	130.68	GP Alt Com KSF	2.63	2.85	344	372	716	29.6
1	Village West	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
1	Village West	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
1	Village West	232.00	GP Alt MFDU	0.41	0.22	95	51	146	6.0
1	Village West	0.00	Tra V Internal	-64.00	-64.00	0	0	0	0.0
1	Village West	1.00	GP Alt Interna	-76.00	-76.00	-76	-76	-152	-6.3
1	Village West	1.00	GP Alt Pass-By	-106.00	-111.00	-106	-111	-217	-9
	Zone 1 Subtotal					1047	697	1744	72.0
2	Village East	0.00	Tra Vigne SFDU	0.51	0.30	0	0	0	0.0
2	Village East	774.00	GP Alt SFDU	0.48	0.28	372	217	589	24.3
2	Village East	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
2	Village East	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
	Zone 2 Subtotal					372	217	589	24.3
4	Industrial	406.94	Indust KSF	0.05	0.17	20	69	89	3.7
	Zone 4 Subtotal					20	69	89	3.7
TOTAL						1439	983	2422	100.0

EPAP + GP Alt PM Pk Hr Mitigated

Trip Distribution Report

Percent Of Trips EPAP PM

Zone	To Gates 1	2	5	6	8	9	10	11	14	15	16
1	2.0	1.0	2.0	4.0	7.0	2.0	3.0	3.0	1.0	3.0	8.0
2	2.0	1.0	2.0	4.0	7.0	2.0	3.0	3.0	1.0	3.0	8.0
4	2.0	1.0	2.0	4.0	7.0	2.0	3.0	3.0	1.0	3.0	8.0

Zone	To Gates 17	18	19	20	22	23
1	2.0	3.0	32.0	5.0	2.0	20.0
2	2.0	3.0	32.0	5.0	2.0	20.0
4	2.0	3.0	32.0	5.0	2.0	20.0

EPAP + GP Alt PM Pk Hr Mitigated

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	C	25.8	0.745	C	26.4	0.788	+ 0.598 D/V
# 5 Eight Mile & Lower Sacto Rd	C	33.8	0.792	D	48.0	0.980	+14.248 D/V
# 8 Eight Mile Rd & West Ln	D	35.4	0.836	D	50.4	0.930	+14.944 D/V
# 9 Eight Mile Road & Ham Lane	A	2.6	0.318	D	51.8	1.015	+49.226 D/V

EPAP + GP Alt PM Pk Hr Mitigated

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]

EPAP + GP Alt PM Pk Hr Mitigated

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.788
Loss Time (sec):	12	Average Delay (sec/veh):	26.4
Optimal Cycle:	74	Level Of Service:	C

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	1 0	1	1 0	2 0	1	1 0	1 1	0
Volume Module:	PM Peak Hour											
Base Vol:	422	20	49	18	61	219	174	1454	583	73	1229	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	422	20	49	18	61	219	174	1454	583	73	1229	5
Added Vol:	0	0	14	0	0	0	0	86	0	10	59	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	422	20	63	18	61	219	174	1540	583	83	1288	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	459	22	68	20	66	238	189	1674	634	90	1400	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	459	22	68	20	66	238	189	1674	634	90	1400	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	459	22	68	20	66	238	189	1674	634	90	1400	5
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.98	0.83	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.99	0.01
Final Sat.:	3432	1862	1583	1769	1862	1583	1769	3538	1583	1769	3521	14
Capacity Analysis Module:												
Vol/Sat:	0.13	0.01	0.04	0.01	0.04	0.15	0.11	0.47	0.40	0.05	0.40	0.40
Crit Moves:	****				****			****		****		
Green/Cycle:	0.17	0.17	0.17	0.04	0.05	0.19	0.14	0.60	0.60	0.06	0.52	0.52
Volume/Cap:	0.79	0.07	0.25	0.25	0.79	0.81	0.76	0.79	0.67	0.79	0.76	0.76
Delay/Veh:	46.9	34.9	36.4	48.0	85.0	54.1	54.0	17.2	15.1	75.7	20.7	20.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.9	34.9	36.4	48.0	85.0	54.1	54.0	17.2	15.1	75.7	20.7	20.7
LOS by Move:	D	C	D	D	F	D	D	B	B	E	C	C
HCM2k95thQ:	417	28	97	44	188	427	247	601	362	145	644	644

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt PM Pk Hr Mitigated

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	1	0 1	1	0	1	0 1	1	0	2	0 1	1	0	1	1 0
Lane Group:	L		T	R	L		T	R	L		T	R	L		RT	RT
#LnsInGrps:	2		1	1	1		1	1	1		2	1	1		2	2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	0.95	
Fnl Sat Adj:	0.90	0.98	0.83		0.93	0.98	0.83		0.93	0.93	0.83		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + GP Alt PM Pk Hr Mitigated

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.17	0.17	0.17		0.04	0.05	0.19		0.14	0.60	0.60		0.06	0.52	0.52	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.93	0.95		0.99	1.00	0.98		0.98	0.71	0.64		0.99	0.81	0.81	
Q1:	6.2	0.5	1.6		0.5	1.8	6.2		5.0	13.2	7.5		2.5	13.2	13.2	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		1.02	1.02	1.02		0.70	0.70	0.70	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.09	0.09	0.09		0.65	0.65	0.65	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.03	0.07	0.06		0.13	0.47	0.47	
Q2:	2.8	0.1	0.3		0.3	2.0	3.0		0.1	0.3	0.1		0.4	1.4	1.4	
HCM2KQueue:	8.9	0.5	1.9		0.8	3.8	9.2		5.1	13.5	7.7		2.9	14.6	14.6	
70th%Factor:	1.18	1.20	1.20		1.20	1.19	1.18		1.19	1.17	1.18		1.19	1.17	1.17	
HCM2k70thQ:	10.6	0.7	2.3		1.0	4.5	10.8		6.0	15.8	9.1		3.4	17.1	17.1	
85th%Factor:	1.52	1.59	1.58		1.59	1.56	1.52		1.55	1.49	1.53		1.57	1.48	1.48	
HCM2k85thQ:	13.6	0.9	3.0		1.3	5.9	14.0		7.9	20.1	11.7		4.5	21.7	21.7	
90th%Factor:	1.66	1.79	1.76		1.78	1.73	1.65		1.71	1.60	1.67		1.75	1.59	1.59	
HCM2k90thQ:	14.8	1.0	3.3		1.5	6.6	15.2		8.7	21.6	12.8		5.0	23.2	23.2	
95th%Factor:	1.87	2.08	2.04		2.07	1.99	1.86		1.95	1.78	1.89		2.01	1.77	1.77	
HCM2k95thQ:	16.7	1.1	3.9		1.7	7.5	17.1		9.9	24.1	14.5		5.8	25.8	25.8	
98th%Factor:	2.20	2.66	2.56		2.64	2.45	2.19		2.38	2.05	2.25		2.50	2.03	2.03	
HCM2k98thQ:	19.7	1.5	4.9		2.2	9.3	20.1		12.0	27.7	17.3		7.2	29.6	29.6	

EPAP + GP Alt PM Pk Hr Mitigated

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.980
Loss Time (sec):	12	Average Delay (sec/veh):	48.0
Optimal Cycle:	166	Level Of Service:	D

Street Name:	Lower Sacramento Road							Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R	
Control:	Protected			Protected			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	2	0 1	0 1	1	0 1	0 1	1	0 2	0 1	2	0 2	0 1	
Volume Module:	PM Peak Hour												
Base Vol:	49	372	339	61	334	112	98	1001	22	375	1111	42	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Initial Bse:	49	372	339	61	334	112	98	1001	22	375	1111	42	
Added Vol:	0	0	115	29	0	0	0	144	0	79	98	20	
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	
Initial Fut:	49	372	454	90	334	112	98	1145	22	454	1209	62	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
PHF Volume:	53	404	493	98	363	122	107	1245	24	493	1314	67	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	53	404	493	98	363	122	107	1245	24	493	1314	67	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
FinalVolume:	53	404	493	98	363	122	107	1245	24	493	1314	67	
Saturation Flow Module:													
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Adjustment:	0.90	0.98	0.83	0.93	0.98	0.83	0.93	0.93	0.83	0.90	0.93	0.83	
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	
Final Sat.:	3432	1862	1583	1769	1862	1583	1769	3538	1583	3432	3538	1583	
Capacity Analysis Module:													
Vol/Sat:	0.02	0.22	0.31	0.06	0.19	0.08	0.06	0.35	0.02	0.14	0.37	0.04	
Crit Moves:			****	****				****		****			
Green/Cycle:	0.03	0.32	0.32	0.06	0.35	0.35	0.07	0.36	0.36	0.15	0.44	0.44	
Volume/Cap:	0.56	0.68	0.98	0.98	0.56	0.22	0.85	0.98	0.04	0.98	0.85	0.10	
Delay/Veh:	55.5	33.0	68.7	130.6	27.6	23.3	86.1	52.3	20.9	77.4	30.3	16.7	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
AdjDel/Veh:	55.5	33.0	68.7	130.6	27.6	23.3	86.1	52.3	20.9	77.4	30.3	16.7	
LOS by Move:	E	C	E	F	C	C	F	D	C	E	C	B	
HCM2k95thQ:	87	506	877	293	401	117	271	1072	21	557	866	49	

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt PM Pk Hr Mitigated

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 1	0 1		1	0 1	0 1		1	0 2	0 1		2	0 2	0 1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	1	1		1	1	1		1	2	1		2	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		0.97	0.95	1.00	
Fnl Sat Adj:	0.90	0.98	0.83		0.93	0.98	0.83		0.93	0.93	0.83		0.90	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + GP Alt PM Pk Hr Mitigated

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.03	0.32	0.32	0.06	0.35	0.35	0.07	0.36	0.36	0.15	0.44	0.44
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.93	0.99	1.00	0.90	0.85	1.00	0.99	0.82	1.00	0.93	0.75
Q1:	0.8	9.1	13.5	2.7	7.3	2.0	2.9	17.9	0.4	7.0	16.0	0.8
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.9	2.0	7.3	3.4	1.2	0.3	2.7	8.3	0.0	5.3	4.5	0.1
HCM2KQueue:	1.7	11.1	20.8	6.1	8.6	2.3	5.6	26.1	0.4	12.4	20.5	0.9
70th%Factor:	1.20	1.18	1.16	1.19	1.18	1.19	1.19	1.15	1.20	1.17	1.16	1.20
HCM2k70thQ:	2.0	13.0	24.1	7.2	10.1	2.8	6.6	30.1	0.5	14.5	23.7	1.1
85th%Factor:	1.58	1.51	1.45	1.54	1.53	1.58	1.55	1.43	1.60	1.50	1.45	1.59
HCM2k85thQ:	2.7	16.7	30.1	9.4	13.1	3.6	8.7	37.3	0.6	18.5	29.7	1.5
90th%Factor:	1.77	1.63	1.54	1.70	1.66	1.76	1.70	1.51	1.79	1.62	1.54	1.78
HCM2k90thQ:	3.0	18.1	32.0	10.3	14.2	4.1	9.5	39.4	0.7	20.0	31.6	1.7
95th%Factor:	2.05	1.82	1.69	1.93	1.87	2.03	1.94	1.64	2.09	1.80	1.69	2.07
HCM2k95thQ:	3.5	20.2	35.1	11.7	16.0	4.7	10.9	42.9	0.8	22.3	34.6	1.9
98th%Factor:	2.58	2.13	1.90	2.33	2.22	2.54	2.35	1.83	2.67	2.09	1.91	2.63
HCM2k98thQ:	4.4	23.6	39.5	14.2	19.0	5.9	13.2	47.9	1.1	25.8	39.0	2.5

EPAP + GP Alt PM Pk Hr Mitigated

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.930
Loss Time (sec):	12	Average Delay (sec/veh):	50.4
Optimal Cycle:	126	Level Of Service:	D

Street Name:	West Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:	PM Peak Hour											
Base Vol:	528	385	84	14	320	204	264	728	458	68	865	3
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	528	385	84	14	320	204	264	728	458	68	865	3
Added Vol:	0	0	333	46	0	0	0	288	0	230	197	31
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	528	385	417	60	320	204	264	1016	458	298	1062	34
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	574	418	453	65	348	222	287	1104	498	324	1154	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	574	418	453	65	348	222	287	1104	498	324	1154	37
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	574	418	453	65	348	222	287	1104	498	324	1154	37
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3432	3538	1583	1769	3538	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.17	0.12	0.29	0.04	0.10	0.14	0.16	0.31	0.31	0.18	0.33	0.02
Crit Moves:			****	****				****		****		
Green/Cycle:	0.19	0.31	0.31	0.04	0.16	0.16	0.18	0.34	0.34	0.20	0.36	0.36
Volume/Cap:	0.88	0.38	0.93	0.93	0.62	0.88	0.92	0.93	0.94	0.93	0.92	0.07
Delay/Veh:	53.2	27.4	58.1	131.1	41.4	70.0	70.9	44.8	56.6	70.3	41.5	21.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.2	27.4	58.1	131.1	41.4	70.0	70.9	44.8	56.6	70.3	41.5	21.3
LOS by Move:	D	C	E	F	D	E	E	D	E	E	D	C
HCM2k95thQ:	454	225	672	215	294	450	557	904	820	514	826	31

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt PM Pk Hr Mitigated

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0	1	1	0	2	0	1	1	0	2	0	1	1
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	2	1		1	2	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.90	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + GP Alt PM Pk Hr Mitigated

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.19	0.31	0.31		0.04	0.16	0.16		0.18	0.34	0.34		0.20	0.36	0.36	
ArrivalType:	4				4				4				4			
ProgFactor:	0.99	0.89	0.98		1.00	0.97	0.99		0.99	0.98	0.98		0.99	0.97	0.82	
Q1:	7.9	4.3	12.0		1.8	4.6	6.0		7.8	15.3	13.2		8.8	15.7	0.6	
UpstreamVC:	0.41	0.41	0.41		0.00	0.00	0.00		0.00	0.00	0.00		0.46	0.46	0.46	
UpstreamAdj:	0.92	0.92	0.92		0.00	0.00	0.00		0.00	0.00	0.00		0.89	0.89	0.89	
EarlyArrAdj:	0.35	0.48	0.44		1.00	1.00	1.00		1.00	1.00	1.00		0.35	0.51	0.46	
Q2:	1.9	0.3	3.3		2.6	1.5	3.8		4.6	6.2	6.1		2.5	3.7	0.0	
HCM2KQueue:	9.8	4.6	15.3		4.4	6.1	9.7		12.4	21.5	19.2		11.3	19.4	0.6	
70th%Factor:	1.18	1.19	1.17		1.19	1.19	1.18		1.17	1.16	1.16		1.18	1.16	1.20	
HCM2k70thQ:	11.6	5.4	17.9		5.2	7.2	11.5		14.5	24.9	22.3		13.3	22.5	0.7	
85th%Factor:	1.52	1.56	1.48		1.56	1.54	1.52		1.50	1.45	1.46		1.51	1.46	1.59	
HCM2k85thQ:	14.9	7.1	22.6		6.8	9.4	14.8		18.5	31.1	28.0		17.0	28.2	0.9	
90th%Factor:	1.64	1.72	1.59		1.72	1.69	1.65		1.62	1.54	1.55		1.63	1.55	1.79	
HCM2k90thQ:	16.2	7.9	24.3		7.5	10.3	16.0		20.0	33.0	29.9		18.4	30.1	1.1	
95th%Factor:	1.85	1.97	1.76		1.97	1.93	1.85		1.80	1.68	1.71		1.82	1.70	2.08	
HCM2k95thQ:	18.2	9.0	26.9		8.6	11.8	18.0		22.3	36.2	32.8		20.6	33.0	1.2	
98th%Factor:	2.17	2.40	2.01		2.41	2.33	2.17		2.09	1.89	1.93		2.12	1.93	2.66	
HCM2k98thQ:	21.3	11.0	30.7		10.6	14.2	21.1		25.8	40.7	37.1		23.9	37.3	1.6	

EPAP + GP Alt PM Pk Hr Mitigated

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	1.015
Loss Time (sec):	12	Average Delay (sec/veh):	51.8
Optimal Cycle:	180	Level Of Service:	D

Street Name:	Ham Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0
Volume Module:PM Peak Hour												
Base Vol:	0	0	0	13	0	13	6	726	0	0	851	20
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	13	0	13	6	726	0	0	851	20
Added Vol:	333	4	300	7	5	0	0	214	452	416	125	4
Pass-By:	56	0	55	0	0	0	0	-53	53	53	-53	0
Initial Fut:	389	4	355	20	5	13	6	887	505	469	923	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	423	4	386	22	5	14	7	964	549	510	1003	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	423	4	386	22	5	14	7	964	549	510	1003	26
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	423	4	386	22	5	14	7	964	549	510	1003	26
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.83	0.83	0.93	0.87	0.87	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	1.00	0.01	0.99	1.00	0.28	0.72	1.00	2.00	1.00	1.00	1.95	0.05
Final Sat.:	1769	18	1569	1769	461	1200	1769	3538	1583	1769	3434	89
Capacity Analysis Module:												
Vol/Sat:	0.24	0.25	0.25	0.01	0.01	0.01	0.00	0.27	0.35	0.29	0.29	0.29
Crit Moves:		****		****					****	****		
Green/Cycle:	0.24	0.24	0.24	0.01	0.01	0.01	0.01	0.34	0.34	0.28	0.62	0.62
Volume/Cap:	0.99	1.02	1.02	1.02	0.99	0.99	0.47	0.80	1.02	1.02	0.47	0.47
Delay/Veh:	77.3	87.7	87.7	248.8	245	244.5	72.8	33.6	75.5	79.8	10.5	10.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	77.3	87.7	87.7	248.8	245	244.5	72.8	33.6	75.5	79.8	10.5	10.5
LOS by Move:	E	F	F	F	F	F	E	C	E	E	B	B
HCM2k95thQ:	795	782	782	115	106	106	12	612	894	840	242	242

Note: Queue reported is the distance per lane in feet.

EPAP + GP Alt PM Pk Hr Mitigated

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	1 0	1	0	0	1 0	1	0	2	0 1	1	0	1	1 0
Lane Group:	L		RT	RT	L		RT	RT	L		T	R	L		RT	RT
#LnsInGrps:	1		1	1	1		1	1	1		2	1	1		2	2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1		xxxx	xxxx	1		xxxx	xxxx	1		xxxx	xxxx	1		xxxx	xxxx
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Hev Veh Adj:	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98
Grade Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Parking Adj:	xxxx	1.00		1.00	xxxx	1.00		1.00	xxxx	xxxx		1.00	xxxx	1.00		1.00
Bus Stp Adj:	xxxx	1.00		1.00	xxxx	1.00		1.00	xxxx	xxxx		1.00	xxxx	1.00		1.00
Area Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
RT Adj:	xxxx	0.85		0.85	xxxx	0.89		0.89	xxxx	xxxx		0.85	xxxx	1.00		1.00
LT Adj:	0.95	xxxx		xxxxx	0.95	xxxx		xxxxx	0.95	xxxx		xxxxx	0.95	xxxx		xxxxx
PedBike Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
HCM Sat Adj:	0.93	0.83		0.83	0.93	0.87		0.87	0.93	0.98		0.83	0.93	0.98		0.98
Usr Sat Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Sat Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.95		1.00	1.00	0.95		0.95
Fnl Sat Adj:	0.93	0.83		0.83	0.93	0.87		0.87	0.93	0.93		0.83	0.93	0.93		0.93
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00

EPAP + GP Alt PM Pk Hr Mitigated

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.24	0.24	0.24	0.01	0.01	0.01	0.01	0.34	0.34	0.28	0.62	0.62
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.54	0.54
Q1:	11.7	10.8	10.8	0.6	0.5	0.5	0.2	12.1	15.2	14.2	4.4	4.4
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.53	0.53	0.53
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.85	0.85	0.84	0.84	0.84
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.05	0.48	0.43	0.41	0.67	0.67
Q2:	6.9	7.4	7.4	1.7	1.5	1.5	0.0	1.7	6.0	5.6	0.6	0.6
HCM2KQueue:	18.6	18.2	18.2	2.3	2.1	2.1	0.2	13.8	21.2	19.8	4.9	4.9
70th%Factor:	1.16	1.16	1.16	1.19	1.19	1.19	1.20	1.17	1.16	1.16	1.19	1.19
HCM2k70thQ:	21.6	21.2	21.2	2.7	2.5	2.5	0.3	16.1	24.6	22.9	5.9	5.9
85th%Factor:	1.46	1.46	1.46	1.58	1.58	1.58	1.60	1.49	1.45	1.46	1.55	1.55
HCM2k85thQ:	27.1	26.6	26.6	3.6	3.3	3.3	0.4	20.5	30.7	28.7	7.7	7.7
90th%Factor:	1.56	1.56	1.56	1.76	1.76	1.76	1.80	1.60	1.54	1.55	1.71	1.71
HCM2k90thQ:	28.9	28.4	28.4	4.0	3.7	3.7	0.4	22.0	32.6	30.6	8.5	8.5
95th%Factor:	1.71	1.72	1.72	2.03	2.03	2.03	2.09	1.78	1.68	1.70	1.96	1.96
HCM2k95thQ:	31.8	31.3	31.3	4.6	4.3	4.3	0.5	24.5	35.7	33.6	9.7	9.7
98th%Factor:	1.94	1.95	1.95	2.54	2.55	2.55	2.68	2.05	1.90	1.92	2.38	2.38
HCM2k98thQ:	36.0	35.4	35.4	5.8	5.3	5.3	0.6	28.2	40.2	37.9	11.8	11.8

EPAP + GP Alt PM Pk Hr Mitigated

Future Queue Length Report (feet)

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
#3	[HCM2k95thQ]:	417	28	97	44	188	427	247	601	362	145	644	644
#5	[HCM2k95thQ]:	87	506	877	293	401	117	271	1072	21	557	866	49
#8	[HCM2k95thQ]:	454	225	672	215	294	450	557	904	820	514	826	31
#9	[HCM2k95thQ]:	795	782	782	115	106	106	12	612	894	840	242	242

EPAP No Project AM Pk Hr

Scenario Report

Scenario:	EPAP No Proj AM
Command:	EPAP No Proj AM
Volume:	EPAP AM
Geometry:	EPAP No Proj
Impact Fee:	Default Impact Fee
Trip Generation:	AM Pk Hr
Trip Distribution:	EPAP AM
Paths:	EPAP No Build
Routes:	Default Route
Configuration:	Default Configuration

EPAP No Project AM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	E	57.2	1.021	E	57.2	1.021	+ 0.000 D/V
# 4 Eight Mile Rd & Davis Rd	C	34.4	0.828	C	34.4	0.828	+ 0.000 D/V
# 5 Eight Mile & Lower Sacto Rd	D	40.9	0.920	D	40.9	0.920	+ 0.000 D/V
# 6 West Lane & Armstrong Road	C	32.3	0.636	C	32.3	0.636	+ 0.000 D/V
# 7 West Lane & Ham Lane	A	8.7	0.273	A	8.7	0.273	+ 0.000 D/V
# 8 Eight Mile Rd & West Ln	E	60.6	0.995	E	60.6	0.995	+ 0.000 D/V
# 9 Eight Mile Road & Ham Lane	D	32.6	0.176	D	32.6	0.176	+ 0.000 D/V
# 10 Eight Mile & Leach Rd/St J	D	27.5	0.055	D	27.5	0.055	+ 0.000 D/V
# 11 Eight Mile & MickeGrove/Holman	A	1.3	0.277	A	1.3	0.277	+ 0.000 D/V
# 14 SR99 W Front & SB Ramps 8 Mile	B	11.3	0.332	B	11.3	0.332	+ 0.000 D/V
# 15 SR99 E Front & NB Ramps 8 Mile	C	20.2	0.373	C	20.2	0.373	+ 0.000 D/V
# 17 Holman & Lt Col Mark Taylor	C	30.0	0.338	C	30.0	0.338	+ 0.000 D/V
# 18 Morada Lane & West Lane	C	28.2	0.506	C	28.2	0.506	+ 0.000 D/V
# 19 Morada Lane & Holman Road	D	35.0	0.583	D	35.0	0.583	+ 0.000 D/V
# 20 SR99 W Front & SB Ramps Morada	F	93.5	0.789	F	93.5	0.789	+ 0.000 D/V
# 21 SR99 E Front & NB Ramps Morada	F	69.2	1.054	F	69.2	1.054	+ 0.000 D/V
# 24 West Ln & West Ln Frontage Rd	C	21.0	0.593	C	21.0	0.593	+ 0.000 D/V
# 25 West Lane & Knickerbocker Dr	C	25.3	0.473	C	25.3	0.473	+ 0.000 D/V
# 26 West Lane & Hammer Lane	C	32.8	0.554	C	32.8	0.554	+ 0.000 D/V
# 27 Hammer Lane & Holman Road	D	37.9	0.876	D	37.9	0.876	+ 0.000 D/V

EPAP No Project AM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 9 Eight Mile Road & Ham Lane	No / No	??? / ???
# 10 Eight Mile & Leach Rd/St J	No / No	??? / ???
# 14 SR99 W Front & SB Ramps 8 Mile	No / No	??? / ???
# 15 SR99 E Front & NB Ramps 8 Mile	No / No	??? / ???
# 20 SR99 W Front & SB Ramps Morada	Yes / Yes	??? / ???
# 21 SR99 E Front & NB Ramps Morada	Yes / Yes	??? / ???

EPAP No Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #9 Eight Mile Road & Ham Lane

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1
Initial Vol:	0	0	0		20	0	8		7	772	0		0	632	24	
ApproachDel:	xxxxxx				32.6				xxxxxx				xxxxxx			

Approach[southbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=28]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1463]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP No Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #9 Eight Mile Road & Ham Lane

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	1	0
Initial Vol:	0		0		0	20		0		8	7	772			0	0	632			24

Major Street Volume: 1435
Minor Approach Volume: 28
Minor Approach Volume Threshold: 179

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP No Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #10 Eight Mile & Leach Rd/St J

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	0	0	1	0
Initial Vol:	0		0		0	5		0		6	5	908			0	0	650			6
ApproachDel:	xxxxxx					27.5					xxxxxx					xxxxxx				

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=11]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1580]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP No Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 Eight Mile & Leach Rd/St J

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	0	0	1	0
Initial Vol:	0		0		0	5		0		6	5	908			0	0	650			6

Major Street Volume: 1569
Minor Approach Volume: 11
Minor Approach Volume Threshold: 99 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP No Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	103		1		350	106		0		0		0		0	14		0		287
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					11.3				

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.9]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=301]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=861]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP No Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	103			1	350	106			0	0		0		0	14		0	287	

Major Street Volume: 560
Minor Approach Volume: 301
Minor Approach Volume Threshold: 475

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP No Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	152	197			0	0	301		214		96		0		50	0		0		0
ApproachDel:	xxxxxx					xxxxxx					20.2					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.8]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=146]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1010]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP No Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	152	197			0		0	301	214		96		0		50		0		0	0

Major Street Volume: 864
Minor Approach Volume: 146
Minor Approach Volume Threshold: 437

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP No Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #20 SR99 W Front & SB Ramps Morada

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	62	788			31	50			0		0	0		0	282		0		19
ApproachDel:	50.5					93.5					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=11.9]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=850]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1232]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=2.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=81]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1232]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP No Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #20 SR99 W Front & SB Ramps Morada

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0		62		788	31		50		0	0		0		0	282		0		19

Major Street Volume: 301
Minor Approach Volume: 850
Minor Approach Volume Threshold: 698

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP No Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #21 SR99 E Front & NB Ramps Morada

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0
Initial Vol:	230		451		0	0		511		2	95		0		214	0		0		0
ApproachDel:	xxxxxx					xxxxxx					69.2					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=5.9]
SUCCEED - Vehicle-hours >= 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=309]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1503]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP No Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #21 SR99 E Front & NB Ramps Morada

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 0	0 0	0 1	0	1 0	0 0	1	0 0	0 0	0
Initial Vol:	230	451	0	0	511	2	95	0	214	0	0	0

Major Street Volume: 1194
Minor Approach Volume: 309
Minor Approach Volume Threshold: 237

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.021
Loss Time (sec):	12	Average Delay (sec/veh):	57.2
Optimal Cycle:	180	Level Of Service:	E

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	0 1	0	1 0	2 0	1	1 0	1 1	0
Volume Module:	AM Peak Hour											
Base Vol:	836	46	103	5	26	229	169	983	326	80	1148	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	836	46	103	5	26	229	169	983	326	80	1148	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	909	50	112	5	28	249	184	1068	354	87	1248	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	909	50	112	5	28	249	184	1068	354	87	1248	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	909	50	112	5	28	249	184	1068	354	87	1248	15
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.85	0.85	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	2.00	1.00	1.00	1.00	0.10	0.90	1.00	2.00	1.00	1.00	1.98	0.02
Final Sat.:	3432	1862	1583	1769	164	1446	1769	3538	1583	1769	3488	43
Capacity Analysis Module:												
Vol/Sat:	0.26	0.03	0.07	0.00	0.17	0.17	0.10	0.30	0.22	0.05	0.36	0.36
Crit Moves:	****				****		****				****	
Green/Cycle:	0.26	0.41	0.41	0.02	0.17	0.17	0.10	0.39	0.39	0.06	0.35	0.35
Volume/Cap:	1.02	0.07	0.17	0.17	1.02	1.02	1.02	0.78	0.58	0.78	1.02	1.02
Delay/Veh:	72.6	17.9	18.9	51.0	102	101.7	117.6	29.6	25.4	74.4	63.5	63.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	72.6	17.9	18.9	51.0	102	101.7	117.6	29.6	25.4	74.4	63.5	63.5
LOS by Move:	E	B	B	D	F	F	F	C	C	E	E	E
HCM2k95thQ:	896	38	90	18	620	620	362	633	351	143	1047	1047

Note: Queue reported is the distance per lane in feet.

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 1	0 1		1	0 0	1 0		1	0 2	0 1		1	0 1	1 0	
Lane Group:	L	T	R		L	RT	RT		L	T	R		L	RT	RT	
#LnsInGrps:	2	1	1		1	1	1		1	2	1		1	2	2	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.87	0.87		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.85	0.85		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	0.95	
Fnl Sat Adj:	0.90	0.98	0.83		0.93	0.85	0.85		0.93	0.93	0.83		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.26	0.41	0.41		0.02	0.17	0.17		0.10	0.39	0.39		0.06	0.35	0.35	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.78	0.79		0.99	1.00	1.00		1.00	0.92	0.87		0.99	1.00	1.00	
Q1:	13.0	0.7	1.6		0.1	7.7	7.7		5.1	12.6	6.8		2.4	18.5	18.5	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.48	0.48	0.48		0.59	0.59	0.59	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.87	0.87	0.87		0.78	0.78	0.78	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.23	0.53	0.48		0.15	0.44	0.44	
Q2:	8.3	0.1	0.2		0.2	6.3	6.3		2.5	1.7	0.6		0.5	7.0	7.0	
HCM2KQueue:	21.3	0.7	1.8		0.3	14.0	14.0		7.6	14.3	7.4		2.8	25.5	25.5	
70th%Factor:	1.16	1.20	1.20		1.20	1.17	1.17		1.18	1.17	1.18		1.19	1.15	1.15	
HCM2k70thQ:	24.7	0.9	2.1		0.4	16.3	16.3		9.0	16.7	8.8		3.4	29.3	29.3	
85th%Factor:	1.45	1.59	1.58		1.60	1.49	1.49		1.53	1.49	1.53		1.57	1.43	1.43	
HCM2k85thQ:	30.8	1.2	2.8		0.6	20.8	20.8		11.7	21.2	11.4		4.5	36.4	36.4	
90th%Factor:	1.54	1.79	1.77		1.79	1.60	1.60		1.67	1.60	1.68		1.75	1.51	1.51	
HCM2k90thQ:	32.7	1.3	3.1		0.6	22.3	22.3		12.8	22.8	12.4		5.0	38.5	38.5	
95th%Factor:	1.68	2.08	2.04		2.09	1.78	1.78		1.89	1.77	1.90		2.01	1.65	1.65	
HCM2k95thQ:	35.8	1.5	3.6		0.7	24.8	24.8		14.5	25.3	14.0		5.7	41.9	41.9	
98th%Factor:	1.89	2.65	2.57		2.67	2.04	2.04		2.26	2.03	2.27		2.50	1.84	1.84	
HCM2k98thQ:	40.3	1.9	4.5		0.9	28.5	28.5		17.2	29.1	16.8		7.1	46.9	46.9	

EPAP No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.828
Loss Time (sec):	12	Average Delay (sec/veh):	34.4
Optimal Cycle:	84	Level Of Service:	C

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1 0 1	1	0	0 1 0	1	0	1 1 0	1	0	2 0 1
Volume Module:	AM Peak Hour											
Base Vol:	251	120	150	6	161	68	111	957	163	134	780	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	251	120	150	6	161	68	111	957	163	134	780	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	273	130	163	7	175	74	121	1040	177	146	848	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	273	130	163	7	175	74	121	1040	177	146	848	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	273	130	163	7	175	74	121	1040	177	146	848	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.94	0.94	0.93	0.91	0.91	0.93	0.93	0.83
Lanes:	1.00	1.00	1.00	1.00	0.70	0.30	1.00	1.71	0.29	1.00	2.00	1.00
Final Sat.:	1769	1862	1583	1769	1250	528	1769	2956	504	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.15	0.07	0.10	0.00	0.14	0.14	0.07	0.35	0.35	0.08	0.24	0.00
Crit Moves:	****				****			****		****		
Green/Cycle:	0.19	0.34	0.34	0.01	0.17	0.17	0.12	0.43	0.43	0.10	0.41	0.41
Volume/Cap:	0.83	0.20	0.30	0.30	0.83	0.83	0.59	0.83	0.83	0.83	0.59	0.01
Delay/Veh:	54.9	23.4	24.4	56.6	57.2	57.2	46.3	29.5	29.5	70.7	23.7	17.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.9	23.4	24.4	56.6	57.2	57.2	46.3	29.5	29.5	70.7	23.7	17.6
LOS by Move:	D	C	C	E	E	E	D	C	C	E	C	B
HCM2k95thQ:	480	123	164	28	453	453	166	699	699	321	447	5

Note: Queue reported is the distance per lane in feet.

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1	0	1 0 1	1	0	0 1 0	1	0	1 1 0	1	0	2 0 1
Lane Group:	L	T	R	L	RT	RT	L	RT	RT	L	T	R
#LnsInGrps:	1	1	1	1	1	1	1	2	2	1	2	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	0.96	0.96	xxxx	0.98	0.98	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.94	0.94	0.93	0.96	0.96	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Fnl Sat Adj:	0.93	0.98	0.83	0.93	0.94	0.94	0.93	0.91	0.91	0.93	0.93	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.19	0.34	0.34	0.01	0.17	0.17	0.12	0.43	0.43	0.10	0.41	0.41
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.85	0.86	1.00	0.99	0.99	0.98	0.92	0.92	0.99	0.86	0.77
Q1:	7.2	2.2	2.8	0.2	6.6	6.6	3.1	14.5	14.5	3.9	8.3	0.1
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.78	0.78	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.54	0.54	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.15	0.34	0.34	1.00	1.00	1.00
Q2:	3.3	0.3	0.4	0.4	3.2	3.2	0.2	1.5	1.5	2.8	1.4	0.0
HCM2KQueue:	10.5	2.4	3.3	0.5	9.8	9.8	3.3	16.0	16.0	6.7	9.7	0.1
70th%Factor:	1.18	1.19	1.19	1.20	1.18	1.18	1.19	1.17	1.17	1.18	1.18	1.20
HCM2k70thQ:	12.3	2.9	3.9	0.6	11.5	11.5	4.0	18.7	18.7	8.0	11.4	0.1
85th%Factor:	1.51	1.58	1.57	1.59	1.52	1.52	1.57	1.48	1.48	1.54	1.52	1.60
HCM2k85thQ:	15.8	3.8	5.1	0.9	14.9	14.9	5.2	23.6	23.6	10.3	14.7	0.1
90th%Factor:	1.64	1.75	1.74	1.79	1.65	1.65	1.74	1.58	1.58	1.69	1.65	1.80
HCM2k90thQ:	17.1	4.3	5.7	1.0	16.1	16.1	5.8	25.3	25.3	11.3	15.9	0.2
95th%Factor:	1.84	2.02	2.00	2.08	1.85	1.85	2.00	1.75	1.75	1.91	1.85	2.10
HCM2k95thQ:	19.2	4.9	6.5	1.1	18.1	18.1	6.7	28.0	28.0	12.8	17.9	0.2
98th%Factor:	2.15	2.53	2.48	2.66	2.17	2.17	2.47	1.99	1.99	2.30	2.18	2.69
HCM2k98thQ:	22.5	6.1	8.1	1.4	21.3	21.3	8.2	31.9	31.9	15.4	21.0	0.3

EPAP No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.920
Loss Time (sec):	12	Average Delay (sec/veh):	40.9
Optimal Cycle:	120	Level Of Service:	D

Street Name:	Lower Sacramento Road								Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	2	0	1	0 1	1	0	1	0 1	1	0	2	0 1	1	0	2	0 1
Volume Module:	AM Peak Hour															
Base Vol:	44	268	393		57	412	103		86	1020	21		311	814	61	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	44	268	393		57	412	103		86	1020	21		311	814	61	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	48	291	427		62	448	112		93	1109	23		338	885	66	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	48	291	427		62	448	112		93	1109	23		338	885	66	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	48	291	427		62	448	112		93	1109	23		338	885	66	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.90	0.98	0.83		0.93	0.98	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Lanes:	2.00	1.00	1.00		1.00	1.00	1.00		1.00	2.00	1.00		1.00	2.00	1.00	
Final Sat.:	3432	1862	1583		1769	1862	1583		1769	3538	1583		1769	3538	1583	
Capacity Analysis Module:																
Vol/Sat:	0.01	0.16	0.27		0.04	0.24	0.07		0.05	0.31	0.01		0.19	0.25	0.04	
Crit Moves:			****		****					****			****			
Green/Cycle:	0.02	0.29	0.29		0.04	0.31	0.31		0.10	0.34	0.34		0.21	0.45	0.45	
Volume/Cap:	0.77	0.53	0.92		0.92	0.77	0.23		0.55	0.92	0.04		0.92	0.55	0.09	
Delay/Veh:	91.8	30.6	57.7		129.7	37.1	25.6		47.1	43.0	22.1		66.5	20.4	15.7	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	91.8	30.6	57.7		129.7	37.1	25.6		47.1	43.0	22.1		66.5	20.4	15.7	
LOS by Move:	F	C	E		F	D	C		D	D	C		E	C	B	
HCM2k95thQ:	103	348	722		206	602	116		176	890	21		622	415	45	

Note: Queue reported is the distance per lane in feet.

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 1	0	1	1	0 1	0	1	1	0 2	0	1	1	0 2	0	1
Lane Group:	L	T		R	L	T		R	L	T		R	L	T		R
#LnsInGrps:	2	1		1	1	1		1	1	2		1	1	2		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.90	0.98	0.83		0.93	0.98	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.02	0.29	0.29		0.04	0.31	0.31		0.10	0.34	0.34		0.21	0.45	0.45	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.92	0.98		1.00	0.95	0.87		0.98	0.98	0.83		0.99	0.81	0.74	
Q1:		0.7	6.2	11.3		1.7	10.7	2.0		2.4	15.2	0.4		9.1	7.7	0.8
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:		1.3	1.1	5.3		2.5	2.8	0.3		1.1	5.9	0.0		4.9	1.2	0.1
HCM2KQueue:		2.0	7.3	16.6		4.2	13.5	2.3		3.5	21.1	0.4		14.0	8.9	0.9
70th%Factor:	1.20	1.18	1.17		1.19	1.17	1.19		1.19	1.16	1.20		1.17	1.18	1.20	
HCM2k70thQ:		2.4	8.7	19.4		5.0	15.8	2.7		4.2	24.5	0.5		16.4	10.5	1.0
85th%Factor:	1.58	1.53	1.47		1.56	1.49	1.58		1.57	1.45	1.60		1.49	1.52	1.59	
HCM2k85thQ:		3.2	11.2	24.5		6.5	20.1	3.6		5.5	30.6	0.6		20.9	13.5	1.4
90th%Factor:	1.76	1.68	1.57		1.72	1.60	1.76		1.74	1.54	1.79		1.60	1.66	1.78	
HCM2k90thQ:		3.6	12.3	26.2		7.2	21.6	4.0		6.1	32.5	0.7		22.4	14.7	1.6
95th%Factor:	2.04	1.90	1.74		1.98	1.78	2.03		1.99	1.69	2.09		1.78	1.87	2.07	
HCM2k95thQ:		4.1	13.9	28.9		8.3	24.1	4.6		7.1	35.6	0.8		24.9	16.6	1.8
98th%Factor:	2.56	2.27	1.98		2.43	2.05	2.54		2.46	1.90	2.67		2.04	2.20	2.63	
HCM2k98thQ:		5.2	16.6	32.9		10.1	27.7	5.8		8.7	40.1	1.1		28.6	19.6	2.3

EPAP No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.636
Loss Time (sec):	12	Average Delay (sec/veh):	32.3
Optimal Cycle:	52	Level Of Service:	C

Street Name:	West Lane						Armstrong Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	0	1	1	0	0	0	1!	0	0	0	0	1!	0	0
Volume Module:AM Peak Hour												
Base Vol:	4	387	76	203	525	33	45	172	5	60	97	96
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	387	76	203	525	33	45	172	5	60	97	96
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	4	421	83	221	571	36	49	187	5	65	105	104
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	421	83	221	571	36	49	187	5	65	105	104
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	421	83	221	571	36	49	187	5	65	105	104
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.91	0.91	0.93	0.92	0.92	0.97	0.97	0.97	0.92	0.92	0.92
Lanes:	1.00	1.67	0.33	1.00	1.88	0.12	0.20	0.78	0.02	0.24	0.38	0.38
Final Sat.:	1769	2883	566	1769	3299	207	373	1424	41	414	669	662
Capacity Analysis Module:												
Vol/Sat:	0.00	0.15	0.15	0.12	0.17	0.17	0.13	0.13	0.13	0.16	0.16	0.16
Crit Moves:		****		****				****			****	
Green/Cycle:	0.01	0.23	0.23	0.20	0.42	0.42	0.21	0.21	0.21	0.25	0.25	0.25
Volume/Cap:	0.41	0.64	0.64	0.64	0.41	0.41	0.64	0.64	0.64	0.64	0.64	0.64
Delay/Veh:	73.6	36.5	36.5	40.8	20.5	20.5	39.8	39.8	39.8	36.7	36.7	36.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	73.6	36.5	36.5	40.8	20.5	20.5	39.8	39.8	39.8	36.7	36.7	36.7
LOS by Move:	E	D	D	D	C	C	D	D	D	D	D	D
HCM2k95thQ:	29	375	375	334	279	279	355	355	355	381	381	381

Note: Queue reported is the distance per lane in feet.

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	1	0	1	1	0		1	0	1	1	0		0	0	1!	0	0		0	0	1!	0	0	
Lane Group:	L		RT		RT		L		RT		RT		LTR		LTR		LTR		LTR		LTR		LTR	
#LnsInGrps:	1		2		2		1		2		2		1		1		1		1		1		1	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:			8						8						8						8			
% Hev Veh:			2						2						2						2			
Grade:			0%						0%						0%						0%			
Parking/Hr:			No						No						No						No			
Bus Stp/Hr:			0						0						0						0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0						0						0						0			
ExclusiveRT:			Include						Include						Include						Include			
% RT Prtct:			0						0						0						0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx		xxxx			1	xxxx		xxxx			4		4		4		4		4		4	
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
Hev Veh Adj:	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98
Grade Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
Parking Adj:	xxxx	1.00		1.00		xxxx	xxxx	1.00		1.00		xxxx	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
Bus Stp Adj:	xxxx	1.00		1.00		xxxx	xxxx	1.00		1.00		xxxx	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
Area Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
RT Adj:	xxxx	0.98		0.98		xxxx	0.99			0.99		xxxx	1.00	1.00		1.00		0.95	0.95			0.95		0.95
LT Adj:	0.95	xxxx		xxxxx		0.95	xxxx			xxxxx		0.95	0.99	0.99		0.99		0.99	0.99			0.99		0.99
PedBike Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
HCM Sat Adj:	0.93	0.96		0.96		0.93	0.97			0.97		0.97	0.97	0.97		0.97		0.92	0.92			0.92		0.92
Usr Sat Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
MLF Sat Adj:	1.00	0.95		0.95		1.00	0.95			0.95		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
Fnl Sat Adj:	0.93	0.91		0.91		0.93	0.92			0.92		0.97	0.97	0.97		0.97		0.92	0.92			0.92		0.92
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.01	0.23	0.23	0.20	0.42	0.42	0.21	0.21	0.21	0.25	0.25	0.25
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.96	0.96	0.96	0.82	0.82	0.96	0.96	0.96	0.95	0.95	0.95
Q1:	0.1	6.3	6.3	5.4	5.1	5.1	5.9	5.9	5.9	6.5	6.5	6.5
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.4	1.6	1.6	1.6	0.7	0.7	1.6	1.6	1.6	1.6	1.6	1.6
HCM2KQueue:	0.6	7.9	7.9	7.0	5.8	5.8	7.5	7.5	7.5	8.1	8.1	8.1
70th%Factor:	1.20	1.18	1.18	1.18	1.19	1.19	1.18	1.18	1.18	1.18	1.18	1.18
HCM2k70thQ:	0.7	9.4	9.4	8.3	6.8	6.8	8.9	8.9	8.9	9.6	9.6	9.6
85th%Factor:	1.59	1.53	1.53	1.54	1.55	1.55	1.53	1.53	1.53	1.53	1.53	1.53
HCM2k85thQ:	0.9	12.2	12.2	10.8	8.9	8.9	11.5	11.5	11.5	12.4	12.4	12.4
90th%Factor:	1.79	1.67	1.67	1.68	1.70	1.70	1.68	1.68	1.68	1.67	1.67	1.67
HCM2k90thQ:	1.0	13.3	13.3	11.8	9.8	9.8	12.5	12.5	12.5	13.5	13.5	13.5
95th%Factor:	2.08	1.89	1.89	1.91	1.94	1.94	1.90	1.90	1.90	1.88	1.88	1.88
HCM2k95thQ:	1.2	15.0	15.0	13.4	11.2	11.2	14.2	14.2	14.2	15.2	15.2	15.2
98th%Factor:	2.66	2.24	2.24	2.28	2.34	2.34	2.26	2.26	2.26	2.24	2.24	2.24
HCM2k98thQ:	1.5	17.8	17.8	16.0	13.5	13.5	16.9	16.9	16.9	18.1	18.1	18.1

EPAP No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.273
Loss Time (sec):	9	Average Delay (sec/veh):	8.7
Optimal Cycle:	25	Level Of Service:	A

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Volume Module:	AM Peak Hour											
Base Vol:	1	2	30	34	6	32	4	461	0	14	612	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	2	30	34	6	32	4	461	0	14	612	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	1	2	33	37	7	35	4	501	0	15	665	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	2	33	37	7	35	4	501	0	15	665	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	2	33	37	7	35	4	501	0	15	665	20
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.86	0.86	0.86	0.80	0.80	0.80	0.93	0.93	0.95	0.93	0.93	0.93
Lanes:	0.03	0.06	0.91	0.48	0.08	0.44	1.00	2.00	0.00	1.00	1.94	0.06
Final Sat.:	49	98	1477	715	126	673	1769	3538	0	1769	3423	101
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.05	0.05	0.05	0.00	0.14	0.00	0.01	0.19	0.19
Crit Moves:					****		****				****	
Green/Cycle:	0.19	0.19	0.19	0.19	0.19	0.19	0.01	0.68	0.00	0.04	0.71	0.71
Volume/Cap:	0.12	0.12	0.12	0.27	0.27	0.27	0.27	0.21	0.00	0.21	0.27	0.27
Delay/Veh:	33.8	33.8	33.8	35.2	35.2	35.2	58.3	6.0	0.0	47.8	5.2	5.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.8	33.8	33.8	35.2	35.2	35.2	58.3	6.0	0.0	47.8	5.2	5.2
LOS by Move:	C	C	C	D	D	D	E	A	A	D	A	A
HCM2k95thQ:	47	47	47	108	108	108	22	58	0	34	55	55

Note: Queue reported is the distance per lane in feet.

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	0	0	1!	0	0	0	0	1! 0	0	1	0	1	1	0	1	0
Lane Group:	LTR	LTR	LTR		LTR	LTR	LTR		L	RT	RT	L	RT	RT		
#LnsInGrps:	1	1	1		1	1	1		1	2	2	1	2	2		
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12	12	12	12		
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	5	5	5		5	5	5		1 xxxx	xxxx		1 xxxx	xxxx			
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	xxxxx	1.00	1.00	1.00		
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	xxxxx	0.98	0.98	0.98		
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	xxxxx	1.00	1.00	1.00		
Parking Adj:	1.00	1.00	1.00		1.00	1.00	1.00		xxxx	1.00	xxxxx	xxxx	1.00	1.00		
Bus Stp Adj:	1.00	1.00	1.00		1.00	1.00	1.00		xxxx	1.00	xxxxx	xxxx	1.00	1.00		
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	xxxxx	1.00	1.00	1.00		
RT Adj:	0.88	0.88	0.88		0.94	0.94	0.94		xxxx	xxxx	xxxxx	xxxx	1.00	1.00		
LT Adj:	1.00	1.00	1.00		0.87	0.87	0.87		0.95	xxxx	xxxxx	0.95	xxxx	xxxxx		
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		
HCM Sat Adj:	0.86	0.86	0.86		0.80	0.80	0.80		0.93	0.98	1.00	0.93	0.98	0.98		
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	0.95	1.00	0.95	0.95		
Fnl Sat Adj:	0.86	0.86	0.86		0.80	0.80	0.80		0.93	0.93	0.95	0.93	0.93	0.93		
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00	1.00	1.00	1.00		

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Base Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	100	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	17.92	17.92	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	18.92	18.92	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	18.92	18.92	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	1	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	1	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	1	37	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	0.03	0.47	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	0.47	0.03	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	0.03	1.03	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	78	36	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	2.17	1.00	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	1.33	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	3.00	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	13.30	4.48	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	0.75	0.75	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	3.55	0.63	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	5.62	14.44	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	0.00	0.00	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	0.53	0.97	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	1.52	1.45	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	1.00	1.00	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	0.11	0.16	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	1.00	0.87	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	1.00	0.87	xxxxxx	xxxxxx

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.19	0.19	0.19	0.19	0.19	0.19	0.01	0.68	0.00	0.04	0.71	0.71
ArrivalType:		4			4			4			4	
ProgFactor:	0.93	0.93	0.93	0.94	0.94	0.94	1.00	0.31	1.00	0.99	0.19	0.19
Q1:	0.8	0.8	0.8	1.7	1.7	1.7	0.1	0.9	0.0	0.4	0.7	0.7
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Q2:	0.1	0.1	0.1	0.4	0.4	0.4	0.3	0.3	0.0	0.3	0.4	0.4
HCM2KQueue:	0.9	0.9	0.9	2.1	2.1	2.1	0.4	1.1	0.0	0.7	1.1	1.1
70th%Factor:	1.20	1.20	1.20	1.19	1.19	1.19	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	1.1	1.1	1.1	2.5	2.5	2.5	0.5	1.3	0.0	0.8	1.3	1.3
85th%Factor:	1.59	1.59	1.59	1.58	1.58	1.58	1.60	1.59	1.60	1.59	1.59	1.59
HCM2k85thQ:	1.4	1.4	1.4	3.3	3.3	3.3	0.7	1.8	0.0	1.0	1.7	1.7
90th%Factor:	1.78	1.78	1.78	1.76	1.76	1.76	1.79	1.78	1.80	1.79	1.78	1.78
HCM2k90thQ:	1.6	1.6	1.6	3.7	3.7	3.7	0.8	2.0	0.0	1.2	1.9	1.9
95th%Factor:	2.07	2.07	2.07	2.03	2.03	2.03	2.09	2.06	2.10	2.08	2.07	2.07
HCM2k95thQ:	1.9	1.9	1.9	4.3	4.3	4.3	0.9	2.3	0.0	1.4	2.2	2.2
98th%Factor:	2.63	2.63	2.63	2.55	2.55	2.55	2.67	2.62	2.70	2.65	2.62	2.62
HCM2k98thQ:	2.4	2.4	2.4	5.4	5.4	5.4	1.1	2.9	0.0	1.7	2.8	2.8

EPAP No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.995
Loss Time (sec):	12	Average Delay (sec/veh):	60.6
Optimal Cycle:	180	Level Of Service:	E

Street Name:	West Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	1 0	1	1 0	0 1	0
Volume Module:	AM Peak Hour											
Base Vol:	398	273	64	31	445	185	194	735	522	106	584	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	398	273	64	31	445	185	194	735	522	106	584	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	433	297	70	34	484	201	211	799	567	115	635	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	433	297	70	34	484	201	211	799	567	115	635	9
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	433	297	70	34	484	201	211	799	567	115	635	9
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.98	0.83	0.93	0.98	0.98
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	0.99	0.01
Final Sat.:	1769	3538	1583	1769	3538	1583	1769	1862	1583	1769	1833	25
Capacity Analysis Module:												
Vol/Sat:	0.24	0.08	0.04	0.02	0.14	0.13	0.12	0.43	0.36	0.07	0.35	0.35
Crit Moves:	****				****			****		****		
Green/Cycle:	0.25	0.31	0.31	0.07	0.14	0.14	0.13	0.43	0.43	0.07	0.37	0.37
Volume/Cap:	0.99	0.27	0.14	0.27	0.99	0.92	0.94	0.99	0.83	0.99	0.94	0.94
Delay/Veh:	79.4	25.9	24.9	45.2	82.5	83.2	86.0	58.7	33.7	128.6	50.8	50.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	79.4	25.9	24.9	45.2	82.5	83.2	86.0	58.7	33.7	128.6	50.8	50.8
LOS by Move:	E	C	C	D	F	F	F	E	C	F	D	D
HCM2k95thQ:	727	153	66	63	567	444	466	1273	726	237	903	903

Note: Queue reported is the distance per lane in feet.

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	2	0	1	1	0	2	0	1	1	0	1	0	1	0
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	2	1		1	2	1		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.98	0.83		0.93	0.98	0.98	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.25	0.31	0.31		0.07	0.14	0.14		0.13	0.43	0.43		0.07	0.37	0.37	
ArrivalType:	4				4				4				4			
ProgFactor:	1.00	0.88	0.86		0.98	1.00	1.00		1.00	1.00	0.92		1.00	0.98	0.98	
Q1:	12.0	2.9	1.2		0.9	7.1	5.5		5.8	22.0	12.8		3.2	16.8	16.8	
UpstreamVC:	0.17	0.17	0.17		0.00	0.00	0.00		0.00	0.00	0.00		0.23	0.23	0.23	
UpstreamAdj:	0.99	0.99	0.99		0.00	0.00	0.00		0.00	0.00	0.00		0.98	0.98	0.98	
EarlyArrAdj:	0.44	0.53	0.48		1.00	1.00	1.00		1.00	1.00	1.00		0.20	0.58	0.58	
Q2:	4.8	0.2	0.1		0.4	5.6	4.1		4.3	9.7	3.9		1.7	4.6	4.6	
HCM2KQueue:	16.7	3.0	1.3		1.2	12.6	9.6		10.1	31.8	16.7		4.9	21.5	21.5	
70th%Factor:	1.17	1.19	1.20		1.20	1.17	1.18		1.18	1.15	1.17		1.19	1.16	1.16	
HCM2k70thQ:	19.5	3.6	1.5		1.5	14.8	11.3		11.9	36.4	19.5		5.8	24.9	24.9	
85th%Factor:	1.47	1.57	1.59		1.59	1.50	1.52		1.51	1.40	1.47		1.56	1.45	1.45	
HCM2k85thQ:	24.6	4.8	2.0		1.9	18.9	14.5		15.3	44.6	24.6		7.5	31.1	31.1	
90th%Factor:	1.57	1.74	1.78		1.78	1.61	1.65		1.64	1.48	1.57		1.71	1.54	1.54	
HCM2k90thQ:	26.3	5.3	2.3		2.2	20.4	15.8		16.6	47.1	26.3		8.3	33.0	33.0	
95th%Factor:	1.74	2.01	2.06		2.06	1.80	1.85		1.84	1.60	1.74		1.96	1.68	1.68	
HCM2k95thQ:	29.1	6.1	2.6		2.5	22.7	17.8		18.6	50.9	29.0		9.5	36.1	36.1	
98th%Factor:	1.98	2.49	2.61		2.61	2.08	2.18		2.16	1.79	1.98		2.39	1.89	1.89	
HCM2k98thQ:	33.1	7.6	3.3		3.2	26.2	20.9		21.8	56.8	33.0		11.6	40.6	40.6	

EPAP No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: D[32.6]

Street Name:	Ham Lane									Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	1	0
Volume Module:	AM Peak Hour																			
Base Vol:	0	0	0		20	0		8	7	772	0		0	632		24				
Growth Adj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00				
Initial Bse:	0	0	0		20	0		8	7	772	0		0	632		24				
User Adj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00				
PHF Adj:	0.92	0.92	0.92		0.92	0.92		0.92	0.92	0.92	0.92		0.92	0.92		0.92				
PHF Volume:	0	0	0		22	0		9	8	839	0		0	687		26				
Reduct Vol:	0	0	0		0	0		0	0	0	0		0	0		0				
FinalVolume:	0	0	0		22	0		9	8	839	0		0	687		26				
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx		6.4	xxxx		6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
FollowUpTim:	xxxxx	xxxx	xxxxx		3.5	xxxx		3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx		1554	xxxx		700	713	xxxx	xxxxx		xxxx	xxxx	xxxxx					
Potent Cap.:	xxxx	xxxx	xxxxx		124	xxxx		439	887	xxxx	xxxxx		xxxx	xxxx	xxxxx					
Move Cap.:	xxxx	xxxx	xxxxx		124	xxxx		439	887	xxxx	xxxxx		xxxx	xxxx	xxxxx					
Volume/Cap:	xxxx	xxxx	xxxx		0.18	xxxx		0.02	0.01	xxxx	xxxx		xxxx	xxxx	xxxx					
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx		15.3	xxxx		1.5	0.6	xxxx	xxxxx		xxxx	xxxx	xxxxx					
Control Del:	xxxxx	xxxx	xxxxx		40.2	xxxx		13.4	9.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
LOS by Move:	*	*	*		E	*		B	A	*	*		*	*		*				
Movement:	LT -	LTR -	RT		LT -	LTR -		RT	LT -	LTR -	RT		LT -	LTR -		RT				
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx		xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx					
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx		xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx		xxxxx	9.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
Shared LOS:	*	*	*		*	*		*	A	*	*		*	*		*				
ApproachDel:	xxxxxx				32.6				xxxxxx				xxxxxx							
ApproachLOS:	*				D				*				*							

Note: Queue reported is the distance per lane in feet.

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HevVeh:	2%				2%				2%				2%			
Grade:	0%				0%				0%				0%			
Peds/Hour:	0				0				0				0			
Pedestrian Walk Speed: 4.00 feet/sec																
LaneWidth:	12 feet				12 feet				12 feet				12 feet			
Time Period: 0.25 hour																
Upstream Signals:																
Link Index:									#23							
Dist(miles):									0.250							
Speed (mph):									1.00							
SignalIndex:									#53							
Cycle Time:									100 secs							
InitVolume:									0	831						
Saturation:									0	3538						
ArrivalType:									0	4						
G/C:									0.00	0.94						
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection																
P:									0.000	1.253						
gq1:									0.00	-5.94						
gq2:									0.00	-2.71						
gq:									0.00	-8.65						
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons																
alpha:									0.550							
beta:									0.645							
ta (secs):									900.000							
F:									0.003							
f:									1.000	1.000						
vcmax:									0	-97						
vcg:									0	234						
vcmin:									1000	1000						
tp:									0.0	0.0						
p:									0.000							
*** Computation 3: Platoon Event Periods																
pdom/psubo:									0.000/0.000/Unconstrained							
*** Computation 4: Conflicting Flows During Each Unblocked Period																
InitCnflVol:	1559	1567	839	1554	1554	700	713	xxxxx	xxxxx	0	xxxxx	xxxxx				
AdjCnflVol:	1559	1567	839	1554	1554	700	713	xxxxx	xxxxx	0	xxxxx	xxxxx				
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx				
ConflictVol:	1559	1567	839	1554	1554	700	713	xxxxx	xxxxx	0	xxxxx	xxxxx				
*** Computation 5: Capacity for Subject Movement During Unblocked Period																
InitPotCap:	91	111	366	124	113	439	887	xxxxx	xxxxx	1623	xxxxx	xxxxx				
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx				
Potent Cap.:	91	111	366	124	113	439	887	xxxxx	xxxxx	1623	xxxxx	xxxxx				

EPAP No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St J

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: D[27.5]

Street Name:	Leach Road/Street J									Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	0	0	1	0
Volume Module:	AM Peak Hour																			
Base Vol:	0	0	0		5	0		6		5	908		0		0	650		6
Growth Adj:	1.00	1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00
Initial Bse:	0	0	0		5	0		6		5	908		0		0	650		6
User Adj:	1.00	1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00
PHF Adj:	0.92	0.92	0.92		0.92	0.92		0.92		0.92	0.92		0.92		0.92	0.92		0.92
PHF Volume:	0	0	0		5	0		7		5	987		0		0	707		7
Reduct Vol:	0	0	0		0	0		0		0	0		0		0	0		0
FinalVolume:	0	0	0		5	0		7		5	987		0		0	707		7
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx		6.4	6.5		6.2		4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
FollowUpTim:	xxxxx	xxxx	xxxxx		3.5	4.0		3.3		2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx		1708	1708		710		713	xxxx	xxxxx		xxxx	xxxx	xxxxx		
Potent Cap.:	xxxx	xxxx	xxxxx		100	91		434		887	xxxx	xxxxx		xxxx	xxxx	xxxxx		
Move Cap.:	xxxx	xxxx	xxxxx		100	90		434		887	xxxx	xxxxx		xxxx	xxxx	xxxxx		
Volume/Cap:	xxxx	xxxx	xxxx		0.05	0.00		0.02		0.01	xxxx	xxxx		xxxx	xxxx	xxxx		
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx		xxxx	xxxx		xxxxx		0.5	xxxx	xxxxx		xxxx	xxxx	xxxxx		
Control Del:	xxxxx	xxxx	xxxxx		xxxxx	xxxx		xxxxx		9.1	xxxx	xxxxx		xxxxx	xxxx	xxxxx		
LOS by Move:	*	*	*		*	*		*		A	*	*		*	*	*		
Movement:	LT - LTR - RT					LT - LTR - RT					LT - LTR - RT					LT - LTR - RT				
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	172		xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	0.2		xxxxx		0.0	xxxx	xxxxx		xxxxx	xxxx	xxxxx		
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	27.5		xxxxx		9.1	xxxx	xxxxx		xxxxx	xxxx	xxxxx		
Shared LOS:	*	*	*		*	D		*		A	*	*		*	*	*		
ApproachDel:	xxxxxx					27.5				xxxxxx				xxxxxx				
ApproachLOS:	*					D				*				*				

Note: Queue reported is the distance per lane in feet.

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HevVeh:			2%					2%					2%					2%		
Grade:			0%					0%					0%					0%		
Peds/Hour:			0					0					0					0		
Pedestrian Walk Speed: 4.00 feet/sec																				
LaneWidth:			12 feet					12 feet					12 feet					12 feet		
Time Period: 0.25 hour																				
Upstream Signals:																				
Link Index:													#23							
Dist(miles):													0.250							
Speed (mph):													1.00							
SignalIndex:													#53							
Cycle Time:													100 secs							
InitVolume:												0	831							
Saturation:												0	3538							
ArrivalType:												0	4							
G/C:											0.00		0.94							
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection																				
P:											0.000		1.253							
gq1:											0.00		-5.94							
gq2:											0.00		-2.71							
gq:											0.00		-8.65							
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons																				
alpha:													0.550							
beta:													0.645							
ta (secs):													900.000							
F:													0.003							
f:											1.000		1.000							
vcmax:												0	-97							
vcg:												0	234							
vcmin:											1000		1000							
tp:											0.0		0.0							
p:													0.000							
*** Computation 3: Platoon Event Periods																				
pdom/psubo:													0.000/0.000/Unconstrained							
*** Computation 4: Conflicting Flows During Each Unblocked Period																				
InitCnflVol:	1711		1711		987	1708		1708		710	713		xxxxx	xxxxx		0	xxxxx	xxxxx		
AdjCnflVol:	1711		1711		987	1708		1708		710	713		xxxxx	xxxxx		0	xxxxx	xxxxx		
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx								
ConflictVol:	1711		1711		987	1708		1708		710	713		xxxxx	xxxxx		0	xxxxx	xxxxx		
*** Computation 5: Capacity for Subject Movement During Unblocked Period																				
InitPotCap:	71		91		300	100		91		434	887		xxxxx	xxxxx		1623	xxxxx	xxxxx		
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx								
Potent Cap.:	71		91		300	100		91		434	887		xxxxx	xxxxx		1623	xxxxx	xxxxx		

EPAP No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Cycle (sec):	100	Critical Vol./Cap.(X):	0.277
Loss Time (sec):	12	Average Delay (sec/veh):	1.3
Optimal Cycle:	30	Level Of Service:	A

Street Name:	Micke Grove Road/Holman Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	1	0	1	0	1	1	0	2	0	1	1	0	2	0	1
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	6	0	5	7	792	0	0	666	7
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	6	0	5	7	792	0	0	666	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	7	0	5	8	861	0	0	724	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	7	0	5	8	861	0	0	724	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	7	0	5	8	861	0	0	724	8
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.93	1.00	0.83	0.93	0.93	1.00	1.00	0.93	0.83
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1900	1900	1900	1769	1900	1583	1769	3538	1900	1900	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.20	0.00
Crit Moves:					****			****		****		
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.88	0.00	0.00	0.86	0.86
Volume/Cap:	0.00	0.00	0.00	xxxx	0.00	xxxx	0.24	0.28	0.00	0.00	0.24	0.01
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	52.2	1.0	0.0	0.0	1.2	1.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	52.2	1.0	0.0	0.0	1.2	1.0
LOS by Move:	A	A	A	A	A	A	D	A	A	A	A	A
HCM2k95thQ:	0	0	0	9	0	8	26	20	0	0	14	0

Note: Queue reported is the distance per lane in feet.

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	1	0	1	0	1	1	0	1	0	1	1	0	2	0	1	1	0	2	0	1				
Lane Group:	L		T		R	L		T		R	L		T		R	L		T		R				
#LnsInGrps:	1		1		1	1		1		1	1		2		1	1		2		1				
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12				
CrsswalkWid:	8					8					8					8								
% Hev Veh:	2					2					2					2								
Grade:	0%					0%					0%					0%								
Parking/Hr:	No					No					No					No								
Bus Stp/Hr:	0					0					0					0								
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:	0					0					0					0								
ExclusiveRT:	Include					Include					Include					Include								
% RT Prtct:	0					0					0					0								
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	xxxx	xxxx		xxxx		1	xxxx		xxxx		1	xxxx		xxxx		xxxx	xxxx		xxxx					
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	xxxx	xxxx	xxxxx			1.00	xxxx		1.00		1.00	1.00	xxxxx		xxxx	1.00		1.00						
Hev Veh Adj:	xxxx	xxxx	xxxxx			0.98	xxxx		0.98		0.98	0.98	xxxxx		xxxx	0.98		0.98						
Grade Adj:	xxxx	xxxx	xxxxx			1.00	xxxx		1.00		1.00	1.00	xxxxx		xxxx	1.00		1.00						
Parking Adj:	xxxx	xxxx	xxxxx			xxxx	xxxx		1.00		xxxx	xxxx	xxxxx		xxxx	xxxx		1.00						
Bus Stp Adj:	xxxx	xxxx	xxxxx			xxxx	xxxx		1.00		xxxx	xxxx	xxxxx		xxxx	xxxx		1.00						
Area Adj:	xxxx	xxxx	xxxxx			1.00	xxxx		1.00		1.00	1.00	xxxxx		xxxx	1.00		1.00						
RT Adj:	xxxx	xxxx	xxxxx			xxxx	xxxx		0.85		xxxx	xxxx	xxxxx		xxxx	xxxx		0.85						
LT Adj:	xxxx	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx		xxxx	xxxx	xxxxx							
PedBike Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00					
HCM Sat Adj:	1.00	1.00		1.00		0.93	1.00		0.83		0.93	0.98		1.00		1.00	0.98		0.83					
Usr Sat Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00					
MLF Sat Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	0.95		1.00		1.00	0.95		1.00					
Fnl Sat Adj:	1.00	1.00		1.00		0.93	1.00		0.83		0.93	0.93		1.00		1.00	0.93		0.83					
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >																							
DelAdjFctr:	0.00	0.00		0.00		0.00	0.00		0.00		1.00	1.00		0.00		0.00	1.00		1.00					

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.88	0.00	0.00	0.86	0.86
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Q1:	0.0	0.0	0.0	0.2	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.47
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88	0.88
EarlyArrAdj:	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.86	0.78
Q2:	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.0	0.0	0.3	0.0
HCM2KQueue:	0.0	0.0	0.0	0.2	0.0	0.2	0.5	0.4	0.0	0.0	0.3	0.0
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	0.0	0.0	0.0	0.2	0.0	0.2	0.6	0.5	0.0	0.0	0.3	0.0
85th%Factor:	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
HCM2k85thQ:	0.0	0.0	0.0	0.3	0.0	0.2	0.8	0.6	0.0	0.0	0.4	0.0
90th%Factor:	1.80	1.80	1.80	1.80	1.80	1.80	1.79	1.79	1.80	1.80	1.79	1.80
HCM2k90thQ:	0.0	0.0	0.0	0.3	0.0	0.3	0.9	0.7	0.0	0.0	0.5	0.0
95th%Factor:	2.10	2.10	2.10	2.09	2.10	2.09	2.08	2.09	2.10	2.10	2.09	2.10
HCM2k95thQ:	0.0	0.0	0.0	0.4	0.0	0.3	1.0	0.8	0.0	0.0	0.6	0.0
98th%Factor:	2.70	2.70	2.70	2.69	2.70	2.69	2.66	2.67	2.70	2.70	2.68	2.70
HCM2k98thQ:	0.0	0.0	0.0	0.5	0.0	0.4	1.3	1.0	0.0	0.0	0.7	0.0

EPAP No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Average Delay (sec/veh): 7.3 Worst Case Level Of Service: B[11.3]

Street Name:	SR 99 West Frontage Rd						SR 99 SB Ramps (Eight Mile Rd)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Volume Module:	AM Peak Hour											
Base Vol:	0	103	1	350	106	0	0	0	0	14	0	287
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	103	1	350	106	0	0	0	0	14	0	287
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	112	1	380	115	0	0	0	0	15	0	312
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	112	1	380	115	0	0	0	0	15	0	312
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	113	xxxx	xxxxx	xxxx	xxxx	xxxxx	989	xxxx	112
Potent Cap.:	xxxx	xxxx	xxxxx	1476	xxxx	xxxxx	xxxx	xxxx	xxxxx	274	xxxx	940
Move Cap.:	xxxx	xxxx	xxxxx	1476	xxxx	xxxxx	xxxx	xxxx	xxxxx	204	xxxx	940
Volume/Cap:	xxxx	xxxx	xxxx	0.26	xxxx	xxxx	xxxx	xxxx	xxxx	0.07	xxxx	0.33
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	25.8	xxxx	xxxxx	xxxx	xxxx	xxxxx	6.0	xxxx	36.5
Control Del:	xxxxx	xxxx	xxxxx	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	24.0	xxxx	10.7
LOS by Move:	*	*	*	A	*	*	*	*	*	C	*	B
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	1.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			11.3		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the distance per lane in feet.

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

```
Intersection #14 SR99 W Front & SB Ramps 8 Mile
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
-----------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                        #183
Dist(miles):                       0.250
Speed (mph):                        1.00
SignalIndex:                       #12
Cycle Time:                          100 secs
InitVolume:                   149    20
Saturation:                  1769   871
ArrivalType:                    4     4
G/C:                         0.15  0.04
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                          0.203 0.055
gq1:                         6.72  2.17
gq2:                         0.85  0.07
gq:                          7.56  2.24
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                             0.550
beta:                              0.645
ta (secs):                        900.000
F:                                  0.003
f:                           1.000 1.000
vcmax:                          41     6
vcg:                            45     6
vcmin:                        1000  1000
tp:                            0.0   0.0
p:                                 0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx  113 xxxxx xxxxx 1145   989   115  989   989   112
AdjCnflVol:    0 xxxxx xxxxx  113 xxxxx xxxxx 1145   989   115  989   989   112
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx  113 xxxxx xxxxx 1145   989   115  989   989   112
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1623 xxxxx xxxxx 1476 xxxxx xxxxx  177   247   937  274   247   940
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1623 xxxxx xxxxx 1476 xxxxx xxxxx  177   247   937  274   247   940
```


EPAP No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

```
Intersection #15 SR99 E Front & NB Ramps 8 Mile
Average Delay (sec/veh):      4.3       Worst Case Level Of Service: C[ 20.2]
Street Name:      SR 99 East Frontage Rd        SR 99 NB Ramps (Eight Mile Rd)
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
-----------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  0  0    0  0  1  0  1    1  0  0  0  1    0  0  0  0  0
-----------|---------------||---------------||---------------||---------------|
Volume Module:AM Peak Hour
Base Vol:     152  197     0     0  301   214    96    0    50     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  152  197     0     0  301   214    96    0    50     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:   165  214     0     0  327   233   104    0    54     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:  165  214     0     0  327   233   104    0    54     0    0     0
-----------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4 xxxx   6.2 xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3 xxxxx xxxx xxxxx
-----------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  560 xxxx xxxxx  xxxx xxxx xxxxx   872 xxxx   327  xxxx xxxx xxxxx
Potent Cap.: 1021 xxxx xxxxx  xxxx xxxx xxxxx   324 xxxx   719  xxxx xxxx xxxxx
Move Cap.:   1021 xxxx xxxxx  xxxx xxxx xxxxx   279 xxxx   719  xxxx xxxx xxxxx
Volume/Cap:  0.16 xxxx  xxxx  xxxx xxxx  xxxx  0.37 xxxx  0.08  xxxx xxxx  xxxx
-----------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   14.4 xxxx xxxxx  xxxx xxxx xxxxx  41.5 xxxx   6.1  xxxx xxxx xxxxx
Control Del:  9.2 xxxx xxxxx xxxxx xxxx xxxxx  25.4 xxxx  10.4 xxxxx xxxx xxxxx
LOS by Move:    A    *     *     *    *     *     D    *     B     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:  0.6 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:  9.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     A    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx             20.2           xxxxxx
ApproachLOS:         *                *                C                *
Note: Queue reported is the distance per lane in feet.
```

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #15 SR99 E Front & NB Ramps 8 Mile

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------|----------------|----------------|----------------|
HevVeh:             0%               0%               0%               0%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:       #222             #188
Dist(miles):      0.250            0.250
Speed (mph):       1.00             1.00
SignalIndex:      #23              #13
Cycle Time:         100 secs         100 secs
InitVolume:     0    84         50    19
Saturation:     0   993       1769  1597
ArrivalType:    0     4          4     4
G/C:         0.00  0.36       0.05  0.08
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:          0.000 0.475      0.069 0.106
gq1:         0.00  4.45       2.63  1.06
gq2:         0.00  0.57       0.10  0.02
gq:          0.00  5.01       2.73  1.08
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:            0.550            0.550
beta:             0.645            0.645
ta (secs):       900.000           900.000
F:                0.003            0.003
f:          1.000 1.000      1.000 1.000
vcmax:          0    15         15     5
vcg:            0    24         15     6
vcmin:       1000  1000       1000  1000
tp:           0.0   0.0        0.0   0.0
p:                0.000            0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol: 560 xxxxx xxxxx    0 xxxxx xxxxx  872   872   327 1015  1104   214
AdjCnflVol:  560 xxxxx xxxxx    0 xxxxx xxxxx  872   872   327 1015  1104   214
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol: 560 xxxxx xxxxx    0 xxxxx xxxxx  872   872   327 1015  1104   214
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1021 xxxxx xxxxx 1636 xxxxx xxxxx  324   291   719  219   213   831
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1021 xxxxx xxxxx 1636 xxxxx xxxxx  324   291   719  219   213   831
```


EPAP No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

```
Cycle (sec):         100                Critical Vol./Cap.(X):         0.338
Loss Time (sec):      12                Average Delay (sec/veh):        30.0
Optimal Cycle:        32                Level Of Service:                  C
```

```
Street Name:           Holman Road                Lt. Col. Mark Taylor Street
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        1  0  2  0  1    1  0  3  0  1    1  0  1  0  1    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:AM Peak Hour
Base Vol:     133   98    87    11  174     7     9  135   126   149  104     4
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  133   98    87    11  174     7     9  135   126   149  104     4
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:   145  107    95    12  189     8    10  147   137   162  113     4
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  145  107    95    12  189     8    10  147   137   162  113     4
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  145  107    95    12  189     8    10  147   137   162  113     4
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.93 0.93  0.83  0.93 0.89  0.83  0.93 0.98  0.83  0.93 0.97  0.97
Lanes:       1.00 2.00  1.00  1.00 3.00  1.00  1.00 1.00  1.00  1.00 0.96  0.04
Final Sat.:  1769 3538  1583  1769 5083  1583  1769 1862  1583  1769 1782    69
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.08 0.03  0.06  0.01 0.04  0.00  0.01 0.08  0.09  0.09 0.06  0.06
Crit Moves:  ****                 ****                   ****  ****
Green/Cycle: 0.24 0.32  0.32  0.04 0.11  0.11  0.04 0.26  0.26  0.27 0.49  0.49
Volume/Cap:  0.34 0.10  0.19  0.19 0.34  0.04  0.13 0.31  0.34  0.34 0.13  0.13
Delay/Veh:   31.7 24.1  25.0  48.2 41.5  39.9  46.9 30.4  30.8  29.6 14.2  14.2
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  31.7 24.1  25.0  48.2 41.5  39.9  46.9 30.4  30.8  29.6 14.2  14.2
LOS by Move:    C    C     C     D    D     D     D    C     C     C    B     B
HCM2k95thQ:   164   51    90    28  113    12    15  160   153   187   72    72
```

Note: Queue reported is the distance per lane in feet.

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 2	0 1		1	0 3	0 1		1	0 1	0 1		1	0 0	1 0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	2	1		1	3	1		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.89	0.83		0.93	0.98	0.83		0.93	0.97	0.97	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.24	0.32	0.32		0.04	0.11	0.11		0.04	0.26	0.26		0.27	0.49	0.49	
ArrivalType:		4				4				4				4		
ProgFactor:	0.92	0.85	0.86		0.99	0.97	0.96		0.99	0.91	0.91		0.91	0.70	0.70	
Q1:		3.1	0.9	1.6		0.3	1.7	0.2		0.3	3.0	2.8	3.3	1.3	1.3	
UpstreamVC:	0.18	0.18	0.18		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.99	0.99	0.99		0.00	0.00	0.00		1.00	1.00	1.00		0.00	0.00	0.00	
EarlyArrAdj:	0.44	0.53	0.48		1.00	1.00	1.00		0.16	0.47	0.43		1.00	1.00	1.00	
Q2:		0.2	0.1	0.1		0.2	0.5	0.0		0.0	0.2	0.2	0.5	0.2	0.2	
HCM2KQueue:		3.3	1.0	1.8		0.5	2.2	0.2		0.3	3.2	3.0	3.8	1.4	1.4	
70th%Factor:	1.19	1.20	1.20		1.20	1.19	1.20		1.20	1.19	1.19		1.19	1.20	1.20	
HCM2k70thQ:		3.9	1.2	2.1		0.7	2.7	0.3		0.3	3.8	3.6	4.5	1.7	1.7	
85th%Factor:	1.57	1.59	1.58		1.59	1.58	1.60		1.60	1.57	1.57		1.56	1.59	1.59	
HCM2k85thQ:		5.1	1.6	2.8		0.9	3.5	0.4		0.4	5.0	4.8	5.9	2.2	2.2	
90th%Factor:	1.74	1.78	1.77		1.79	1.76	1.80		1.79	1.74	1.74		1.73	1.77	1.77	
HCM2k90thQ:		5.7	1.8	3.1		1.0	3.9	0.4		0.5	5.6	5.3	6.5	2.5	2.5	
95th%Factor:	2.00	2.07	2.04		2.08	2.03	2.09		2.09	2.00	2.01		1.99	2.05	2.05	
HCM2k95thQ:		6.5	2.1	3.6		1.1	4.5	0.5		0.6	6.4	6.1	7.5	2.9	2.9	
98th%Factor:	2.48	2.63	2.57		2.66	2.54	2.68		2.68	2.48	2.49		2.45	2.60	2.60	
HCM2k98thQ:		8.1	2.6	4.5		1.4	5.7	0.6		0.8	8.0	7.6	9.2	3.7	3.7	

EPAP No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.506
Loss Time (sec): 12 Average Delay (sec/veh): 28.2
Optimal Cycle: 41 Level Of Service: C

Street Name:	West Lane						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	3	0	1	2	0	3	0	1
Volume Module:AM Peak Hour												
Base Vol:	80	450	242	354	656	32	67	90	67	243	62	212
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	80	450	242	354	656	32	67	90	67	243	62	212
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	87	489	263	385	713	35	73	98	73	264	67	230
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	489	263	385	713	35	73	98	73	264	67	230
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	87	489	263	385	713	35	73	98	73	264	67	230
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	5083	1583	3432	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.14	0.17	0.11	0.20	0.02	0.02	0.02	0.05	0.08	0.01	0.15
Crit Moves:			****	****			****					****
Green/Cycle:	0.06	0.33	0.33	0.22	0.49	0.49	0.04	0.12	0.12	0.21	0.29	0.29
Volume/Cap:	0.41	0.42	0.51	0.51	0.41	0.04	0.51	0.16	0.37	0.37	0.05	0.51
Delay/Veh:	46.5	26.4	27.8	34.7	16.5	13.4	49.8	39.3	41.5	34.4	25.7	30.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.5	26.4	27.8	34.7	16.5	13.4	49.8	39.3	41.5	34.4	25.7	30.6
LOS by Move:	D	C	C	C	B	B	D	D	D	C	C	C
HCM2k95thQ:	94	273	301	269	274	21	96	54	120	181	25	284

Note: Queue reported is the distance per lane in feet.

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L - T - R						L - T - R						L - T - R						L - T - R					
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	3	0	1	2	0	3	0	1				
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R												
#LnsInGrps:	2	2	1	2	2	1	2	3	1	2	3	1												
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12												
CrsswalkWid:	8			8			8			8														
% Hev Veh:	2			2			2			2														
Grade:	0%			0%			0%			0%														
Parking/Hr:	No			No			No			No														
Bus Stp/Hr:	0			0			0			0														
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:	0			0			0			0														
ExclusiveRT:	Include			Include			Include			Include														
% RT Prtct:	0			0			0			0														
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx												
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98												
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00												
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00												
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85												
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx												
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83												
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
MLF Sat Adj:	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00												
Fnl Sat Adj:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83												
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.06	0.33	0.33	0.22	0.49	0.49	0.04	0.12	0.12	0.21	0.29	0.29
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.88	0.90	0.94	0.74	0.69	0.99	0.96	0.97	0.94	0.87	0.92
Q1:	1.2	4.9	5.3	4.6	5.0	0.3	1.0	0.9	1.8	3.1	0.4	4.9
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.6	0.7	1.0	1.0	0.7	0.0	0.9	0.2	0.6	0.6	0.0	1.0
HCM2KQueue:	1.8	5.6	6.3	5.5	5.7	0.4	1.9	1.0	2.4	3.6	0.5	5.9
70th%Factor:	1.20	1.19	1.19	1.19	1.19	1.20	1.20	1.20	1.19	1.19	1.20	1.19
HCM2k70thQ:	2.2	6.7	7.4	6.6	6.7	0.5	2.2	1.2	2.8	4.3	0.6	7.0
85th%Factor:	1.58	1.55	1.54	1.55	1.55	1.60	1.58	1.59	1.58	1.57	1.60	1.55
HCM2k85thQ:	2.9	8.7	9.7	8.6	8.8	0.6	3.0	1.6	3.7	5.7	0.8	9.1
90th%Factor:	1.76	1.70	1.69	1.70	1.70	1.79	1.76	1.78	1.76	1.73	1.79	1.70
HCM2k90thQ:	3.2	9.6	10.6	9.4	9.6	0.7	3.3	1.8	4.2	6.3	0.9	10.0
95th%Factor:	2.04	1.94	1.92	1.94	1.94	2.09	2.04	2.07	2.03	1.99	2.08	1.93
HCM2k95thQ:	3.7	10.9	12.1	10.8	11.0	0.8	3.8	2.1	4.8	7.2	1.0	11.4
98th%Factor:	2.57	2.35	2.32	2.35	2.35	2.67	2.57	2.62	2.53	2.46	2.66	2.34
HCM2k98thQ:	4.7	13.2	14.5	13.1	13.3	1.1	4.8	2.7	6.0	8.9	1.3	13.7

EPAP No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.583
Loss Time (sec):	12	Average Delay (sec/veh):	35.0
Optimal Cycle:	47	Level Of Service:	D

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:	AM Peak Hour											
Base Vol:	236	112	116	319	215	181	143	585	171	182	500	191
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	236	112	116	319	215	181	143	585	171	182	500	191
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	257	122	126	347	234	197	155	636	186	198	543	208
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	257	122	126	347	234	197	155	636	186	198	543	208
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	257	122	126	347	234	197	155	636	186	198	543	208
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.15	0.02	0.08	0.20	0.05	0.12	0.09	0.13	0.12	0.11	0.11	0.13
Crit Moves:			****	****				****		****		
Green/Cycle:	0.25	0.14	0.14	0.34	0.22	0.22	0.16	0.21	0.21	0.19	0.24	0.24
Volume/Cap:	0.57	0.18	0.58	0.58	0.21	0.57	0.54	0.58	0.55	0.58	0.44	0.54
Delay/Veh:	34.2	38.3	44.5	28.9	32.1	37.1	40.4	36.0	36.8	39.3	32.3	34.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.2	38.3	44.5	28.9	32.1	37.1	40.4	36.0	36.8	39.3	32.3	34.5
LOS by Move:	C	D	D	C	C	D	D	D	D	D	C	C
HCM2k95thQ:	305	57	177	372	97	250	241	327	267	245	221	240

Note: Queue reported is the distance per lane in feet.

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	3	0	1	0	3	0	1	0	3	0	1	0	3	0
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	3	1		1	3	1		1	3	1		1	3	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.25	0.14	0.14		0.34	0.22	0.22		0.16	0.21	0.21		0.19	0.24	0.24	
ArrivalType:	4				4				4				4			
ProgFactor:	0.94	0.96	0.98		0.90	0.92	0.95		0.97	0.95	0.95		0.96	0.93	0.94	
Q1:	5.8	1.0	3.2		7.2	1.8	4.6		3.8	5.5	4.4		4.8	4.4	4.7	
UpstreamVC:	0.48	0.48	0.48		0.34	0.34	0.34		0.00	0.00	0.00		0.86	0.86	0.86	
UpstreamAdj:	0.87	0.87	0.87		0.95	0.95	0.95		0.00	0.00	0.00		0.39	0.39	0.39	
EarlyArrAdj:	0.40	0.28	0.26		0.51	0.41	0.37		1.00	1.00	1.00		0.15	0.18	0.16	
Q2:	0.5	0.1	0.3		0.7	0.1	0.5		1.1	1.3	1.1		0.2	0.1	0.2	
HCM2KQueue:	6.3	1.1	3.6		7.9	1.9	5.1		4.9	6.9	5.5		5.0	4.5	4.9	
70th%Factor:	1.19	1.20	1.19		1.18	1.20	1.19		1.19	1.18	1.19		1.19	1.19	1.19	
HCM2k70thQ:	7.5	1.3	4.2		9.3	2.3	6.1		5.8	8.1	6.5		6.0	5.3	5.8	
85th%Factor:	1.54	1.59	1.57		1.53	1.58	1.55		1.55	1.54	1.55		1.55	1.56	1.55	
HCM2k85thQ:	9.8	1.8	5.6		12.1	3.0	7.9		7.7	10.5	8.5		7.8	7.0	7.6	
90th%Factor:	1.69	1.78	1.73		1.67	1.76	1.71		1.71	1.68	1.70		1.71	1.72	1.71	
HCM2k90thQ:	10.7	2.0	6.2		13.2	3.4	8.8		8.4	11.5	9.4		8.6	7.7	8.4	
95th%Factor:	1.92	2.06	1.99		1.89	2.04	1.95		1.96	1.91	1.94		1.95	1.97	1.96	
HCM2k95thQ:	12.2	2.3	7.1		14.9	3.9	10.0		9.6	13.1	10.7		9.8	8.8	9.6	
98th%Factor:	2.31	2.62	2.46		2.25	2.56	2.37		2.38	2.29	2.35		2.38	2.41	2.39	
HCM2k98thQ:	14.7	2.9	8.7		17.7	4.9	12.2		11.7	15.7	13.0		11.9	10.8	11.7	

EPAP No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #20 SR99 W Front & SB Ramps Morada

Average Delay (sec/veh): 42.7 Worst Case Level Of Service: F[93.5]

Street Name:	SR 99 West Frontage Rd						SR 99 SB Ramps (Morada Lane)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 1 0 0 0			0 0 0 0 0			1 0 0 0 1		
Volume Module:AM Peak Hour												
Base Vol:	0	62	788	31	50	0	0	0	0	282	0	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	62	788	31	50	0	0	0	0	282	0	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	67	857	34	54	0	0	0	0	307	0	21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	67	857	34	54	0	0	0	0	307	0	21
Critical Gap Module:												
Critical Gp:	xxxxx	6.5	6.2	7.1	6.5	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	4.0	3.3	3.5	4.0	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	634	0	647	613	xxxxx	xxxx	xxxx	xxxxx	0	xxxx	xxxxx
Potent Cap.:	xxxx	397	1085	384	408	xxxxx	xxxx	xxxx	xxxxx	1623	xxxx	xxxxx
Move Cap.:	xxxx	322	1085	58	331	xxxxx	xxxx	xxxx	xxxxx	1623	xxxx	xxxxx
Volume/Cap:	xxxx	0.21	0.79	0.58	0.16	xxxx	xxxx	xxxx	xxxx	0.19	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	17.4	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	- LTR	- RT	LT	- LTR	- RT	LT	- LTR	- RT	LT	- LTR	- RT
Shared Cap.:	xxxx	xxxx	925	119	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	18.5	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	50.5	93.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	F	F	*	*	*	*	*	*	*	*
ApproachDel:	50.5			93.5			xxxxxx			xxxxxx		
ApproachLOS:	F			F			*			*		

Note: Queue reported is the distance per lane in feet.

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #20 SR99 W Front & SB Ramps Morada

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												

EPAP No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #21 SR99 E Front & NB Ramps Morada

Average Delay (sec/veh): 15.7 Worst Case Level Of Service: F[69.2]

Street Name:	SR 99 East Frontage Rd								SR 99 NB Ramps (Morada Lane)							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	1	0	0	0	0	0	0	1	0	1	0	0	1	0	0
Volume Module:AM Peak Hour																
Base Vol:	230	451	0	0	511	2	95	0	214	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	230	451	0	0	511	2	95	0	214	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92				
PHF Volume:	250	490	0	0	555	2	103	0	233	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	250	490	0	0	555	2	103	0	233	0	0	0				
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx				
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	558	xxxx	xxxxx	xxxx	xxxx	xxxxx	1547	xxxx	557	xxxx	xxxx	xxxxx				
Potent Cap.:	1013	xxxx	xxxxx	xxxx	xxxx	xxxxx	126	xxxx	530	xxxx	xxxx	xxxxx				
Move Cap.:	1013	xxxx	xxxxx	xxxx	xxxx	xxxxx	98	xxxx	530	xxxx	xxxx	xxxxx				
Volume/Cap:	0.25	xxxx	xxxx	xxxx	xxxx	xxxx	1.05	xxxx	0.44	xxxx	xxxx	xxxx				
Level Of Service Module:																
2Way95thQ:	24.3	xxxx	xxxxx	xxxx	xxxx	xxxxx	164	xxxx	55.3	xxxx	xxxx	xxxxx				
Control Del:	9.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	186.7	xxxx	17.0	xxxxx	xxxx	xxxxx				
LOS by Move:	A	*	*	*	*	*	F	*	C	*	*	*				
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT				
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	1.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	9.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*				
ApproachDel:	xxxxxx			xxxxxx			69.2			xxxxxx						
ApproachLOS:	*			*			F			*						

Note: Queue reported is the distance per lane in feet.

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #21 SR99 E Front & NB Ramps Morada

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HevVeh:	2%				2%				2%				2%			
Grade:	0%				0%				0%				0%			
Peds/Hour:	0				0				0				0			
Pedestrian Walk Speed: 4.00 feet/sec																
LaneWidth:	12 feet				12 feet				12 feet				12 feet			
Time Period: 0.25 hour																
Upstream Signals:																
Link Index:	#222				#188											
Dist(miles):	0.250				0.250											
Speed (mph):	1.00				1.00											
SignalIndex:	#23				#13											
Cycle Time:	100 secs				100 secs											
InitVolume:	0	84			50	19										
Saturation:	0	993			1769	1597										
ArrivalType:	0	4			4	4										
G/C:	0.00	0.36			0.05	0.08										
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection																
P:	0.000	0.475			0.069	0.106										
gq1:	0.00	4.45			2.63	1.06										
gq2:	0.00	0.57			0.10	0.02										
gq:	0.00	5.01			2.73	1.08										
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons																
alpha:	0.550				0.550											
beta:	0.645				0.645											
ta (secs):	900.000				900.000											
F:	0.003				0.003											
f:	1.000	1.000			1.000	1.000										
vcmax:	0	15			15	5										
vcg:	0	24			15	6										
vcmin:	1000	1000			1000	1000										
tp:	0.0	0.0			0.0	0.0										
p:	0.000				0.000											
*** Computation 3: Platoon Event Periods																
pdom/psubo:	0.000/0.000/Unconstrained															
*** Computation 4: Conflicting Flows During Each Unblocked Period																
InitCnflVol:	558	xxxxx	xxxxx	0	xxxxx	xxxxx	1547	1547	557	1663	1548	490				
AdjCnflVol:	558	xxxxx	xxxxx	0	xxxxx	xxxxx	1547	1547	557	1663	1548	490				
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000				
ConflictVol:	558	xxxxx	xxxxx	0	xxxxx	xxxxx	1547	1547	557	1663	1548	490				
*** Computation 5: Capacity for Subject Movement During Unblocked Period																
InitPotCap:	1013	xxxxx	xxxxx	1623	xxxxx	xxxxx	126	114	530	77	114	578				
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000				
Potent Cap.:	1013	xxxxx	xxxxx	1623	xxxxx	xxxxx	126	114	530	77	114	578				

EPAP No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #24 West Ln & West Ln Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.593
Loss Time (sec):	9	Average Delay (sec/veh):	21.0
Optimal Cycle:	40	Level Of Service:	C

Street Name:	West Lane						West Lane Frontage Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	0 1	0	0 1	1 0	0	1 0
Volume Module:AM Peak Hour												
Base Vol:	111	611	52	47	900	69	117	14	116	177	17	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	111	611	52	47	900	69	117	14	116	177	17	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	121	664	57	51	978	75	127	15	126	192	18	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	121	664	57	51	978	75	127	15	126	192	18	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	121	664	57	51	978	75	127	15	126	192	18	4
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.92	0.92	0.93	0.92	0.92	0.71	0.71	0.83	0.59	0.95	0.95
Lanes:	1.00	1.84	0.16	1.00	1.86	0.14	0.89	0.11	1.00	1.00	0.81	0.19
Final Sat.:	1769	3221	274	1769	3250	249	1201	144	1583	1127	1465	345
Capacity Analysis Module:												
Vol/Sat:	0.07	0.21	0.21	0.03	0.30	0.30	0.11	0.11	0.08	0.17	0.01	0.01
Crit Moves:	****				****					****		
Green/Cycle:	0.11	0.55	0.55	0.08	0.51	0.51	0.29	0.29	0.29	0.29	0.29	0.29
Volume/Cap:	0.59	0.38	0.38	0.38	0.59	0.59	0.37	0.37	0.28	0.59	0.04	0.04
Delay/Veh:	46.7	13.1	13.1	45.7	17.9	17.9	29.0	29.0	27.9	33.5	25.7	25.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.7	13.1	13.1	45.7	17.9	17.9	29.0	29.0	27.9	33.5	25.7	25.7
LOS by Move:	D	B	B	D	B	B	C	C	C	C	C	C
HCM2k95thQ:	174	215	215	97	451	451	170	170	141	272	23	23

Note: Queue reported is the distance per lane in feet.

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	1	1	0	1 0	1	1	0	0 1	0	0	1	1 0	0	1	0
Lane Group:	L	RT		RT	L	RT		RT	LT	LT		R	L	RT		RT
#LnsInGrps:	1	2		2	1	2		2	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		5	5	xxxx		2	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.99	0.99		xxxx	0.99	0.99		xxxx	xxxx	0.85		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.72	0.72	xxxxx		0.61	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.97	0.97		0.93	0.97	0.97		0.71	0.71	0.83		0.59	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	0.95		1.00	0.95	0.95		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.92	0.92		0.93	0.92	0.92		0.71	0.71	0.83		0.59	0.95	0.95	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Base Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North	South	East	West
Cycle Length, C:	xxxxxx	xxxxxx	100	100
Actual Green Time Per Lane Group, G:	xxxxxx	xxxxxx	27.77	27.77
Effective Green Time Per Lane Group, g:	xxxxxx	xxxxxx	28.77	28.77
Opposing Effective Green Time, go:	xxxxxx	xxxxxx	28.77	28.77
Number Of Opposing Lanes, No:	xxxxxx	xxxxxx	1	1
Number Of Lanes In Lane Group, N:	xxxxxx	xxxxxx	1	1
Adjusted Left-Turn Flow Rate, Vlt:	xxxxxx	xxxxxx	127	192
Proportion of Left Turns in Lane Group, Plt:	xxxxxx	xxxxxx	0.89	1.00
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	xxxxxx	xxxxxx	3.53	5.34
Adjusted Opposing Flow Rate, Vo:	xxxxxx	xxxxxx	23	142
Opposing Flow Per Lane Per Cycle, Volc:	xxxxxx	xxxxxx	0.64	3.94
Opposing Platoon Ratio, Rpo:	xxxxxx	xxxxxx	1.33	1.33
Lost Time Per Phase, tl:	xxxxxx	xxxxxx	3.00	3.00
Eff grn until arrival of left-turn car, gf:	xxxxxx	xxxxxx	0.14	0.00
Opposing Queue Ratio, qro:	xxxxxx	xxxxxx	0.62	0.62
Eff grn blocked by opposing queue, gq:	xxxxxx	xxxxxx	0.00	2.43
Eff grn while left turns filter thru, gu:	xxxxxx	xxxxxx	28.63	26.34
Max opposing cars arriving during gq-gf, n:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	0.86	0.79
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	0.89	1.00
Through-car Equivalents, el1:	xxxxxx	xxxxxx	1.43	1.51
Single Lane Through-car Equivalents, el2:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	xxxxxx	xxxxxx	0.13	0.14
Single Lane Left Turn Adjustment Factor, fm:	xxxxxx	xxxxxx	0.72	0.61
Left Turn Adjustment Factor, flt:	xxxxxx	xxxxxx	0.72	0.61

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.11	0.55	0.55	0.08	0.51	0.51	0.29	0.29	0.29	0.29	0.29	0.29
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.66	0.66	0.98	0.77	0.77	0.90	0.90	0.89	0.93	0.87	0.87
Q1:	3.1	4.0	4.0	1.3	8.3	8.3	2.8	2.8	2.4	4.3	0.4	0.4
UpstreamVC:	0.44	0.44	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.90	0.90	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.25	0.66	0.66	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.4	0.4	0.4	0.6	1.4	1.4	0.6	0.6	0.4	1.3	0.0	0.0
HCM2KQueue:	3.5	4.4	4.4	1.9	9.7	9.7	3.4	3.4	2.8	5.6	0.4	0.4
70th%Factor:	1.19	1.19	1.19	1.20	1.18	1.18	1.19	1.19	1.19	1.19	1.20	1.20
HCM2k70thQ:	4.1	5.2	5.2	2.3	11.5	11.5	4.1	4.1	3.3	6.7	0.5	0.5
85th%Factor:	1.57	1.56	1.56	1.58	1.52	1.52	1.57	1.57	1.57	1.55	1.60	1.60
HCM2k85thQ:	5.5	6.8	6.8	3.0	14.8	14.8	5.3	5.3	4.4	8.7	0.7	0.7
90th%Factor:	1.74	1.72	1.72	1.76	1.65	1.65	1.74	1.74	1.75	1.70	1.79	1.79
HCM2k90thQ:	6.0	7.5	7.5	3.4	16.0	16.0	5.9	5.9	4.9	9.6	0.8	0.8
95th%Factor:	1.99	1.97	1.97	2.04	1.85	1.85	2.00	2.00	2.01	1.94	2.09	2.09
HCM2k95thQ:	6.9	8.6	8.6	3.9	18.0	18.0	6.8	6.8	5.6	10.9	0.9	0.9
98th%Factor:	2.47	2.42	2.42	2.56	2.17	2.17	2.47	2.47	2.51	2.35	2.67	2.67
HCM2k98thQ:	8.6	10.5	10.5	4.9	21.2	21.2	8.4	8.4	7.0	13.2	1.2	1.2

EPAP No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #25 West Lane & Knickerbocker Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.473
Loss Time (sec):	12	Average Delay (sec/veh):	25.3
Optimal Cycle:	39	Level Of Service:	C

Street Name:	West Lane								Knickerbocker Drive			
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	3	0	1	1	0	2	1	0	1	0	0	1	0	1	0	0	1	0
Volume Module:	AM Peak Hour																			
Base Vol:	24	681	78		124	995	48		70	56	39		192	88	30	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	24	681	78		124	995	48		70	56	39		192	88	30	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	26	740	85		135	1082	52		76	61	42		209	96	33	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	26	740	85		135	1082	52		76	61	42		209	96	33	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	26	740	85		135	1082	52		76	61	42		209	96	33	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.89	0.83		0.93	0.89	0.89		0.93	0.92	0.92		0.93	0.94	0.94	
Lanes:	1.00	3.00	1.00		1.00	2.86	0.14		1.00	0.59	0.41		1.00	0.75	0.25	
Final Sat.:	1769	5083	1583		1769	4815	232		1769	1030	717		1769	1336	455	
Capacity Analysis Module:																
Vol/Sat:	0.01	0.15	0.05		0.08	0.22	0.22		0.04	0.06	0.06		0.12	0.07	0.07	
Crit Moves:	****					****				****			****			
Green/Cycle:	0.03	0.33	0.33		0.17	0.47	0.47		0.14	0.12	0.12		0.25	0.23	0.23	
Volume/Cap:	0.47	0.44	0.16		0.44	0.47	0.47		0.31	0.47	0.47		0.47	0.31	0.31	
Delay/Veh:	53.9	26.3	23.7		38.0	17.9	17.9		39.3	42.3	42.3		32.8	32.0	32.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	53.9	26.3	23.7		38.0	17.9	17.9		39.3	42.3	42.3		32.8	32.0	32.0	
LOS by Move:	D	C	C		D	B	B		D	D	D		C	C	C	
HCM2k95thQ:	42	272	77		171	312	312		114	172	172		265	158	158	

Note: Queue reported is the distance per lane in feet.

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	3	0	1	1	0	2	1	0	1	0	0	1	0	1	0	0	1	0
Lane Group:	L	T	R		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	3	1		1	3	3		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.99	0.99		xxxx	0.94	0.94		xxxx	0.96	0.96	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.97	0.97		0.93	0.92	0.92		0.93	0.94	0.94	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.89		0.93	0.92	0.92		0.93	0.94	0.94	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.03	0.33	0.33	0.17	0.47	0.47	0.14	0.12	0.12	0.25	0.23	0.23
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.88	0.85	0.96	0.77	0.77	0.96	0.97	0.97	0.93	0.92	0.92
Q1:	0.7	5.2	1.4	3.2	6.0	6.0	1.8	2.6	2.6	4.6	2.7	2.7
UpstreamVC:	0.31	0.31	0.31	0.59	0.59	0.59	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.96	0.96	0.96	0.78	0.78	0.78	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.12	0.53	0.48	0.28	0.53	0.53	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.1	0.4	0.1	0.2	0.5	0.5	0.4	0.8	0.8	0.9	0.4	0.4
HCM2KQueue:	0.8	5.6	1.5	3.4	6.5	6.5	2.3	3.4	3.4	5.5	3.1	3.1
70th%Factor:	1.20	1.19	1.20	1.19	1.18	1.18	1.19	1.19	1.19	1.19	1.19	1.19
HCM2k70thQ:	1.0	6.7	1.8	4.1	7.7	7.7	2.7	4.1	4.1	6.5	3.8	3.8
85th%Factor:	1.59	1.55	1.59	1.57	1.54	1.54	1.58	1.57	1.57	1.55	1.57	1.57
HCM2k85thQ:	1.3	8.7	2.4	5.4	10.0	10.0	3.6	5.4	5.4	8.5	4.9	4.9
90th%Factor:	1.78	1.70	1.77	1.74	1.69	1.69	1.76	1.74	1.74	1.70	1.74	1.74
HCM2k90thQ:	1.5	9.6	2.7	5.9	11.0	11.0	4.0	6.0	6.0	9.3	5.5	5.5
95th%Factor:	2.07	1.94	2.05	2.00	1.92	1.92	2.03	2.00	2.00	1.94	2.00	2.00
HCM2k95thQ:	1.7	10.9	3.1	6.8	12.5	12.5	4.6	6.9	6.9	10.6	6.3	6.3
98th%Factor:	2.64	2.35	2.59	2.47	2.31	2.31	2.54	2.47	2.47	2.36	2.48	2.48
HCM2k98thQ:	2.2	13.2	3.9	8.4	15.0	15.0	5.7	8.5	8.5	12.9	7.8	7.8

EPAP No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.554
Loss Time (sec):	12	Average Delay (sec/veh):	32.8
Optimal Cycle:	44	Level Of Service:	C

Street Name:	West Lane						Hammer Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4 0 1	2	0	4 0 1	2	0	4 0 1	2	0	4 0 1
Volume Module:	AM Peak Hour											
Base Vol:	217	458	119	168	917	196	311	843	219	383	654	59
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	217	458	119	168	917	196	311	843	219	383	654	59
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	236	498	129	183	997	213	338	916	238	416	711	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	236	498	129	183	997	213	338	916	238	416	711	64
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	236	498	129	183	997	213	338	916	238	416	711	64
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.07	0.07	0.08	0.05	0.15	0.13	0.10	0.14	0.15	0.12	0.10	0.04
Crit Moves:	****				****				****	****		
Green/Cycle:	0.12	0.24	0.24	0.15	0.27	0.27	0.24	0.27	0.27	0.22	0.25	0.25
Volume/Cap:	0.55	0.31	0.35	0.35	0.55	0.51	0.41	0.50	0.55	0.55	0.41	0.16
Delay/Veh:	42.8	31.6	32.4	38.2	32.0	32.2	32.6	30.9	32.8	35.6	31.3	29.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.8	31.6	32.4	38.2	32.0	32.2	32.6	30.9	32.8	35.6	31.3	29.3
LOS by Move:	D	C	C	D	C	C	C	C	C	D	C	C
HCM2k95thQ:	209	167	164	121	317	247	221	308	310	268	221	68

Note: Queue reported is the distance per lane in feet.

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	4	0	2	0	4	0	2	0	4	0	2	0	4	0
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	4	1		2	4	1		2	4	1		2	4	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.12	0.24	0.24		0.15	0.27	0.27		0.24	0.27	0.27		0.22	0.25	0.25	
ArrivalType:	4				4				4				4			
ProgFactor:	0.98	0.92	0.92		0.96	0.93	0.93		0.93	0.92	0.93		0.95	0.92	0.90	
Q1:	3.1	2.9	2.8		2.2	6.1	4.7		3.8	5.4	5.3		5.0	4.2	1.2	
UpstreamVC:	0.00	0.00	0.00		0.47	0.47	0.47		0.00	0.00	0.00		0.29	0.29	0.29	
UpstreamAdj:	0.00	0.00	0.00		0.88	0.88	0.88		0.00	0.00	0.00		0.97	0.97	0.97	
EarlyArrAdj:	1.00	1.00	1.00		0.30	0.42	0.38		1.00	1.00	1.00		0.40	0.45	0.41	
Q2:	1.1	0.4	0.5		0.2	0.5	0.4		0.7	1.0	1.2		0.5	0.3	0.1	
HCM2KQueue:	4.2	3.3	3.3		2.4	6.6	5.0		4.5	6.4	6.5		5.5	4.5	1.3	
70th%Factor:	1.19	1.19	1.19		1.19	1.18	1.19		1.19	1.19	1.19		1.19	1.19	1.20	
HCM2k70thQ:	5.0	4.0	3.9		2.9	7.9	6.0		5.4	7.6	7.7		6.6	5.3	1.6	
85th%Factor:	1.56	1.57	1.57		1.58	1.54	1.55		1.56	1.54	1.54		1.55	1.56	1.59	
HCM2k85thQ:	6.6	5.2	5.2		3.8	10.2	7.8		7.0	9.9	10.0		8.6	7.0	2.1	
90th%Factor:	1.72	1.74	1.74		1.75	1.69	1.71		1.72	1.69	1.69		1.70	1.72	1.77	
HCM2k90thQ:	7.3	5.8	5.7		4.2	11.2	8.6		7.7	10.8	10.9		9.4	7.7	2.4	
95th%Factor:	1.97	2.00	2.00		2.03	1.92	1.95		1.97	1.92	1.92		1.94	1.97	2.06	
HCM2k95thQ:	8.4	6.7	6.6		4.8	12.7	9.9		8.9	12.3	12.4		10.7	8.8	2.7	
98th%Factor:	2.42	2.47	2.48		2.53	2.30	2.38		2.41	2.31	2.31		2.35	2.41	2.60	
HCM2k98thQ:	10.3	8.2	8.1		6.1	15.2	12.0		10.8	14.8	14.9		13.0	10.8	3.5	

EPAP No Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.876
Loss Time (sec):	12	Average Delay (sec/veh):	37.9
Optimal Cycle:	100	Level Of Service:	D

Street Name:	Hammer Lane						Holman Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2 1 0	2	0	3 0 1	2	0	3 1 0	2	0	3 1 0
Volume Module:	AM Peak Hour											
Base Vol:	466	393	241	97	657	92	129	777	412	645	696	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	466	393	241	97	657	92	129	777	412	645	696	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	507	427	262	105	714	100	140	845	448	701	757	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	507	427	262	105	714	100	140	845	448	701	757	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	507	427	262	105	714	100	140	845	448	701	757	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.84	0.84	0.90	0.89	0.83	0.90	0.85	0.85	0.90	0.89	0.89
Lanes:	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.84	0.16
Final Sat.:	3432	3196	1598	3432	5083	1583	3432	4819	1606	3432	6468	269
Capacity Analysis Module:												
Vol/Sat:	0.15	0.13	0.16	0.03	0.14	0.06	0.04	0.18	0.28	0.20	0.12	0.12
Crit Moves:	****				****				****	****		
Green/Cycle:	0.17	0.28	0.28	0.05	0.16	0.16	0.14	0.32	0.32	0.23	0.41	0.41
Volume/Cap:	0.88	0.48	0.59	0.59	0.88	0.39	0.29	0.55	0.88	0.88	0.29	0.29
Delay/Veh:	54.7	30.4	32.1	51.6	51.6	38.6	38.6	28.5	38.5	47.7	19.9	19.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.7	30.4	32.1	51.6	51.6	38.6	38.6	28.5	38.5	47.7	19.9	19.9
LOS by Move:	D	C	C	D	D	D	D	C	D	D	B	B
HCM2k95thQ:	496	286	370	87	412	131	93	334	660	612	181	181

Note: Queue reported is the distance per lane in feet.

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2 1	0	2	0	3 0	1	2	0	3 1	0	2	0	3 1	0
Lane Group:	L	RT		RT	L	T		R	L	RT		RT	L	RT		RT
#LnsInGrps:	2	3		3	2	3		1	2	4		4	2	4		4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.94	0.94		xxxx	xxxx	0.85		xxxx	0.95	0.95		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.92	0.92		0.93	0.98	0.83		0.93	0.93	0.93		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	0.91		0.97	0.91	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.84	0.84		0.90	0.89	0.83		0.90	0.85	0.85		0.90	0.89	0.89	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP No Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.17	0.28	0.28	0.05	0.16	0.16	0.14	0.32	0.32	0.23	0.41	0.41
ArrivalType:	4			4			4			4		
ProgFactor:	0.99	0.92	0.93	0.99	0.99	0.96	0.96	0.91	0.97	0.98	0.81	0.81
Q1:	7.0	5.0	6.5	1.5	7.0	2.4	1.7	6.5	12.5	9.5	3.2	3.2
UpstreamVC:	0.00	0.00	0.00	0.21	0.21	0.21	0.50	0.50	0.50	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.99	0.99	0.99	0.86	0.86	0.86	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	0.17	0.35	0.32	0.28	0.45	0.45	1.00	1.00	1.00
Q2:	3.9	0.9	1.4	0.2	1.8	0.2	0.1	0.5	2.5	4.3	0.4	0.4
HCM2KQueue:	10.9	5.9	7.8	1.7	8.8	2.6	1.8	7.0	15.0	13.8	3.6	3.6
70th%Factor:	1.18	1.19	1.18	1.20	1.18	1.19	1.20	1.18	1.17	1.17	1.19	1.19
HCM2k70thQ:	12.8	7.0	9.3	2.0	10.4	3.1	2.2	8.3	17.5	16.1	4.3	4.3
85th%Factor:	1.51	1.55	1.53	1.58	1.52	1.58	1.58	1.54	1.48	1.49	1.57	1.57
HCM2k85thQ:	16.4	9.1	12.0	2.7	13.4	4.1	2.9	10.8	22.2	20.5	5.7	5.7
90th%Factor:	1.63	1.70	1.67	1.77	1.66	1.75	1.77	1.68	1.59	1.60	1.73	1.73
HCM2k90thQ:	17.7	10.0	13.1	3.0	14.6	4.5	3.2	11.8	23.8	22.0	6.3	6.3
95th%Factor:	1.83	1.93	1.89	2.05	1.87	2.02	2.04	1.91	1.76	1.78	1.99	1.99
HCM2k95thQ:	19.9	11.4	14.8	3.5	16.5	5.2	3.7	13.3	26.4	24.5	7.3	7.3
98th%Factor:	2.13	2.33	2.25	2.58	2.21	2.52	2.57	2.28	2.02	2.05	2.46	2.46
HCM2k98thQ:	23.2	13.8	17.6	4.4	19.5	6.5	4.7	16.0	30.2	28.2	8.9	8.9

EPAP No Project AM Pk Hr

Base Queue Length Report (feet)

Node	Intersection	Northbound L	-- T	-- R	Southbound L	-- T	-- R	Eastbound L	-- T	-- R	Westbound L	-- T	-- R
#3	[HCM2k95thQ]:	896	38	90	18	620	620	362	633	351	143	1047	1047
#4	[HCM2k95thQ]:	480	123	164	28	453	453	166	699	699	321	447	5
#5	[HCM2k95thQ]:	103	348	722	206	602	116	176	890	21	622	415	45
#6	[HCM2k95thQ]:	29	375	375	334	279	279	355	355	355	381	381	381
#7	[HCM2k95thQ]:	47	47	47	108	108	108	22	58	0	34	55	55
#8	[HCM2k95thQ]:	727	153	66	63	567	444	466	1273	726	237	903	903
#9	[2Way95thQ]:	xxxx	xxxx	xxxx	15.3	xxxx	1.5	0.6	0.6	xxxx	xxxx	xxxx	xxxx
#10	[2Way95thQ]:	xxxx	xxxx	xxxx	5.5	5.5	5.5	0.5	0.5	xxxx	xxxx	xxxx	xxxx
#11	[HCM2k95thQ]:	0	0	0	9	0	8	26	20	0	0	14	0
#14	[2Way95thQ]:	xxxx	xxxx	xxxx	25.8	25.8	xxxx	xxxx	xxxx	xxxx	6.0	xxxx	36.5
#15	[2Way95thQ]:	14.4	14.4	xxxx	xxxx	xxxx	xxxx	41.5	xxxx	6.1	xxxx	xxxx	xxxx
#17	[HCM2k95thQ]:	164	51	90	28	113	12	15	160	153	187	72	72
#18	[HCM2k95thQ]:	94	273	301	269	274	21	96	54	120	181	25	284
#19	[HCM2k95thQ]:	305	57	177	372	97	250	241	327	267	245	221	240
#20	[2Way95thQ]:	xxxx	464	464	104	104	xxxx	xxxx	xxxx	xxxx	17.4	xxxx	xxxx
#21	[2Way95thQ]:	24.3	24.3	xxxx	xxxx	xxxx	xxxx	164	xxxx	55.3	xxxx	xxxx	xxxx
#24	[HCM2k95thQ]:	174	215	215	97	451	451	170	170	141	272	23	23
#25	[HCM2k95thQ]:	42	272	77	171	312	312	114	172	172	265	158	158
#26	[HCM2k95thQ]:	209	167	164	121	317	247	221	308	310	268	221	68
#27	[HCM2k95thQ]:	496	286	370	87	412	131	93	334	660	612	181	181

EPAP No Project AM Pk Hr With Recommended Improvements

Scenario Report

Scenario:	EPAP No Proj AM
Command:	EPAP No Proj AM
Volume:	EPAP AM
Geometry:	EPAP No Proj
Impact Fee:	Default Impact Fee
Trip Generation:	AM Pk Hr
Trip Distribution:	EPAP AM
Paths:	EPAP No Build
Routes:	Default Route
Configuration:	Default Configuration

EPAP No Project AM Pk Hr With Recommended Improvements

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	D	53.7	1.004	D	53.7	1.004	+ 0.000 D/V
# 8 Eight Mile Rd & West Ln	D	38.1	0.860	D	38.1	0.860	+ 0.000 D/V

EPAP No Project AM Pk Hr With Recommended Improvements

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]

EPAP No Project AM Pk Hr With Recommended Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

****

Intersection #3 Eight Mile Rd & Thornton Rd

****

Cycle (sec): 100 Critical Vol./Cap.(X): 1.004
Loss Time (sec): 12 Average Delay (sec/veh): 53.7
Optimal Cycle: 180 Level Of Service: D

****

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	1 0	1	1 0	2 0	1	1 0	1 1	0
Volume Module:	AM Peak Hour											
Base Vol:	836	46	103	5	26	229	169	983	326	80	1148	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	836	46	103	5	26	229	169	983	326	80	1148	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	909	50	112	5	28	249	184	1068	354	87	1248	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	909	50	112	5	28	249	184	1068	354	87	1248	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	909	50	112	5	28	249	184	1068	354	87	1248	15
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.98	0.83	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.98	0.02
Final Sat.:	3432	1862	1583	1769	1862	1583	1769	3538	1583	1769	3488	43
Capacity Analysis Module:												
Vol/Sat:	0.26	0.03	0.07	0.00	0.02	0.16	0.10	0.30	0.22	0.05	0.36	0.36
Crit Moves:	****					****	****				****	
Green/Cycle:	0.26	0.40	0.40	0.02	0.16	0.16	0.10	0.40	0.40	0.06	0.36	0.36
Volume/Cap:	1.00	0.07	0.18	0.18	0.10	1.00	1.00	0.76	0.57	0.76	1.00	1.00
Delay/Veh:	67.7	18.4	19.3	51.1	36.3	100.4	112.4	28.8	24.8	71.9	58.6	58.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.7	18.4	19.3	51.1	36.3	100.4	112.4	28.8	24.8	71.9	58.6	58.6
LOS by Move:	E	B	B	D	D	F	F	C	C	E	E	E
HCM2k95thQ:	878	38	92	18	38	565	354	621	345	141	1022	1022

****

Note: Queue reported is the distance per lane in feet.

****

EPAP No Project AM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	1	0 1	1	0	1	0 1	1	0	2	0 1	1	0	1	1 0
Lane Group:	L		T	R	L		T	R	L		T	R	L		RT	RT
#LnsInGrps:	2		1	1	1		1	1	1		2	1	1		2	2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	0.95	
Fnl Sat Adj:	0.90	0.98	0.83		0.93	0.98	0.83		0.93	0.93	0.83		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP No Project AM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.26	0.40	0.40		0.02	0.16	0.16		0.10	0.40	0.40		0.06	0.36	0.36	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.78	0.80		1.00	0.94	1.00		1.00	0.91	0.87		0.99	1.00	1.00	
Q1:	13.0	0.7	1.6		0.1	0.6	6.9		5.1	12.4	6.6		2.4	18.5	18.5	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.48	0.48	0.48		0.59	0.59	0.59	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.87	0.87	0.87		0.78	0.78	0.78	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.23	0.53	0.49		0.16	0.45	0.45	
Q2:	7.8	0.1	0.2		0.2	0.1	5.6		2.4	1.6	0.6		0.4	6.3	6.3	
HCM2KQueue:	20.8	0.7	1.8		0.3	0.7	12.6		7.5	14.0	7.3		2.8	24.7	24.7	
70th%Factor:	1.16	1.20	1.20		1.20	1.20	1.17		1.18	1.17	1.18		1.19	1.15	1.15	
HCM2k70thQ:	24.1	0.9	2.2		0.4	0.9	14.7		8.8	16.4	8.6		3.4	28.6	28.6	
85th%Factor:	1.45	1.59	1.58		1.60	1.59	1.50		1.53	1.49	1.54		1.57	1.43	1.43	
HCM2k85thQ:	30.1	1.2	2.9		0.6	1.2	18.8		11.4	20.8	11.1		4.4	35.4	35.4	
90th%Factor:	1.54	1.79	1.77		1.79	1.79	1.61		1.68	1.60	1.68		1.75	1.52	1.52	
HCM2k90thQ:	32.0	1.3	3.2		0.6	1.3	20.3		12.5	22.4	12.2		4.9	37.5	37.5	
95th%Factor:	1.69	2.08	2.04		2.09	2.08	1.80		1.90	1.78	1.90		2.01	1.65	1.65	
HCM2k95thQ:	35.1	1.5	3.7		0.7	1.5	22.6		14.1	24.8	13.8		5.7	40.9	40.9	
98th%Factor:	1.90	2.64	2.57		2.67	2.64	2.08		2.26	2.04	2.27		2.51	1.85	1.85	
HCM2k98thQ:	39.5	2.0	4.6		0.9	2.0	26.1		16.9	28.5	16.5		7.0	45.8	45.8	

EPAP No Project AM Pk Hr With Recommended Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.860
Loss Time (sec):	12	Average Delay (sec/veh):	38.1
Optimal Cycle:	94	Level Of Service:	D

Street Name:	West Lane								Eight Mile Road			
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	2	0 2	0 1		1	0 2	0 1		2	0 1	0 1		1	0 0	1 0	
Volume Module:	AM Peak Hour															
Base Vol:	398	273	64		31	445	185		194	735	522		106	584	8	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	398	273	64		31	445	185		194	735	522		106	584	8	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	433	297	70		34	484	201		211	799	567		115	635	9	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	433	297	70		34	484	201		211	799	567		115	635	9	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	433	297	70		34	484	201		211	799	567		115	635	9	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.90	0.93	0.83		0.93	0.93	0.83		0.90	0.98	0.83		0.93	0.98	0.98	
Lanes:	2.00	2.00	1.00		1.00	2.00	1.00		2.00	1.00	1.00		1.00	0.99	0.01	
Final Sat.:	3432	3538	1583		1769	3538	1583		3432	1862	1583		1769	1833	25	
Capacity Analysis Module:																
Vol/Sat:	0.13	0.08	0.04		0.02	0.14	0.13		0.06	0.43	0.36		0.07	0.35	0.35	
Crit Moves:	****					****				****			****			
Green/Cycle:	0.15	0.25	0.25		0.06	0.16	0.16		0.09	0.50	0.50		0.08	0.49	0.49	
Volume/Cap:	0.86	0.34	0.18		0.34	0.86	0.80		0.71	0.86	0.72		0.86	0.71	0.71	
Delay/Veh:	55.7	31.0	29.7		47.4	53.7	56.9		52.2	30.2	22.8		85.1	22.7	22.7	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	55.7	31.0	29.7		47.4	53.7	56.9		52.2	30.2	22.8		85.1	22.7	22.7	
LOS by Move:	E	C	C		D	D	E		D	C	C		F	C	C	
HCM2k95thQ:	355	174	75		70	479	380		233	927	561		203	590	590	

Note: Queue reported is the distance per lane in feet.

EPAP No Project AM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	2	0	2	0	1		1	0	2	0	1		2	0	1	0	1		1	0	0	1	0	
Lane Group:	L		T		R		L		T		R		L		T		R		L		RT		RT	
#LnsInGrps:	2		2		1		1		2		1		2		1		1		1		1		1	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:			8						8						8						8			
% Hev Veh:			2						2						2						2			
Grade:			0%						0%						0%						0%			
Parking/Hr:			No						No						No						No			
Bus Stp/Hr:			0						0						0						0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0						0						0						0			
ExclusiveRT:			Include						Include						Include						Include			
% RT Prtct:			0						0						0						0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx	xxxx				1	xxxx	xxxx				1	xxxx	xxxx				1	xxxx	xxxx			
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Hev Veh Adj:	0.98	0.98	0.98				0.98	0.98	0.98				0.98	0.98	0.98				0.98	0.98	0.98			
Grade Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Parking Adj:	xxxx	xxxx	1.00				xxxx	xxxx	1.00				xxxx	xxxx	1.00				xxxx	1.00	1.00			
Bus Stp Adj:	xxxx	xxxx	1.00				xxxx	xxxx	1.00				xxxx	xxxx	1.00				xxxx	1.00	1.00			
Area Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
RT Adj:	xxxx	xxxx	0.85				xxxx	xxxx	0.85				xxxx	xxxx	0.85				xxxx	1.00	1.00			
LT Adj:	0.95	xxxx	xxxxx				0.95	xxxx	xxxxx				0.95	xxxx	xxxxx				0.95	xxxx	xxxxx			
PedBike Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
HCM Sat Adj:	0.93	0.98	0.83				0.93	0.98	0.83				0.93	0.98	0.83				0.93	0.98	0.98			
Usr Sat Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
MLF Sat Adj:	0.97	0.95	1.00				1.00	0.95	1.00				0.97	1.00	1.00				1.00	1.00	1.00			
Fnl Sat Adj:	0.90	0.93	0.83				0.93	0.93	0.83				0.90	0.98	0.83				0.93	0.98	0.98			
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			

EPAP No Project AM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.15	0.25	0.25	0.06	0.16	0.16	0.09	0.50	0.50	0.08	0.49	0.49
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.92	0.90	0.99	0.99	0.98	0.99	0.89	0.82	1.00	0.83	0.83
Q1:	6.0	3.3	1.4	0.9	6.8	5.3	2.9	17.4	10.1	3.2	11.6	11.6
UpstreamVC:	0.17	0.17	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.23	0.23
UpstreamAdj:	0.99	0.99	0.99	0.00	0.00	0.00	0.00	0.00	0.00	0.98	0.98	0.98
EarlyArrAdj:	0.32	0.46	0.42	1.00	1.00	1.00	1.00	1.00	1.00	0.22	0.68	0.68
Q2:	1.5	0.2	0.1	0.5	3.6	2.8	1.8	4.8	2.4	0.9	1.6	1.6
HCM2KQueue:	7.5	3.5	1.5	1.4	10.4	8.1	4.7	22.1	12.5	4.1	13.2	13.2
70th%Factor:	1.18	1.19	1.20	1.20	1.18	1.18	1.19	1.16	1.17	1.19	1.17	1.17
HCM2k70thQ:	8.9	4.2	1.7	1.6	12.3	9.5	5.6	25.6	14.6	4.9	15.5	15.5
85th%Factor:	1.53	1.57	1.59	1.59	1.51	1.53	1.56	1.44	1.50	1.56	1.49	1.49
HCM2k85thQ:	11.5	5.5	2.3	2.2	15.8	12.3	7.4	31.9	18.7	6.4	19.7	19.7
90th%Factor:	1.68	1.74	1.77	1.77	1.64	1.67	1.72	1.53	1.61	1.73	1.61	1.61
HCM2k90thQ:	12.5	6.1	2.6	2.4	17.1	13.5	8.1	33.9	20.1	7.1	21.2	21.2
95th%Factor:	1.90	1.99	2.05	2.06	1.84	1.88	1.96	1.68	1.80	1.98	1.79	1.79
HCM2k95thQ:	14.2	7.0	3.0	2.8	19.2	15.2	9.3	37.1	22.4	8.1	23.6	23.6
98th%Factor:	2.26	2.46	2.59	2.60	2.15	2.24	2.39	1.88	2.08	2.43	2.06	2.06
HCM2k98thQ:	16.9	8.6	3.8	3.6	22.4	18.1	11.4	41.7	26.0	10.0	27.2	27.2

EPAP No Project AM Pk Hr With Recommended Improvements

Base Queue Length Report (feet)

Node	Intersection	Northbound L	-- T	-- R	Southbound L	-- T	-- R	Eastbound L	-- T	-- R	Westbound L	-- T	-- R
#3	[HCM2k95thQ]:	878	38	92	18	38	565	354	621	345	141	1022	1022
#8	[HCM2k95thQ]:	355	174	75	70	479	380	233	927	561	203	590	590

EPAP No Project PM Pk Hr

Scenario Report

Scenario: EPAP No Proj PM

Command: EPAP No Proj PM
Volume: EPAP PM
Geometry: EPAP No Proj
Impact Fee: Default Impact Fee
Trip Generation: PM Pk Hr
Trip Distribution: EPAP PM
Paths: EPAP No Build
Routes: Default Route
Configuration: Default Configuration

EPAP No Project PM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in D/V
# 3 Eight Mile Rd & Thornton Rd	D	42.4	0.915	D	42.4	0.915	+ 0.000
# 4 Eight Mile Rd & Davis Rd	C	29.0	0.812	C	29.0	0.812	+ 0.000
# 5 Eight Mile & Lower Sacto Rd	D	41.4	0.918	D	41.4	0.918	+ 0.000
# 6 West Lane & Armstrong Road	C	33.0	0.721	C	33.0	0.721	+ 0.000
# 7 West Lane & Ham Lane	A	4.2	0.254	A	4.2	0.254	+ 0.000
# 8 Eight Mile Rd & West Ln	F	107.0	1.288	F	107.0	1.288	+ 0.000
# 9 Eight Mile Road & Ham Lane	D	33.0	0.148	D	33.0	0.148	+ 0.000
# 10 Eight Mile & Leach Rd/St J	D	31.3	0.063	D	31.3	0.063	+ 0.000
# 11 Eight Mile & MickeGrove/Holman	A	2.7	0.317	A	2.7	0.317	+ 0.000
# 14 SR99 W Front & SB Ramps 8 Mile	B	11.8	0.374	B	11.8	0.374	+ 0.000
# 15 SR99 E Front & NB Ramps 8 Mile	C	24.4	0.653	C	24.4	0.653	+ 0.000
# 17 Holman & Lt Col Mark Taylor	C	29.1	0.412	C	29.1	0.412	+ 0.000
# 18 Morada Lane & West Lane	C	26.3	0.500	C	26.3	0.500	+ 0.000
# 19 Morada Lane & Holman Road	C	32.1	0.514	C	32.1	0.514	+ 0.000
# 20 SR99 W Front & SB Ramps Morada	F	62.9	0.465	F	62.9	0.465	+ 0.000
# 21 SR99 E Front & NB Ramps Morada	D	27.3	0.796	D	27.3	0.796	+ 0.000
# 24 West Ln & West Ln Frontage Rd	B	19.6	0.545	B	19.6	0.545	+ 0.000
# 25 West Lane & Knickerbocker Dr	C	24.8	0.540	C	24.8	0.540	+ 0.000
# 26 West Lane & Hammer Lane	D	35.8	0.728	D	35.8	0.728	+ 0.000
# 27 Hammer Lane & Holman Road	D	39.8	0.904	D	39.8	0.904	+ 0.000

EPAP No Project PM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 9 Eight Mile Road & Ham Lane	No / No	??? / ???
# 10 Eight Mile & Leach Rd/St J	No / No	??? / ???
# 14 SR99 W Front & SB Ramps 8 Mile	No / No	??? / ???
# 15 SR99 E Front & NB Ramps 8 Mile	No / No	??? / ???
# 20 SR99 W Front & SB Ramps Morada	No / No	??? / ???
# 21 SR99 E Front & NB Ramps Morada	Yes / Yes	??? / ???

EPAP No Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #9 Eight Mile Road & Ham Lane

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	1	0	0	0 1	0	1	0	0 0	0	0	0	1 0
Initial Vol:	0	0		0	13		0	13	6	726		0	0	851		20
ApproachDel:	xxxxxx				33.0				xxxxxx				xxxxxx			

Approach[southbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=26]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1629]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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EPAP No Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #9 Eight Mile Road & Ham Lane

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	1	0
Initial Vol:	0	0		0		13	0		13		6	726		0		0	851		20	

Major Street Volume: 1603
Minor Approach Volume: 26
Minor Approach Volume Threshold: 144 [less than minimum of 150]

SIGNAL WARRANT DISCLAIMER
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EPAP No Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #10 Eight Mile & Leach Rd/St J

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	0	0	1	0
Initial Vol:	0	0		0		6	0		5		6	681		0		0	854		5	
ApproachDel:	xxxxxx					31.3					xxxxxx					xxxxxx				

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=11]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1557]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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EPAP No Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 Eight Mile & Leach Rd/St J

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	0	0	1	0
Initial Vol:	0		0		0	6		0		5	6	681			0	0	854			5

Major Street Volume: 1546
Minor Approach Volume: 11
Minor Approach Volume Threshold: 103

SIGNAL WARRANT DISCLAIMER
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EPAP No Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	112			7	257	143			0	0		0		0	26		0		318
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					11.8				

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.1]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=344]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=863]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP No Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	112			7	257	143			0	0		0		0	26		0	318	

Major Street Volume: 519
Minor Approach Volume: 344
Minor Approach Volume Threshold: 499

SIGNAL WARRANT DISCLAIMER
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EPAP No Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	60	234			0	0	204		173		266		0		50	0		0		0
ApproachDel:	xxxxxx					xxxxxx					24.4					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=2.1]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=316]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=987]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP No Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	60	234			0		0	204		173	266		0		50		0		0	0

Major Street Volume: 671
Minor Approach Volume: 316
Minor Approach Volume Threshold: 546

SIGNAL WARRANT DISCLAIMER
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EPAP No Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #20 SR99 W Front & SB Ramps Morada

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	73		290		30	101		0		0		0		0	372		0		16
ApproachDel:	20.3					62.9					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=2.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=363]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=882]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=2.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=131]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=882]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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EPAP No Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #20 SR99 W Front & SB Ramps Morada

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	73	290			30	101			0	0		0		0	372		0		16

Major Street Volume: 388
Minor Approach Volume: 363
Minor Approach Volume Threshold: 611

SIGNAL WARRANT DISCLAIMER
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EPAP No Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #21 SR99 E Front & NB Ramps Morada

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0
Initial Vol:	190	223			0		0	262		13	120		0	547			0		0	0
ApproachDel:	xxxxxx					xxxxxx					27.3					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=5.1]
SUCCEED - Vehicle-hours >= 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=667]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1355]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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EPAP No Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #21 SR99 E Front & NB Ramps Morada

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1 0 0 0			0 0 0 1 0			1 0 0 0 1			0 0 0 0 0		
Initial Vol:	190	223	0	0	262	13	120	0	547	0	0	0

Major Street Volume: 688
Minor Approach Volume: 667
Minor Approach Volume Threshold: 410

SIGNAL WARRANT DISCLAIMER
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EPAP No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.915
Loss Time (sec):	12	Average Delay (sec/veh):	42.4
Optimal Cycle:	117	Level Of Service:	D

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	0 1	0	1 0	2 0	1	1 0	1 1	0
Volume Module:PM Peak Hour												
Base Vol:	422	20	49	18	61	219	174	1454	583	73	1229	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	422	20	49	18	61	219	174	1454	583	73	1229	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	459	22	53	20	66	238	189	1580	634	79	1336	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	459	22	53	20	66	238	189	1580	634	79	1336	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	459	22	53	20	66	238	189	1580	634	79	1336	5
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.87	0.87	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	2.00	1.00	1.00	1.00	0.22	0.78	1.00	2.00	1.00	1.00	1.99	0.01
Final Sat.:	3432	1862	1583	1769	358	1286	1769	3538	1583	1769	3520	14
Capacity Analysis Module:												
Vol/Sat:	0.13	0.01	0.03	0.01	0.19	0.19	0.11	0.45	0.40	0.04	0.38	0.38
Crit Moves:	****				****		****				****	
Green/Cycle:	0.15	0.26	0.26	0.09	0.20	0.20	0.12	0.48	0.48	0.05	0.41	0.41
Volume/Cap:	0.92	0.04	0.13	0.13	0.92	0.92	0.92	0.92	0.83	0.92	0.92	0.92
Delay/Veh:	63.5	27.6	28.3	42.6	67.8	67.8	83.4	33.1	29.8	119.7	36.8	36.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	63.5	27.6	28.3	42.6	67.8	67.8	83.4	33.1	29.8	119.7	36.8	36.8
LOS by Move:	E	C	C	D	E	E	F	C	C	F	D	D
HCM2k95thQ:	489	23	60	33	576	576	265	892	612	147	886	886

Note: Queue reported is the distance per lane in feet.

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	1	0 1	1	0	0	1 0	1	0	2	0 1	1	0	1	1 0
Lane Group:	L		T	R	L		RT	RT	L		T	R	L		RT	RT
#LnsInGrps:	2		1	1	1		1	1	1		2	1	1		2	2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.88	0.88		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.87	0.87		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	0.95	
Fnl Sat Adj:	0.90	0.98	0.83		0.93	0.87	0.87		0.93	0.93	0.83		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.15	0.26	0.26		0.09	0.20	0.20		0.12	0.48	0.48		0.05	0.41	0.41	
ArrivalType:	4				4				4				4			
ProgFactor:	0.99	0.89	0.89		0.97	0.99	0.99		1.00	0.94	0.89		1.00	0.96	0.96	
Q1:	6.4	0.4	1.0		0.5	8.2	8.2		5.2	20.3	13.4		2.2	17.7	17.7	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.99	0.99	0.99		0.68	0.68	0.68	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.11	0.11	0.11		0.67	0.67	0.67	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.03	0.07	0.07		0.11	0.42	0.42	
Q2:	4.2	0.0	0.1		0.1	4.6	4.6		0.3	0.8	0.3		0.7	3.3	3.3	
HCM2KQueue:	10.7	0.4	1.2		0.6	12.8	12.8		5.5	21.2	13.8		2.9	21.0	21.0	
70th%Factor:	1.18	1.20	1.20		1.20	1.17	1.17		1.19	1.16	1.17		1.19	1.16	1.16	
HCM2k70thQ:	12.6	0.5	1.4		0.8	15.1	15.1		6.5	24.5	16.1		3.5	24.3	24.3	
85th%Factor:	1.51	1.60	1.59		1.59	1.50	1.50		1.55	1.45	1.49		1.57	1.45	1.45	
HCM2k85thQ:	16.1	0.7	1.8		1.0	19.2	19.2		8.5	30.7	20.5		4.6	30.4	30.4	
90th%Factor:	1.63	1.79	1.78		1.79	1.61	1.61		1.70	1.54	1.60		1.75	1.54	1.54	
HCM2k90thQ:	17.4	0.8	2.1		1.1	20.7	20.7		9.3	32.6	22.0		5.1	32.3	32.3	
95th%Factor:	1.83	2.09	2.06		2.08	1.79	1.79		1.94	1.69	1.78		2.01	1.69	1.69	
HCM2k95thQ:	19.5	0.9	2.4		1.3	23.0	23.0		10.6	35.7	24.5		5.9	35.4	35.4	
98th%Factor:	2.14	2.67	2.62		2.65	2.07	2.07		2.36	1.90	2.05		2.50	1.90	1.90	
HCM2k98thQ:	22.8	1.2	3.0		1.7	26.6	26.6		12.9	40.1	28.2		7.3	39.9	39.9	

EPAP No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.812
Loss Time (sec):	12	Average Delay (sec/veh):	29.0
Optimal Cycle:	80	Level Of Service:	C

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	1	0	0	1	0	1	0	1	1	0	1	0	2	0	1
Volume Module:	PM Peak Hour											
Base Vol:	178	85	73	8	98	114	95	1081	265	72	1098	3
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	178	85	73	8	98	114	95	1081	265	72	1098	3
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	193	92	79	9	107	124	103	1175	288	78	1193	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	193	92	79	9	107	124	103	1175	288	78	1193	3
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	193	92	79	9	107	124	103	1175	288	78	1193	3
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.90	0.90	0.93	0.90	0.90	0.93	0.93	0.83
Lanes:	1.00	1.00	1.00	1.00	0.46	0.54	1.00	1.61	0.39	1.00	2.00	1.00
Final Sat.:	1769	1862	1583	1769	791	920	1769	2756	676	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.11	0.05	0.05	0.00	0.13	0.13	0.06	0.43	0.43	0.04	0.34	0.00
Crit Moves:	****				****			****		****		
Green/Cycle:	0.13	0.27	0.27	0.03	0.17	0.17	0.09	0.52	0.52	0.05	0.49	0.49
Volume/Cap:	0.81	0.18	0.18	0.18	0.81	0.81	0.68	0.81	0.81	0.81	0.68	0.00
Delay/Veh:	60.7	27.9	28.0	49.4	56.3	56.3	56.5	22.6	22.6	85.5	20.4	12.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.7	27.9	28.0	49.4	56.3	56.3	56.5	22.6	22.6	85.5	20.4	12.8
LOS by Move:	E	C	C	D	E	E	E	C	C	F	C	B
HCM2k95thQ:	378	100	88	23	422	422	145	685	685	214	577	2

Note: Queue reported is the distance per lane in feet.

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L - T - R						L - T - R						L - T - R						L - T - R					
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	1	0	1	0	1	1	0	0	1	0	1	0	1	1	0	1	0	2	0	1				
Lane Group:	L		T		R	L		RT		RT	L		RT		RT	L		T		R				
#LnsInGrps:	1		1		1	1		1		1	1		2		2	1		2		1				
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12				
CrsswalkWid:	8					8					8					8								
% Hev Veh:	2					2					2					2								
Grade:	0%					0%					0%					0%								
Parking/Hr:	No					No					No					No								
Bus Stp/Hr:	0					0					0					0								
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:	0					0					0					0								
ExclusiveRT:	Include					Include					Include					Include								
% RT Prtct:	0					0					0					0								
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx						
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98												
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
Parking Adj:	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	xxxx	1.00												
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	xxxx	1.00												
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
RT Adj:	xxxx	xxxx	0.85	xxxx	0.92	0.92	xxxx	0.97	0.97	xxxx	xxxx	0.85												
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx												
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.90	0.90	0.93	0.95	0.95	0.93	0.98	0.83												
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00												
Fnl Sat Adj:	0.93	0.98	0.83	0.93	0.90	0.90	0.93	0.90	0.90	0.93	0.93	0.83												
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.13	0.27	0.27	0.03	0.17	0.17	0.09	0.52	0.52	0.05	0.49	0.49
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.89	0.89	0.99	0.98	0.98	0.99	0.84	0.84	1.00	0.81	0.68
Q1:	5.2	1.7	1.5	0.2	6.1	6.1	2.8	14.9	14.9	2.1	10.8	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.92	0.92	0.92	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.26	0.26	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.06	0.19	0.19	1.00	1.00	1.00
Q2:	2.9	0.2	0.2	0.2	3.0	3.0	0.1	0.8	0.8	2.2	2.0	0.0
HCM2KQueue:	8.0	2.0	1.7	0.4	9.1	9.1	2.9	15.7	15.7	4.3	12.9	0.0
70th%Factor:	1.18	1.20	1.20	1.20	1.18	1.18	1.19	1.17	1.17	1.19	1.17	1.20
HCM2k70thQ:	9.5	2.3	2.1	0.5	10.7	10.7	3.4	18.3	18.3	5.2	15.1	0.0
85th%Factor:	1.53	1.58	1.58	1.60	1.52	1.52	1.57	1.48	1.48	1.56	1.50	1.60
HCM2k85thQ:	12.3	3.1	2.7	0.7	13.8	13.8	4.5	23.1	23.1	6.8	19.2	0.1
90th%Factor:	1.67	1.76	1.77	1.79	1.65	1.65	1.75	1.58	1.58	1.72	1.61	1.80
HCM2k90thQ:	13.4	3.5	3.0	0.8	15.0	15.0	5.0	24.8	24.8	7.5	20.7	0.1
95th%Factor:	1.88	2.04	2.05	2.09	1.86	1.86	2.01	1.75	1.75	1.97	1.79	2.10
HCM2k95thQ:	15.1	4.0	3.5	0.9	16.9	16.9	5.8	27.4	27.4	8.5	23.1	0.1
98th%Factor:	2.24	2.56	2.58	2.67	2.20	2.20	2.50	2.00	2.00	2.42	2.07	2.70
HCM2k98thQ:	18.0	5.0	4.4	1.2	19.9	19.9	7.2	31.3	31.3	10.5	26.7	0.1

EPAP No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.918
Loss Time (sec):	12	Average Delay (sec/veh):	41.4
Optimal Cycle:	119	Level Of Service:	D

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:PM Peak Hour												
Base Vol:	49	372	339	61	334	112	98	1001	22	375	1111	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	49	372	339	61	334	112	98	1001	22	375	1111	42
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	53	404	368	66	363	122	107	1088	24	408	1208	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	53	404	368	66	363	122	107	1088	24	408	1208	46
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	53	404	368	66	363	122	107	1088	24	408	1208	46
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.98	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3432	1862	1583	1769	1862	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.02	0.22	0.23	0.04	0.19	0.08	0.06	0.31	0.02	0.23	0.34	0.03
Crit Moves:			****	****				****		****		
Green/Cycle:	0.02	0.25	0.25	0.04	0.27	0.27	0.09	0.33	0.33	0.25	0.50	0.50
Volume/Cap:	0.72	0.86	0.92	0.92	0.72	0.28	0.69	0.92	0.05	0.92	0.69	0.06
Delay/Veh:	76.6	50.0	62.1	125.9	37.7	29.0	56.3	43.3	22.5	60.5	20.3	13.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	76.6	50.0	62.1	125.9	37.7	29.0	56.3	43.3	22.5	60.5	20.3	13.0
LOS by Move:	E	D	E	F	D	C	E	D	C	E	C	B
HCM2k95thQ:	104	641	655	215	498	140	223	878	22	703	581	26

Note: Queue reported is the distance per lane in feet.

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	1	0 1	1	0	1	0 1	1	0	2	0 1	1	0	2	0 1
Lane Group:	L		T	R	L		T	R	L		T	R	L		T	R
#LnsInGrps:	2		1	1	1		1	1	1		2	1	1		2	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.90	0.98	0.83		0.93	0.98	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.02	0.25	0.25		0.04	0.27	0.27		0.09	0.33	0.33		0.25	0.50	0.50	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.98	0.99		1.00	0.95	0.90		0.99	0.98	0.84		0.99	0.81	0.68	
Q1:		0.8	10.5	9.8		1.8	8.7	2.4		2.8	14.9	0.4		10.9	10.9	0.4
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:		1.3	4.0	5.0		2.5	2.2	0.4		1.7	5.9	0.0		5.2	2.1	0.1
HCM2KQueue:		2.0	14.5	14.9		4.4	10.9	2.8		4.5	20.8	0.4		16.1	13.0	0.5
70th%Factor:	1.20	1.17	1.17		1.19	1.18	1.19		1.19	1.16	1.20		1.17	1.17	1.20	
HCM2k70thQ:		2.4	17.0	17.4		5.2	12.8	3.3		5.4	24.1	0.5		18.8	15.2	0.6
85th%Factor:	1.58	1.48	1.48		1.56	1.51	1.57		1.56	1.45	1.60		1.48	1.49	1.59	
HCM2k85thQ:		3.2	21.5	22.0		6.8	16.5	4.4		7.1	30.1	0.7		23.8	19.4	0.8
90th%Factor:	1.76	1.59	1.59		1.72	1.63	1.75		1.72	1.54	1.79		1.58	1.61	1.79	
HCM2k90thQ:		3.6	23.1	23.6		7.5	17.8	4.9		7.8	32.0	0.8		25.4	20.9	0.9
95th%Factor:	2.04	1.77	1.76		1.97	1.83	2.01		1.97	1.69	2.09		1.75	1.79	2.08	
HCM2k95thQ:		4.2	25.7	26.2		8.6	19.9	5.6		8.9	35.1	0.9		28.1	23.2	1.1
98th%Factor:	2.55	2.03	2.02		2.41	2.13	2.51		2.40	1.90	2.67		1.99	2.07	2.66	
HCM2k98thQ:		5.2	29.4	30.0		10.5	23.3	7.0		10.9	39.5	1.1		32.0	26.8	1.3

EPAP No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.721
Loss Time (sec):	12	Average Delay (sec/veh):	33.0
Optimal Cycle:	62	Level Of Service:	C

Street Name:	West Lane						Armstrong Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	0 0	1!	0 0	0 0	1!	0 0
Volume Module:	PM Peak Hour											
Base Vol:	3	582	41	132	476	35	29	60	4	78	202	208
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	582	41	132	476	35	29	60	4	78	202	208
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	3	633	45	143	517	38	32	65	4	85	220	226
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	633	45	143	517	38	32	65	4	85	220	226
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	633	45	143	517	38	32	65	4	85	220	226
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.92	0.92	0.93	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92
Lanes:	1.00	1.87	0.13	1.00	1.86	0.14	0.31	0.65	0.04	0.16	0.41	0.43
Final Sat.:	1769	3272	230	1769	3263	240	568	1176	78	278	720	742
Capacity Analysis Module:												
Vol/Sat:	0.00	0.19	0.19	0.08	0.16	0.16	0.06	0.06	0.06	0.30	0.30	0.30
Crit Moves:		****		****					****	****		
Green/Cycle:	0.00	0.27	0.27	0.11	0.38	0.38	0.08	0.08	0.08	0.42	0.42	0.42
Volume/Cap:	0.42	0.72	0.72	0.72	0.42	0.42	0.72	0.72	0.72	0.72	0.72	0.72
Delay/Veh:	82.8	36.0	36.0	55.0	23.3	23.3	61.8	61.8	61.8	27.5	27.5	27.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	82.8	36.0	36.0	55.0	23.3	23.3	61.8	61.8	61.8	27.5	27.5	27.5
LOS by Move:	F	D	D	E	C	C	E	E	E	C	C	C
HCM2k95thQ:	26	496	496	281	283	283	226	226	226	590	590	590

Note: Queue reported is the distance per lane in feet.

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	1	1	0	1 0	1	1	0	0 0	1!	0	0	0 0	1!	0	0
Lane Group:	L	RT		RT	L	RT		RT	LTR	LTR		LTR	LTR	LTR		LTR
#LnsInGrps:	1	2		2	1	2		2	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		4	4		4	4	4		4
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98		0.98	0.98	0.98		0.98
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
RT Adj:	xxxx	0.99	0.99		xxxx	0.99	0.99		0.99	0.99		0.99	0.94	0.94		0.94
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.99	0.99		0.99	0.99	0.99		0.99
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
HCM Sat Adj:	0.93	0.97	0.97		0.93	0.97	0.97		0.96	0.96		0.96	0.92	0.92		0.92
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
MLF Sat Adj:	1.00	0.95	0.95		1.00	0.95	0.95		1.00	1.00		1.00	1.00	1.00		1.00
Fnl Sat Adj:	0.93	0.92	0.92		0.93	0.92	0.92		0.96	0.96		0.96	0.92	0.92		0.92
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.00	0.27	0.27	0.11	0.38	0.38	0.08	0.08	0.08	0.42	0.42	0.42
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.95	0.95	0.99	0.85	0.85	0.99	0.99	0.99	0.89	0.89	0.89
Q1:	0.1	8.6	8.6	3.8	5.1	5.1	2.7	2.7	2.7	10.8	10.8	10.8
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.4	2.3	2.3	2.0	0.7	0.7	1.9	1.9	1.9	2.4	2.4	2.4
HCM2KQueue:	0.5	10.9	10.9	5.8	5.9	5.9	4.6	4.6	4.6	13.2	13.2	13.2
70th%Factor:	1.20	1.18	1.18	1.19	1.19	1.19	1.19	1.19	1.19	1.17	1.17	1.17
HCM2k70thQ:	0.6	12.8	12.8	6.9	6.9	6.9	5.5	5.5	5.5	15.5	15.5	15.5
85th%Factor:	1.59	1.51	1.51	1.55	1.55	1.55	1.56	1.56	1.56	1.49	1.49	1.49
HCM2k85thQ:	0.8	16.4	16.4	9.0	9.1	9.1	7.2	7.2	7.2	19.7	19.7	19.7
90th%Factor:	1.79	1.63	1.63	1.70	1.70	1.70	1.72	1.72	1.72	1.61	1.61	1.61
HCM2k90thQ:	0.9	17.7	17.7	9.9	9.9	9.9	7.9	7.9	7.9	21.2	21.2	21.2
95th%Factor:	2.08	1.83	1.83	1.93	1.93	1.93	1.96	1.96	1.96	1.79	1.79	1.79
HCM2k95thQ:	1.1	19.8	19.8	11.2	11.3	11.3	9.0	9.0	9.0	23.6	23.6	23.6
98th%Factor:	2.66	2.13	2.13	2.34	2.34	2.34	2.40	2.40	2.40	2.06	2.06	2.06
HCM2k98thQ:	1.4	23.2	23.2	13.6	13.7	13.7	11.0	11.0	11.0	27.2	27.2	27.2

EPAP No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.254
Loss Time (sec):	9	Average Delay (sec/veh):	4.2
Optimal Cycle:	24	Level Of Service:	A

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0 1	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Volume Module:PM Peak Hour												
Base Vol:	0	2	21	18	0	1	5	669	0	16	545	45
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2	21	18	0	1	5	669	0	16	545	45
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	2	23	20	0	1	5	727	0	17	592	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2	23	20	0	1	5	727	0	17	592	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2	23	20	0	1	5	727	0	17	592	49
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.86	0.86	0.71	1.00	0.71	0.93	0.93	0.95	0.93	0.92	0.92
Lanes:	0.00	0.09	0.91	0.95	0.00	0.05	1.00	2.00	0.00	1.00	1.85	0.15
Final Sat.:	0	142	1491	1273	0	71	1769	3538	0	1769	3232	267
Capacity Analysis Module:												
Vol/Sat:	0.00	0.02	0.02	0.02	0.00	0.02	0.00	0.21	0.00	0.01	0.18	0.18
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.06	0.06	0.06	0.00	0.06	0.01	0.81	0.00	0.04	0.84	0.84
Volume/Cap:	0.00	0.25	0.25	0.25	0.00	0.25	0.22	0.25	0.00	0.25	0.22	0.22
Delay/Veh:	0.0	46.2	46.2	46.5	0.0	46.5	53.2	2.3	0.0	48.6	1.7	1.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	46.2	46.2	46.5	0.0	46.5	53.2	2.3	0.0	48.6	1.7	1.7
LOS by Move:	A	D	D	D	A	D	D	A	A	D	A	A
HCM2k95thQ:	0	51	51	45	0	45	21	18	0	41	15	15

Note: Queue reported is the distance per lane in feet.

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #7 West Lane & Ham Lane

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        0  0  0  1  0    0  0  1! 0  0    1  0  1  1  0    1  0  1  1  0
Lane Group:  xxxx  RT     RT   LTR  LTR   LTR    L   RT     RT    L   RT     RT
#LnsInGrps:     0    1     1     1    1     1     1    2     2     1    2     2
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:         8                8                8                8
% Hev Veh:           2                2                2                2
Grade:              0%               0%               0%               0%
Parking/Hr:         No               No               No               No
Bus Stp/Hr:          0                0                0                0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:         0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:          0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:  xxxx xxxx  xxxx     5 xxxx     5     1 xxxx  xxxx     1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  xxxx 1.00  1.00  1.00 xxxx  1.00  1.00 1.00 xxxxx  1.00 1.00  1.00
Hev Veh Adj: xxxx 0.98  0.98  0.98 xxxx  0.98  0.98 0.98 xxxxx  0.98 0.98  0.98
Grade Adj:   xxxx 1.00  1.00  1.00 xxxx  1.00  1.00 1.00 xxxxx  1.00 1.00  1.00
Parking Adj: xxxx 1.00  1.00  1.00 xxxx  1.00  xxxx 1.00 xxxxx  xxxx 1.00  1.00
Bus Stp Adj: xxxx 1.00  1.00  1.00 xxxx  1.00  xxxx 1.00 xxxxx  xxxx 1.00  1.00
Area Adj:    xxxx 1.00  1.00  1.00 xxxx  1.00  1.00 1.00 xxxxx  1.00 1.00  1.00
RT Adj:      xxxx 0.88  0.88  0.99 xxxx  0.99  xxxx xxxx xxxxx  xxxx 0.99  0.99
LT Adj:      xxxx xxxx xxxxx  0.73 xxxx  0.73  0.95 xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 1.00 0.86  0.86  0.71 1.00  0.71  0.93 0.98  1.00  0.93 0.97  0.97
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 0.95  0.95  1.00 0.95  0.95
Fnl Sat Adj: 1.00 0.86  0.86  0.71 1.00  0.71  0.93 0.93  0.95  0.93 0.92  0.92
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  0.00 1.00  1.00  1.00 0.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
```


EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Base Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	xxxxxx	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	xxxxxx	5.06	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	xxxxxx	6.06	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	xxxxxx	6.06	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	xxxxxx	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	xxxxxx	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	xxxxxx	20	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	xxxxxx	0.95	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	0.00	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	xxxxxx	0.54	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	xxxxxx	25	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	xxxxxx	0.69	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	xxxxxx	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	xxxxxx	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	xxxxxx	0.00	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	xxxxxx	0.92	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	xxxxxx	0.42	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	xxxxxx	5.64	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	xxxxxx	0.21	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	1.00	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	xxxxxx	1.44	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	xxxxxx	1.00	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	xxxxxx	0.64	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	xxxxxx	0.73	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	xxxxxx	0.73	xxxxxx	xxxxxx

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.00	0.06	0.06	0.06	0.00	0.06	0.01	0.81	0.00	0.04	0.84	0.84
ArrivalType:		4				4			4			4				
ProgFactor:	1.00	0.98	0.98	0.98	1.00	0.98	1.00	0.00	1.00	0.99	0.00	0.00
Q1:	0.0	0.7	0.7	0.5	0.0	0.5	0.1	0.0	0.0	0.5	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Q2:	0.0	0.3	0.3	0.3	0.0	0.3	0.3	0.3	0.0	0.3	0.3	0.3
HCM2KQueue:	0.0	1.0	1.0	0.9	0.0	0.9	0.4	0.3	0.0	0.8	0.3	0.3
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	0.0	1.2	1.2	1.0	0.0	1.0	0.5	0.4	0.0	0.9	0.3	0.3
85th%Factor:	1.60	1.59	1.59	1.59	1.60	1.59	1.60	1.60	1.60	1.59	1.60	1.60
HCM2k85thQ:	0.0	1.6	1.6	1.4	0.0	1.4	0.6	0.5	0.0	1.3	0.4	0.4
90th%Factor:	1.80	1.78	1.78	1.78	1.80	1.78	1.79	1.79	1.80	1.78	1.79	1.79
HCM2k90thQ:	0.0	1.7	1.7	1.5	0.0	1.5	0.7	0.6	0.0	1.4	0.5	0.5
95th%Factor:	2.10	2.07	2.07	2.07	2.10	2.07	2.09	2.09	2.10	2.07	2.09	2.09
HCM2k95thQ:	0.0	2.0	2.0	1.8	0.0	1.8	0.8	0.7	0.0	1.6	0.6	0.6
98th%Factor:	2.70	2.63	2.63	2.64	2.70	2.64	2.67	2.67	2.70	2.64	2.68	2.68
HCM2k98thQ:	0.0	2.6	2.6	2.3	0.0	2.3	1.1	0.9	0.0	2.1	0.8	0.8

EPAP No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	1.288
Loss Time (sec):	12	Average Delay (sec/veh):	107.0
Optimal Cycle:	180	Level Of Service:	F

Street Name:	West Lane								Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	2	0	1	1	0	2	0	1	1	0	1	0	1	0
Volume Module:	PM Peak Hour															
Base Vol:	528	385	84		14	320	204		264	728	458		68	865	3	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	528	385	84		14	320	204		264	728	458		68	865	3	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	574	418	91		15	348	222		287	791	498		74	940	3	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	574	418	91		15	348	222		287	791	498		74	940	3	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	574	418	91		15	348	222		287	791	498		74	940	3	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.98	0.83		0.93	0.98	0.98	
Lanes:	1.00	2.00	1.00		1.00	2.00	1.00		1.00	1.00	1.00		1.00	0.99	0.01	
Final Sat.:	1769	3538	1583		1769	3538	1583		1769	1862	1583		1769	1856	6	
Capacity Analysis Module:																
Vol/Sat:	0.32	0.12	0.06		0.01	0.10	0.14		0.16	0.42	0.31		0.04	0.51	0.51	
Crit Moves:	****						****		****					****		
Green/Cycle:	0.25	0.34	0.34		0.02	0.11	0.11		0.13	0.47	0.47		0.05	0.39	0.39	
Volume/Cap:	1.29	0.35	0.17		0.35	0.90	1.29		1.29	0.90	0.67		0.90	1.29	1.29	
Delay/Veh:	183.1	25.2	23.5		52.9	68.0	210.7		202.8	36.2	22.6		113.8	170	170.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	183.1	25.2	23.5		52.9	68.0	210.7		202.8	36.2	22.6		113.8	170	170.1	
LOS by Move:	F	C	C		D	E	F		F	D	C		F	F	F	
HCM2k95thQ:	1344	212	83		46	408	674		819	1016	489		143	2101	2101	

Note: Queue reported is the distance per lane in feet.

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	2	0	1	1	0	2	0	1	1	0	1	0	1	1	0	0	1	0
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	2	1		1	2	1		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.98	0.83		0.93	0.98	0.98	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.25	0.34	0.34		0.02	0.11	0.11		0.13	0.47	0.47		0.05	0.39	0.39	
ArrivalType:	4				4				4				4			
ProgFactor:	1.00	0.87	0.85		0.99	1.00	1.00		1.00	0.93	0.83		1.00	1.00	1.00	
Q1:	15.9	4.0	1.5		0.4	5.0	6.2		8.0	18.7	8.8		2.0	26.2	26.2	
UpstreamVC:	0.23	0.23	0.23		0.00	0.00	0.00		0.00	0.00	0.00		0.31	0.31	0.31	
UpstreamAdj:	0.98	0.98	0.98		0.00	0.00	0.00		0.00	0.00	0.00		0.96	0.96	0.96	
EarlyArrAdj:	0.44	0.54	0.49		1.00	1.00	1.00		1.00	1.00	1.00		0.16	0.59	0.59	
Q2:	17.8	0.3	0.1		0.5	3.7	9.2		11.2	5.8	1.9		0.8	28.8	28.8	
HCM2KQueue:	33.8	4.3	1.6		0.9	8.7	15.4		19.2	24.6	10.7		2.8	55.0	55.0	
70th%Factor:	1.14	1.19	1.20		1.20	1.18	1.17		1.16	1.15	1.18		1.19	1.13	1.13	
HCM2k70thQ:	38.6	5.1	1.9		1.1	10.3	18.0		22.3	28.4	12.6		3.4	61.9	61.9	
85th%Factor:	1.40	1.56	1.58		1.59	1.52	1.48		1.46	1.43	1.51		1.57	1.35	1.35	
HCM2k85thQ:	47.2	6.7	2.6		1.4	13.3	22.7		28.0	35.2	16.1		4.5	74.1	74.1	
90th%Factor:	1.47	1.72	1.77		1.78	1.66	1.59		1.55	1.52	1.63		1.75	1.43	1.43	
HCM2k90thQ:	49.8	7.4	2.9		1.6	14.5	24.4		29.8	37.3	17.5		5.0	78.4	78.4	
95th%Factor:	1.59	1.97	2.05		2.07	1.87	1.76		1.71	1.65	1.83		2.01	1.53	1.53	
HCM2k95thQ:	53.8	8.5	3.3		1.8	16.3	27.0		32.7	40.6	19.6		5.7	84.0	84.0	
98th%Factor:	1.77	2.42	2.58		2.63	2.21	2.01		1.93	1.85	2.14		2.50	1.71	1.71	
HCM2k98thQ:	59.9	10.4	4.2		2.3	19.3	30.8		37.0	45.5	22.8		7.1	94.3	94.3	

EPAP No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: D[33.0]

Street Name:	Ham Lane									Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	1	0
Volume Module:	PM Peak Hour																			
Base Vol:	0	0	0		13	0		13	6	726	0	0	851		20					
Growth Adj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00					
Initial Bse:	0	0	0		13	0		13	6	726	0	0	851		20					
User Adj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00					
PHF Adj:	0.92	0.92	0.92		0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92		0.92					
PHF Volume:	0	0	0		14	0		14	7	789	0	0	925		22					
Reduct Vol:	0	0	0		0	0		0	0	0	0	0	0		0					
FinalVolume:	0	0	0		14	0		14	7	789	0	0	925		22					
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx		6.4	xxxx		6.2	4.1	xxxx	xxxxx	xxxxx	xxxx		xxxxx					
FollowUpTim:	xxxxx	xxxx	xxxxx		3.5	xxxx		3.3	2.2	xxxx	xxxxx	xxxxx	xxxx		xxxxx					
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx		1738	xxxx		936	947	xxxx	xxxxx	xxxx	xxxx		xxxxx					
Potent Cap.:	xxxx	xxxx	xxxxx		96	xxxx		321	725	xxxx	xxxxx	xxxx	xxxx		xxxxx					
Move Cap.:	xxxx	xxxx	xxxxx		95	xxxx		321	725	xxxx	xxxxx	xxxx	xxxx		xxxxx					
Volume/Cap:	xxxx	xxxx	xxxx		0.15	xxxx		0.04	0.01	xxxx	xxxx	xxxx	xxxx		xxxx					
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx		12.5	xxxx		3.4	0.7	xxxx	xxxxx	xxxx	xxxx		xxxxx					
Control Del:	xxxxx	xxxx	xxxxx		49.3	xxxx		16.7	10.0	xxxx	xxxxx	xxxxx	xxxx		xxxxx					
LOS by Move:	*	*	*		E	*		C	B	*	*	*	*		*					
Movement:	LT - LTR - RT					LT - LTR - RT				LT - LTR - RT				LT - LTR - RT						
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx						
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		10.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
Shared LOS:	*	*	*		*	*	*		B	*	*	*	*	*						
ApproachDel:	xxxxxx				33.0				xxxxxx			xxxxxx								
ApproachLOS:	*				D				*			*								

Note: Queue reported is the distance per lane in feet.

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:							#23					
Dist(miles):							0.250					
Speed (mph):							1.00					
SignalIndex:							#53					
Cycle Time:							100 secs					
InitVolume:							0	826				
Saturation:							0	3538				
ArrivalType:							0	4				
G/C:							0.00	0.94				
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:							0.000	1.253				
gq1:							0.00	-5.91				
gq2:							0.00	-2.67				
gq:							0.00	-8.58				
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:							0.550					
beta:							0.645					
ta (secs):							900.000					
F:							0.003					
f:							0.963	0.963				
vcmax:							0	-93				
vcg:							0	224				
vcmin:							1000	1000				
tp:							0.0	0.0				
p:							0.000					
*** Computation 3: Platoon Event Periods												
pdom/psubo:							0.000/0.000/Unconstrained					
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	1745	1749	789	1738	1738	936	947	xxxxx	xxxxx	0	xxxxx	xxxxx
AdjCnflVol:	1745	1749	789	1738	1738	936	947	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
ConflictVol:	1745	1749	789	1738	1738	936	947	xxxxx	xxxxx	0	xxxxx	xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	68	86	391	96	87	321	725	xxxxx	xxxxx	1623	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
Potent Cap.:	68	86	391	96	87	321	725	xxxxx	xxxxx	1623	xxxxx	xxxxx

EPAP No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St J

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: D[31.3]

Street Name:	Leach Road/Street J								Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	0	0	1	0
Volume Module: PM Peak Hour																				
Base Vol:	0	0	0	6	0	5	6	681	0	0	854	5								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	0	0	0	6	0	5	6	681	0	0	854	5								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92								
PHF Volume:	0	0	0	7	0	5	7	740	0	0	928	5								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	0	0	0	7	0	5	7	740	0	0	928	5								
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	1684	1684	931	934	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	xxxxx	104	94	324	733	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	xxxxx	103	93	324	733	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	xxxx	0.06	0.00	0.02	0.01	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.7	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*								
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	149	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	31.3	xxxxx	10.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	D	*	A	*	*	*	*	*								
ApproachDel:	xxxxxx				31.3		xxxxxx				xxxxxx									
ApproachLOS:	*				D		*				*									

Note: Queue reported is the distance per lane in feet.

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:							#23					
Dist(miles):							0.250					
Speed (mph):							1.00					
SignalIndex:							#53					
Cycle Time:							100 secs					
InitVolume:							0	826				
Saturation:							0	3538				
ArrivalType:							0	4				
G/C:							0.00	0.94				
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:							0.000	1.253				
gq1:							0.00	-5.91				
gq2:							0.00	-2.67				
gq:							0.00	-8.58				
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:							0.550					
beta:							0.645					
ta (secs):							900.000					
F:							0.003					
f:							0.904	0.904				
vcmax:							0	-87				
vcg:							0	210				
vcmin:							1000	1000				
tp:							0.0	0.0				
p:							0.000					
*** Computation 3: Platoon Event Periods												
pdom/psubo:							0.000/0.000/Unconstrained					
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	1687	1687	740	1684	1684	931	934	xxxxx	xxxxx	0	xxxxx	xxxxx
AdjCnflVol:	1687	1687	740	1684	1684	931	934	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
ConflictVol:	1687	1687	740	1684	1684	931	934	xxxxx	xxxxx	0	xxxxx	xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	74	94	417	104	94	324	733	xxxxx	xxxxx	1623	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
Potent Cap.:	74	94	417	104	94	324	733	xxxxx	xxxxx	1623	xxxxx	xxxxx

EPAP No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Cycle (sec):	100	Critical Vol./Cap.(X):	0.317
Loss Time (sec):	12	Average Delay (sec/veh):	2.7
Optimal Cycle:	32	Level Of Service:	A

Street Name:	Micke Grove Road/Holman Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	1	0	1	0	1	1	0	2	0	1	1	0	2	0	1
Volume Module:	PM Peak Hour											
Base Vol:	0	0	0	18	0	8	6	767	0	0	861	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	18	0	8	6	767	0	0	861	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	20	0	9	7	834	0	0	936	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	20	0	9	7	834	0	0	936	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	20	0	9	7	834	0	0	936	12
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.93	1.00	0.83	0.93	0.93	1.00	1.00	0.93	0.83
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1900	1900	1900	1769	1900	1583	1769	3538	1900	1900	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.24	0.00	0.00	0.26	0.01
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.03	0.00	0.03	0.01	0.85	0.00	0.00	0.83	0.83
Volume/Cap:	0.00	0.00	0.00	0.32	0.00	0.16	0.32	0.28	0.00	0.00	0.32	0.01
Delay/Veh:	0.0	0.0	0.0	50.1	0.0	48.2	57.7	1.6	0.0	0.0	1.9	1.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	50.1	0.0	48.2	57.7	1.6	0.0	0.0	1.9	1.4
LOS by Move:	A	A	A	D	A	D	E	A	A	A	A	A
HCM2k95thQ:	0	0	0	49	0	22	29	20	0	0	17	0

Note: Queue reported is the distance per lane in feet.

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	1	0	1	0	1	1	0	1	0	1	1	0	2	0	1	1	0	2	0	1				
Lane Group:	L		T		R	L		T		R	L		T		R	L		T		R				
#LnsInGrps:	1		1		1	1		1		1	1		2		1	1		2		1				
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12				
CrsswalkWid:	8					8					8					8								
% Hev Veh:	2					2					2					2								
Grade:	0%					0%					0%					0%								
Parking/Hr:	No					No					No					No								
Bus Stp/Hr:	0					0					0					0								
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:	0					0					0					0								
ExclusiveRT:	Include					Include					Include					Include								
% RT Prtct:	0					0					0					0								
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	xxxx	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	xxxx	xxxx	xxxx										
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx	xxxx	1.00	1.00												
Hev Veh Adj:	xxxx	xxxx	xxxxx	0.98	xxxx	0.98	0.98	0.98	xxxxx	xxxx	0.98	0.98												
Grade Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx	xxxx	1.00	1.00												
Parking Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00												
Bus Stp Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00												
Area Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx	xxxx	1.00	1.00												
RT Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.85	xxxx	xxxx	xxxxx	xxxx	xxxx	0.85												
LT Adj:	xxxx	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	xxxx	xxxx	xxxxx												
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
HCM Sat Adj:	1.00	1.00	1.00	0.93	1.00	0.83	0.93	0.98	1.00	1.00	0.98	0.83												
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00												
Fnl Sat Adj:	1.00	1.00	1.00	0.93	1.00	0.83	0.93	0.93	1.00	1.00	0.93	0.83												
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >																							
DelAdjFctr:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00												

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.00	0.00	0.03	0.03	0.00	0.03	0.01	0.85	0.00	0.00	0.83	0.83
ArrivalType:	4			4			4			4		
ProgFactor:	1.00	1.00	1.00	0.99	1.00	0.99	1.00	0.00	1.00	1.00	0.00	0.00
Q1:	0.0	0.0	0.0	0.5	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.63
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.74
EarlyArrAdj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.70	0.64
Q2:	0.0	0.0	0.0	0.4	0.0	0.2	0.4	0.4	0.0	0.0	0.3	0.0
HCM2KQueue:	0.0	0.0	0.0	1.0	0.0	0.4	0.6	0.4	0.0	0.0	0.3	0.0
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	0.0	0.0	0.0	1.1	0.0	0.5	0.7	0.5	0.0	0.0	0.4	0.0
85th%Factor:	1.60	1.60	1.60	1.59	1.60	1.60	1.59	1.60	1.60	1.60	1.60	1.60
HCM2k85thQ:	0.0	0.0	0.0	1.5	0.0	0.7	0.9	0.6	0.0	0.0	0.5	0.0
90th%Factor:	1.80	1.80	1.80	1.78	1.80	1.79	1.79	1.79	1.80	1.80	1.79	1.80
HCM2k90thQ:	0.0	0.0	0.0	1.7	0.0	0.7	1.0	0.7	0.0	0.0	0.6	0.0
95th%Factor:	2.10	2.10	2.10	2.07	2.10	2.09	2.08	2.09	2.10	2.10	2.09	2.10
HCM2k95thQ:	0.0	0.0	0.0	2.0	0.0	0.9	1.2	0.8	0.0	0.0	0.7	0.0
98th%Factor:	2.70	2.70	2.70	2.63	2.70	2.67	2.66	2.67	2.70	2.70	2.68	2.70
HCM2k98thQ:	0.0	0.0	0.0	2.5	0.0	1.1	1.5	1.0	0.0	0.0	0.9	0.0

EPAP No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Average Delay (sec/veh): 7.1 Worst Case Level Of Service: B[11.8]

Street Name:	SR 99 West Frontage Rd						SR 99 SB Ramps (Eight Mile Rd)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 1 0 0 0			0 0 0 0 0			1 0 0 0 1		
Volume Module:	PM Peak Hour											
Base Vol:	0	112	7	257	143	0	0	0	0	26	0	318
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	112	7	257	143	0	0	0	0	26	0	318
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	122	8	279	155	0	0	0	0	28	0	346
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	122	8	279	155	0	0	0	0	28	0	346
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	129	xxxx	xxxxx	xxxx	xxxx	xxxxx	840	xxxx	126
Potent Cap.:	xxxx	xxxx	xxxxx	1456	xxxx	xxxxx	xxxx	xxxx	xxxxx	336	xxxx	925
Move Cap.:	xxxx	xxxx	xxxxx	1456	xxxx	xxxxx	xxxx	xxxx	xxxxx	277	xxxx	925
Volume/Cap:	xxxx	xxxx	xxxx	0.19	xxxx	xxxx	xxxx	xxxx	xxxx	0.10	xxxx	0.37
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	17.7	xxxx	xxxxx	xxxx	xxxx	xxxxx	8.4	xxxx	43.7
Control Del:	xxxxx	xxxx	xxxxx	8.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	19.5	xxxx	11.2
LOS by Move:	*	*	*	A	*	*	*	*	*	C	*	B
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	8.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			11.8		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the distance per lane in feet.

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:				#183								
Dist(miles):				0.250								
Speed (mph):				1.00								
SignalIndex:				#12								
Cycle Time:				100 secs								
InitVolume:			116			40						
Saturation:			1769			999						
ArrivalType:			4			4						
G/C:			0.11			0.07						

*** Computation 1: Time for Queue to Clear at Each Upstream Intersection

P:			0.147			0.090						
gq1:			5.59			3.65						
gq2:			0.54			0.21						
gq:			6.13			3.85						

*** Computation 2: Time Intersection Blocked Because of Upstream Platoons

alpha:						0.550						
beta:						0.645						
ta (secs):						900.000						
F:						0.003						
f:			1.000			1.000						
vcmax:			34			12						
vcg:			35			12						
vcmin:			1000			1000						
tp:			0.0			0.0						
p:						0.000						

*** Computation 3: Platoon Event Periods

pdom/psubo: 0.000/0.000/Unconstrained

*** Computation 4: Conflicting Flows During Each Unblocked Period

InitCnflVol:	0	xxxxx	xxxxx	129	xxxxx	xxxxx	1012	843	155	840	840	126
AdjCnflVol:	0	xxxxx	xxxxx	129	xxxxx	xxxxx	1012	843	155	840	840	126
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	0	xxxxx	xxxxx	129	xxxxx	xxxxx	1012	843	155	840	840	126

*** Computation 5: Capacity for Subject Movement During Unblocked Period

InitPotCap:	1623	xxxxx	xxxxx	1456	xxxxx	xxxxx	218	300	890	336	302	925
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
Potent Cap.:	1623	xxxxx	xxxxx	1456	xxxxx	xxxxx	218	300	890	336	302	925

EPAP No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Average Delay (sec/veh): 8.3 Worst Case Level Of Service: C[24.4]

Street Name:	SR 99 East Frontage Rd						SR 99 NB Ramps (Eight Mile Rd)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0
Volume Module: PM Peak Hour												
Base Vol:	60	234	0	0	204	173	266	0	50	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	60	234	0	0	204	173	266	0	50	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	65	254	0	0	222	188	289	0	54	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	65	254	0	0	222	188	289	0	54	0	0	0

Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	410	xxxx	xxxxx	xxxx	xxxx	xxxxx	607	xxxx	222	xxxx	xxxx	xxxxx
Potent Cap.:	1160	xxxx	xxxxx	xxxx	xxxx	xxxxx	463	xxxx	823	xxxx	xxxx	xxxxx
Move Cap.:	1160	xxxx	xxxxx	xxxx	xxxx	xxxxx	443	xxxx	823	xxxx	xxxx	xxxxx
Volume/Cap:	0.06	xxxx	xxxx	xxxx	xxxx	xxxx	0.65	xxxx	0.07	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	4.5	xxxx	xxxxx	xxxx	xxxx	xxxxx	114	xxxx	5.3	xxxx	xxxx	xxxxx
Control Del:	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	27.2	xxxx	9.7	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	D	*	A	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			24.4			xxxxxx		
ApproachLOS:	*			*			C			*		

Note: Queue reported is the distance per lane in feet.

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	0%			0%			0%			0%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:	#222			#188								
Dist(miles):	0.250			0.250								
Speed (mph):	1.00			1.00								
SignalIndex:	#23			#13								
Cycle Time:	100 secs			100 secs								
InitVolume:	0	48		41	22							
Saturation:	0	738		1769	1348							
ArrivalType:	0	4		4	4							
G/C:	0.00	0.48		0.04	0.07							
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:	0.000	0.645		0.053	0.098							
gq1:	0.00	2.31		2.20	1.47							
gq2:	0.00	0.22		0.07	0.03							
gq:	0.00	2.52		2.27	1.50							
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:	0.550			0.550								
beta:	0.645			0.645								
ta (secs):	900.000			900.000								
F:	0.003			0.003								
f:	1.000	1.000		1.000	1.000							
vcmax:	0	6		12	6							
vcg:	0	14		13	7							
vcmin:	1000	1000		1000	1000							
tp:	0.0	0.0		0.0	0.0							
p:	0.000			0.000								
*** Computation 3: Platoon Event Periods												
pdom/psubo:	0.000/0.000/Unconstrained											
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	410	xxxxx	xxxxx	0	xxxxx	xxxxx	607	607	222	728	795	254
AdjCnflVol:	410	xxxxx	xxxxx	0	xxxxx	xxxxx	607	607	222	728	795	254
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	410	xxxxx	xxxxx	0	xxxxx	xxxxx	607	607	222	728	795	254
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	1160	xxxxx	xxxxx	1636	xxxxx	xxxxx	463	414	823	342	323	789
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
Potent Cap.:	1160	xxxxx	xxxxx	1636	xxxxx	xxxxx	463	414	823	342	323	789

EPAP No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

Cycle (sec):	100	Critical Vol./Cap.(X):	0.412
Loss Time (sec):	12	Average Delay (sec/veh):	29.1
Optimal Cycle:	36	Level Of Service:	C

Street Name:	Holman Road						Lt. Col. Mark Taylor Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 2	0 1	1	0 3	0 1	1	0 1	0 1	1	0 0	1 0
Volume Module:	PM Peak Hour											
Base Vol:	145	202	208	11	157	7	14	178	142	177	134	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	145	202	208	11	157	7	14	178	142	177	134	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	158	220	226	12	171	8	15	193	154	192	146	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	158	220	226	12	171	8	15	193	154	192	146	9
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	158	220	226	12	171	8	15	193	154	192	146	9
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.89	0.83	0.93	0.98	0.83	0.93	0.97	0.97
Lanes:	1.00	2.00	1.00	1.00	3.00	1.00	1.00	1.00	1.00	1.00	0.94	0.06
Final Sat.:	1769	3538	1583	1769	5083	1583	1769	1862	1583	1769	1743	104
Capacity Analysis Module:												
Vol/Sat:	0.09	0.06	0.14	0.01	0.03	0.00	0.01	0.10	0.10	0.11	0.08	0.08
Crit Moves:			****	****				****		****		
Green/Cycle:	0.26	0.35	0.35	0.02	0.10	0.10	0.05	0.25	0.25	0.26	0.47	0.47
Volume/Cap:	0.34	0.18	0.41	0.41	0.34	0.05	0.18	0.41	0.39	0.41	0.18	0.18
Delay/Veh:	30.2	22.8	25.4	57.9	42.4	40.9	46.7	31.8	31.6	31.0	15.5	15.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.2	22.8	25.4	57.9	42.4	40.9	46.7	31.8	31.6	31.0	15.5	15.5
LOS by Move:	C	C	C	E	D	D	D	C	C	C	B	B
HCM2k95thQ:	172	102	222	46	105	12	23	220	176	232	103	103

Note: Queue reported is the distance per lane in feet.

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

```
*******************************************************************************
Intersection #17 Holman & Lt Col Mark Taylor
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        1  0  2  0  1    1  0  3  0  1    1  0  1  0  1    1  0  0  1  0
Lane Group:    L    T     R     L    T     R     L    T     R     L   RT     RT
#LnsInGrps:     1    2     1     1    3     1     1    1     1     1    1     1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:          8                8                8                8
% Hev Veh:            2                2                2                2
Grade:               0%               0%               0%               0%
Parking/Hr:          No               No               No               No
Bus Stp/Hr:           0                0                0                0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:          0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:           0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Hev Veh Adj: 0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
Grade Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Parking Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx 1.00  1.00
Bus Stp Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx 1.00  1.00
Area Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
RT Adj:      xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx 0.99  0.99
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.93 0.98  0.83  0.93 0.98  0.83  0.93 0.98  0.83  0.93 0.97  0.97
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 0.95  1.00  1.00 0.91  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Fnl Sat Adj: 0.93 0.93  0.83  0.93 0.89  0.83  0.93 0.98  0.83  0.93 0.97  0.97
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
*******************************************************************************
```


EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

```
*******************************************************************************
Intersection #17 Holman & Lt Col Mark Taylor
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Green/Cycle: 0.26 0.35  0.35  0.02 0.10  0.10  0.05 0.25  0.25  0.26 0.47  0.47
ArrivalType:         4                4                4                4
ProgFactor:  0.91 0.84  0.87  1.00 0.97  0.96  0.99 0.92  0.92  0.92 0.73  0.73
Q1:           3.2  1.9   4.2   0.3  1.6   0.2   0.4  4.1   3.3   4.0  1.8   1.8
UpstreamVC:  0.15 0.15  0.15  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00
UpstreamAdj: 0.99 0.99  0.99  0.00 0.00  0.00  1.00 1.00  1.00  0.00 0.00  0.00
EarlyArrAdj: 0.46 0.56  0.51  1.00 1.00  1.00  0.17 0.47  0.42  1.00 1.00  1.00
Q2:           0.2  0.1   0.4   0.6  0.5   0.1   0.0  0.3   0.3   0.7  0.2   0.2
HCM2KQueue:   3.5  2.0   4.5   0.9  2.1   0.2   0.4  4.5   3.5   4.7  2.0   2.0
------------|---------------||---------------||---------------||---------------|
70th%Factor: 1.19 1.20  1.19  1.20 1.19  1.20  1.20 1.19  1.19  1.19 1.20  1.20
HCM2k70thQ:   4.1  2.4   5.4   1.1  2.5   0.3   0.5  5.3   4.2   5.6  2.4   2.4
------------|---------------||---------------||---------------||---------------|
85th%Factor: 1.57 1.58  1.56  1.59 1.58  1.60  1.60 1.56  1.57  1.56 1.58  1.58
HCM2k85thQ:   5.4  3.2   7.0   1.4  3.3   0.4   0.7  7.0   5.5   7.4  3.2   3.2
------------|---------------||---------------||---------------||---------------|
90th%Factor: 1.74 1.76  1.72  1.78 1.76  1.80  1.79 1.72  1.74  1.72 1.76  1.76
HCM2k90thQ:   6.0  3.5   7.8   1.6  3.6   0.4   0.8  7.7   6.1   8.1  3.6   3.6
------------|---------------||---------------||---------------||---------------|
95th%Factor: 2.00 2.04  1.97  2.07 2.03  2.09  2.09 1.97  1.99  1.96 2.04  2.04
HCM2k95thQ:   6.9  4.1   8.9   1.8  4.2   0.5   0.9  8.8   7.0   9.3  4.1   4.1
------------|---------------||---------------||---------------||---------------|
98th%Factor: 2.47 2.56  2.41  2.63 2.55  2.68  2.67 2.41  2.46  2.39 2.56  2.56
HCM2k98thQ:   8.5  5.1  10.9   2.3  5.3   0.6   1.2 10.8   8.7  11.3  5.2   5.2
```

EPAP No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.500
Loss Time (sec): 12 Average Delay (sec/veh): 26.3
Optimal Cycle: 41 Level Of Service: C

Street Name:	West Lane						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	3	0	1	2	0	3	0	1
Volume Module:PM Peak Hour												
Base Vol:	82	674	250	266	580	30	41	54	56	296	55	198
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	82	674	250	266	580	30	41	54	56	296	55	198
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	89	733	272	289	630	33	45	59	61	322	60	215
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	733	272	289	630	33	45	59	61	322	60	215
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	733	272	289	630	33	45	59	61	322	60	215
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	5083	1583	3432	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.21	0.17	0.08	0.18	0.02	0.01	0.01	0.04	0.09	0.01	0.14
Crit Moves:		****		****			****					****
Green/Cycle:	0.07	0.41	0.41	0.17	0.51	0.51	0.03	0.09	0.09	0.21	0.27	0.27
Volume/Cap:	0.35	0.50	0.41	0.50	0.35	0.04	0.50	0.13	0.44	0.44	0.04	0.50
Delay/Veh:	44.8	21.9	21.2	38.4	14.8	12.4	52.4	42.3	45.7	34.8	26.8	31.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.8	21.9	21.2	38.4	14.8	12.4	52.4	42.3	45.7	34.8	26.8	31.6
LOS by Move:	D	C	C	D	B	B	D	D	D	C	C	C
HCM2k95thQ:	87	360	248	225	218	18	73	36	117	224	23	273

Note: Queue reported is the distance per lane in feet.

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L - T - R						L - T - R						L - T - R						L - T - R					
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	3	0	1	2	0	3	0	1				
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R												
#LnsInGrps:	2	2	1	2	2	1	2	3	1	2	3	1												
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12												
CrsswalkWid:	8			8			8			8														
% Hev Veh:	2			2			2			2														
Grade:	0%			0%			0%			0%														
Parking/Hr:	No			No			No			No														
Bus Stp/Hr:	0			0			0			0														
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:	0			0			0			0														
ExclusiveRT:	Include			Include			Include			Include														
% RT Prtct:	0			0			0			0														
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx												
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98												
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00												
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00												
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85												
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx												
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83												
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
MLF Sat Adj:	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00												
Fnl Sat Adj:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83												
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.07	0.41	0.41	0.17	0.51	0.51	0.03	0.09	0.09	0.21	0.27	0.27
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.84	0.82	0.96	0.71	0.66	1.00	0.97	0.98	0.94	0.88	0.92
Q1:	1.2	6.6	4.4	3.6	3.9	0.3	0.6	0.5	1.6	3.8	0.4	4.7
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.5	1.0	0.7	1.0	0.5	0.0	0.8	0.2	0.7	0.8	0.0	1.0
HCM2KQueue:	1.7	7.6	5.1	4.6	4.4	0.3	1.4	0.7	2.3	4.6	0.4	5.6
70th%Factor:	1.20	1.18	1.19	1.19	1.19	1.20	1.20	1.20	1.19	1.19	1.20	1.19
HCM2k70thQ:	2.0	9.0	6.0	5.4	5.3	0.4	1.7	0.8	2.8	5.4	0.5	6.7
85th%Factor:	1.58	1.53	1.55	1.56	1.56	1.60	1.59	1.59	1.58	1.56	1.60	1.55
HCM2k85thQ:	2.7	11.7	7.9	7.1	6.9	0.5	2.2	1.1	3.7	7.1	0.7	8.7
90th%Factor:	1.77	1.67	1.71	1.72	1.72	1.79	1.77	1.79	1.76	1.72	1.79	1.70
HCM2k90thQ:	3.0	12.7	8.7	7.9	7.6	0.6	2.5	1.2	4.1	7.8	0.8	9.6
95th%Factor:	2.05	1.89	1.95	1.97	1.97	2.09	2.05	2.08	2.03	1.97	2.09	1.94
HCM2k95thQ:	3.5	14.4	9.9	9.0	8.7	0.7	2.9	1.4	4.7	9.0	0.9	10.9
98th%Factor:	2.58	2.26	2.38	2.40	2.41	2.67	2.60	2.65	2.54	2.40	2.67	2.35
HCM2k98thQ:	4.4	17.2	12.1	11.0	10.7	0.9	3.7	1.8	5.9	11.0	1.2	13.2

EPAP No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.514
Loss Time (sec): 12 Average Delay (sec/veh): 32.1
Optimal Cycle: 42 Level Of Service: C

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:	PM Peak Hour											
Base Vol:	193	192	202	100	139	91	122	355	161	231	501	200
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	193	192	202	100	139	91	122	355	161	231	501	200
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	210	209	220	109	151	99	133	386	175	251	545	217
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	210	209	220	109	151	99	133	386	175	251	545	217
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	210	209	220	109	151	99	133	386	175	251	545	217
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.12	0.04	0.14	0.06	0.03	0.06	0.07	0.08	0.11	0.14	0.11	0.14
Crit Moves:			****	****					****	****		
Green/Cycle:	0.25	0.27	0.27	0.12	0.13	0.13	0.17	0.21	0.21	0.28	0.32	0.32
Volume/Cap:	0.47	0.15	0.51	0.51	0.22	0.47	0.43	0.35	0.51	0.51	0.34	0.43
Delay/Veh:	32.3	27.9	32.0	43.5	38.8	41.6	37.9	33.5	36.0	31.5	26.2	27.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.3	27.9	32.0	43.5	38.8	41.6	37.9	33.5	36.0	31.5	26.2	27.6
LOS by Move:	C	C	C	D	D	D	D	C	D	C	C	C
HCM2k95thQ:	237	77	249	153	72	136	193	182	248	274	191	218

Note: Queue reported is the distance per lane in feet.

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	3	1		1	3	1		1	3	1		1	3	1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	3	1		1	3	1		1	3	1		1	3	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.25	0.27	0.27		0.12	0.13	0.13		0.17	0.21	0.21		0.28	0.32	0.32	
ArrivalType:		4				4				4				4		
ProgFactor:	0.93	0.89	0.93		0.98	0.96	0.97		0.96	0.93	0.95		0.92	0.88	0.89	
Q1:	4.6	1.4	4.8		2.8	1.3	2.5		3.1	3.1	4.1		5.4	3.7	4.3	
UpstreamVC:	0.67	0.67	0.67		0.34	0.34	0.34		0.00	0.00	0.00		0.83	0.83	0.83	
UpstreamAdj:	0.68	0.68	0.68		0.95	0.95	0.95		0.00	0.00	0.00		0.45	0.45	0.45	
EarlyArrAdj:	0.31	0.33	0.30		0.27	0.30	0.28		1.00	1.00	1.00		0.22	0.24	0.22	
Q2:	0.3	0.1	0.3		0.3	0.1	0.2		0.7	0.5	1.0		0.2	0.1	0.2	
HCM2KQueue:	4.8	1.5	5.1		3.0	1.4	2.7		3.9	3.7	5.1		5.7	3.9	4.4	
70th%Factor:	1.19	1.20	1.19		1.19	1.20	1.19		1.19	1.19	1.19		1.19	1.19	1.19	
HCM2k70thQ:	5.8	1.8	6.1		3.6	1.7	3.2		4.6	4.4	6.0		6.7	4.6	5.3	
85th%Factor:	1.56	1.59	1.55		1.57	1.59	1.57		1.56	1.57	1.55		1.55	1.56	1.56	
HCM2k85thQ:	7.5	2.4	7.9		4.8	2.2	4.2		6.1	5.7	7.9		8.8	6.0	6.9	
90th%Factor:	1.71	1.77	1.71		1.74	1.77	1.75		1.73	1.73	1.71		1.70	1.73	1.72	
HCM2k90thQ:	8.3	2.7	8.7		5.3	2.5	4.7		6.7	6.3	8.7		9.6	6.7	7.6	
95th%Factor:	1.96	2.05	1.95		2.01	2.06	2.02		1.98	1.99	1.95		1.94	1.98	1.97	
HCM2k95thQ:	9.5	3.1	10.0		6.1	2.9	5.4		7.7	7.3	9.9		11.0	7.6	8.7	
98th%Factor:	2.39	2.59	2.38		2.49	2.60	2.51		2.44	2.45	2.38		2.35	2.44	2.41	
HCM2k98thQ:	11.6	3.9	12.1		7.6	3.6	6.8		9.5	9.0	12.1		13.3	9.4	10.7	

EPAP No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #20 SR99 W Front & SB Ramps Morada

Average Delay (sec/veh): 21.0 Worst Case Level Of Service: F[62.9]

Street Name:	SR 99 West Frontage Rd						SR 99 SB Ramps (Morada Lane)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0	1 0	0 1	0	0 0	0 0	0	0 0	1 0	0	0 1
Volume Module: PM Peak Hour												
Base Vol:	0	73	290	30	101	0	0	0	0	372	0	16
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	73	290	30	101	0	0	0	0	372	0	16
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	79	315	33	110	0	0	0	0	404	0	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	79	315	33	110	0	0	0	0	404	0	17
Critical Gap Module:												
Critical Gp:	xxxxx	6.5	6.2	7.1	6.5	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	4.0	3.3	3.5	4.0	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	826	0	848	809	xxxxx	xxxx	xxxx	xxxxx	0	xxxx	xxxxx
Potent Cap.:	xxxx	307	1085	281	314	xxxxx	xxxx	xxxx	xxxxx	1623	xxxx	xxxxx
Move Cap.:	xxxx	231	1085	120	236	xxxxx	xxxx	xxxx	xxxxx	1623	xxxx	xxxxx
Volume/Cap:	xxxx	0.34	0.29	0.27	0.46	xxxx	xxxx	xxxx	xxxx	0.25	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	24.7	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	622	193	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	4.5	4.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	20.3	62.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	C	F	*	*	*	*	*	*	*	*
ApproachDel:	20.3			62.9			xxxxxx			xxxxxx		
ApproachLOS:	C			F			*			*		

Note: Queue reported is the distance per lane in feet.

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #20 SR99 W Front & SB Ramps Morada

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												

EPAP No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #21 SR99 E Front & NB Ramps Morada

Average Delay (sec/veh): 14.6 Worst Case Level Of Service: D[27.3]

Street Name:	SR 99 East Frontage Rd								SR 99 NB Ramps (Morada Lane)							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0
Volume Module:	PM Peak Hour																			
Base Vol:	190	223		0	0	262		13	120	0	547		0	0	0					
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00					
Initial Bse:	190	223		0	0	262		13	120	0	547		0	0	0					
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00					
PHF Adj:	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	0.92		0.92	0.92	0.92					
PHF Volume:	207	242		0	0	285		14	130	0	595		0	0	0					
Reduct Vol:	0	0		0	0	0		0	0	0	0		0	0	0					
FinalVolume:	207	242		0	0	285		14	130	0	595		0	0	0					
Critical Gap Module:																				
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx		6.4	xxxx		6.2	xxxxx	xxxx	xxxxx						
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx		3.5	xxxx		3.3	xxxxx	xxxx	xxxxx						
Capacity Module:																				
Cnflict Vol:	299	xxxx	xxxxx	xxxx	xxxx	xxxxx		947	xxxx		292	xxxx	xxxx	xxxxx						
Potent Cap.:	1262	xxxx	xxxxx	xxxx	xxxx	xxxxx		290	xxxx		747	xxxx	xxxx	xxxxx						
Move Cap.:	1262	xxxx	xxxxx	xxxx	xxxx	xxxxx		249	xxxx		747	xxxx	xxxx	xxxxx						
Volume/Cap:	0.16	xxxx	xxxx	xxxx	xxxx	xxxx		0.52	xxxx		0.80	xxxx	xxxx	xxxx						
Level Of Service Module:																				
2Way95thQ:	14.6	xxxx	xxxxx	xxxx	xxxx	xxxxx		69.7	xxxx		204.4	xxxx	xxxx	xxxxx						
Control Del:	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx		34.4	xxxx		25.8	xxxxx	xxxx	xxxxx						
LOS by Move:	A	*	*	*	*	*		D	*		D	*	*	*						
Movement:	LT - LTR - RT					LT - LTR - RT					LT - LTR - RT					LT - LTR - RT				
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx						
SharedQueue:	0.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	A	*	*	*	*	*		*	*		*	*	*							
ApproachDel:	xxxxxx			xxxxxx				27.3			xxxxxx									
ApproachLOS:	*			*				D			*									

Note: Queue reported is the distance per lane in feet.

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #21 SR99 E Front & NB Ramps Morada

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HevVeh:			2%					2%					2%					2%		
Grade:			0%					0%					0%					0%		
Peds/Hour:			0					0					0					0		
Pedestrian Walk Speed: 4.00 feet/sec																				
LaneWidth:			12 feet					12 feet					12 feet					12 feet		
Time Period: 0.25 hour																				
Upstream Signals:																				
Link Index:			#222					#188												
Dist(miles):			0.250					0.250												
Speed (mph):			1.00					1.00												
SignalIndex:			#23					#13												
Cycle Time:			100 secs					100 secs												
InitVolume:	0		48				41		22											
Saturation:	0		738				1769		1348											
ArrivalType:	0		4				4		4											
G/C:		0.00		0.48				0.04		0.07										
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection																				
P:			0.000		0.645			0.053		0.098										
gq1:			0.00		2.31			2.20		1.47										
gq2:			0.00		0.22			0.07		0.03										
gq:			0.00		2.52			2.27		1.50										
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons																				
alpha:			0.550					0.550												
beta:			0.645					0.645												
ta (secs):			900.000					900.000												
F:			0.003					0.003												
f:		1.000		1.000			1.000		1.000											
vcmax:			0		6			12		6										
vcg:			0		14			13		7										
vcmin:			1000		1000			1000		1000										
tp:			0.0		0.0			0.0		0.0										
p:			0.000					0.000												
*** Computation 3: Platoon Event Periods																				
pdom/psubo:			0.000/0.000/Unconstrained																	
*** Computation 4: Conflicting Flows During Each Unblocked Period																				
InitCnflVol:	299	xxxxx	xxxxx		0	xxxxx	xxxxx		947		947		292	1245		954		242		
AdjCnflVol:	299	xxxxx	xxxxx		0	xxxxx	xxxxx		947		947		292	1245		954		242		
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000								
ConflictVol:	299	xxxxx	xxxxx		0	xxxxx	xxxxx		947		947		292	1245		954		242		
*** Computation 5: Capacity for Subject Movement During Unblocked Period																				
InitPotCap:	1262	xxxxx	xxxxx	1623	xxxxx	xxxxx		290		261		747	151		259		796			
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000								
Potent Cap.:	1262	xxxxx	xxxxx	1623	xxxxx	xxxxx		290		261		747	151		259		796			

EPAP No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #24 West Ln & West Ln Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.545
Loss Time (sec):	9	Average Delay (sec/veh):	19.6
Optimal Cycle:	37	Level Of Service:	B

Street Name:	West Lane							West Lane Frontage Road					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R	
Control:	Protected			Protected			Permitted			Permitted			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	1	0 1	1 0	1	0 1	1 0	0	1 0	0 1	1	0 0	1 0	
Volume Module:	PM Peak Hour												
Base Vol:	196	912	148	38	742	63	82	9	107	141	16	9	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Initial Bse:	196	912	148	38	742	63	82	9	107	141	16	9	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
PHF Volume:	213	991	161	41	807	68	89	10	116	153	17	10	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	213	991	161	41	807	68	89	10	116	153	17	10	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
FinalVolume:	213	991	161	41	807	68	89	10	116	153	17	10	
Saturation Flow Module:													
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Adjustment:	0.93	0.91	0.91	0.93	0.92	0.92	0.71	0.71	0.83	0.64	0.93	0.93	
Lanes:	1.00	1.72	0.28	1.00	1.84	0.16	0.90	0.10	1.00	1.00	0.64	0.36	
Final Sat.:	1769	2980	484	1769	3222	274	1223	134	1583	1223	1127	634	
Capacity Analysis Module:													
Vol/Sat:	0.12	0.33	0.33	0.02	0.25	0.25	0.07	0.07	0.07	0.13	0.02	0.02	
Crit Moves:	****				****					****			
Green/Cycle:	0.22	0.64	0.64	0.04	0.46	0.46	0.23	0.23	0.23	0.23	0.23	0.23	
Volume/Cap:	0.55	0.52	0.52	0.52	0.55	0.55	0.32	0.32	0.32	0.55	0.07	0.07	
Delay/Veh:	36.1	10.2	10.2	53.0	19.9	19.9	32.6	32.6	32.5	36.1	30.2	30.2	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
AdjDel/Veh:	36.1	10.2	10.2	53.0	19.9	19.9	32.6	32.6	32.5	36.1	30.2	30.2	
LOS by Move:	D	B	B	D	B	B	C	C	C	D	C	C	
HCM2k95thQ:	262	260	260	103	403	403	130	130	148	229	32	32	

Note: Queue reported is the distance per lane in feet.

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0	1 1	0	1 0	1 1	0	0 1	0 0	1	1 0	0 1	0
Lane Group:	L	RT	RT	L	RT	RT	LT	LT	R	L	RT	RT
#LnsInGrps:	1	2	2	1	2	2	1	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	5	5	xxxx	2	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	0.98	0.98	xxxx	0.99	0.99	xxxx	xxxx	0.85	xxxx	0.95	0.95
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.73	0.73	xxxxx	0.66	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.96	0.96	0.93	0.97	0.97	0.71	0.71	0.83	0.64	0.93	0.93
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.93	0.91	0.91	0.93	0.92	0.92	0.71	0.71	0.83	0.64	0.93	0.93
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Base Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North	South	East	West
Cycle Length, C:	xxxxxx	xxxxxx	100	100
Actual Green Time Per Lane Group, G:	xxxxxx	xxxxxx	21.99	21.99
Effective Green Time Per Lane Group, g:	xxxxxx	xxxxxx	22.99	22.99
Opposing Effective Green Time, go:	xxxxxx	xxxxxx	22.99	22.99
Number Of Opposing Lanes, No:	xxxxxx	xxxxxx	1	1
Number Of Lanes In Lane Group, N:	xxxxxx	xxxxxx	1	1
Adjusted Left-Turn Flow Rate, Vlt:	xxxxxx	xxxxxx	89	153
Proportion of Left Turns in Lane Group, Plt:	xxxxxx	xxxxxx	0.90	1.00
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	xxxxxx	xxxxxx	2.48	4.26
Adjusted Opposing Flow Rate, Vo:	xxxxxx	xxxxxx	27	99
Opposing Flow Per Lane Per Cycle, Volc:	xxxxxx	xxxxxx	0.75	2.75
Opposing Platoon Ratio, Rpo:	xxxxxx	xxxxxx	1.33	1.33
Lost Time Per Phase, tl:	xxxxxx	xxxxxx	3.00	3.00
Eff grn until arrival of left-turn car, gf:	xxxxxx	xxxxxx	1.06	0.00
Opposing Queue Ratio, qro:	xxxxxx	xxxxxx	0.69	0.69
Eff grn blocked by opposing queue, gq:	xxxxxx	xxxxxx	0.00	1.12
Eff grn while left turns filter thru, gu:	xxxxxx	xxxxxx	21.93	21.87
Max opposing cars arriving during gq-gf, n:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	0.86	0.81
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	0.90	1.00
Through-car Equivalents, el1:	xxxxxx	xxxxxx	1.44	1.45
Single Lane Through-car Equivalents, el2:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	xxxxxx	xxxxxx	0.17	0.17
Single Lane Left Turn Adjustment Factor, fm:	xxxxxx	xxxxxx	0.73	0.66
Left Turn Adjustment Factor, flt:	xxxxxx	xxxxxx	0.73	0.66

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.22	0.64	0.64	0.04	0.46	0.46	0.23	0.23	0.23	0.23	0.23	0.23
ArrivalType:	4			4			4			4		
ProgFactor:	0.95	0.50	0.50	0.99	0.81	0.81	0.92	0.92	0.93	0.95	0.91	0.91
Q1:	5.0	4.6	4.6	1.1	7.4	7.4	2.1	2.1	2.5	3.5	0.5	0.5
UpstreamVC:	0.54	0.54	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.83	0.83	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.35	0.66	0.66	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.4	0.7	0.7	0.9	1.2	1.2	0.5	0.5	0.5	1.1	0.1	0.1
HCM2KQueue:	5.4	5.3	5.3	2.0	8.6	8.6	2.6	2.6	2.9	4.7	0.6	0.6
70th%Factor:	1.19	1.19	1.19	1.20	1.18	1.18	1.19	1.19	1.19	1.19	1.20	1.20
HCM2k70thQ:	6.4	6.3	6.3	2.4	10.2	10.2	3.1	3.1	3.5	5.5	0.7	0.7
85th%Factor:	1.55	1.55	1.55	1.58	1.53	1.53	1.58	1.58	1.57	1.56	1.59	1.59
HCM2k85thQ:	8.3	8.3	8.3	3.2	13.1	13.1	4.0	4.0	4.6	7.3	1.0	1.0
90th%Factor:	1.71	1.71	1.71	1.76	1.66	1.66	1.75	1.75	1.75	1.72	1.79	1.79
HCM2k90thQ:	9.2	9.1	9.1	3.6	14.3	14.3	4.5	4.5	5.1	8.0	1.1	1.1
95th%Factor:	1.94	1.95	1.95	2.04	1.87	1.87	2.02	2.02	2.01	1.96	2.08	2.08
HCM2k95thQ:	10.5	10.4	10.4	4.1	16.1	16.1	5.2	5.2	5.9	9.2	1.3	1.3
98th%Factor:	2.36	2.36	2.36	2.56	2.22	2.22	2.52	2.52	2.50	2.40	2.65	2.65
HCM2k98thQ:	12.7	12.6	12.6	5.2	19.1	19.1	6.5	6.5	7.4	11.2	1.6	1.6

EPAP No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #25 West Lane & Knickerbocker Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.540
Loss Time (sec):	12	Average Delay (sec/veh):	24.8
Optimal Cycle:	43	Level Of Service:	C

Street Name:	West Lane								Knickerbocker Drive								
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R		
Control:	Protected				Protected				Protected				Protected				
Rights:	Include				Include				Include				Include				
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0		
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		
Lanes:	1	0	3	0	1	1	0	2	1	0	1	0	0	1	0	1	0
Volume Module:	PM Peak Hour																
Base Vol:	72	1115	86		112	824	58		99	95	44		135	74	58		
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
Initial Bse:	72	1115	86		112	824	58		99	95	44		135	74	58		
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		
PHF Volume:	78	1212	93		122	896	63		108	103	48		147	80	63		
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0		
Reduced Vol:	78	1212	93		122	896	63		108	103	48		147	80	63		
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
FinalVolume:	78	1212	93		122	896	63		108	103	48		147	80	63		
Saturation Flow Module:																	
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		
Adjustment:	0.93	0.89	0.83		0.93	0.88	0.88		0.93	0.93	0.93		0.93	0.92	0.92		
Lanes:	1.00	3.00	1.00		1.00	2.80	0.20		1.00	0.68	0.32		1.00	0.56	0.44		
Final Sat.:	1769	5083	1583		1769	4701	331		1769	1212	561		1769	975	764		
Capacity Analysis Module:																	
Vol/Sat:	0.04	0.24	0.06		0.07	0.19	0.19		0.06	0.09	0.09		0.08	0.08	0.08		
Crit Moves:		****			****					****			****				
Green/Cycle:	0.11	0.44	0.44		0.13	0.46	0.46		0.13	0.16	0.16		0.15	0.18	0.18		
Volume/Cap:	0.41	0.54	0.13		0.54	0.41	0.41		0.46	0.54	0.54		0.54	0.46	0.46		
Delay/Veh:	43.2	20.8	16.7		43.5	18.0	18.0		41.5	40.9	40.9		41.3	37.8	37.8		
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
AdjDel/Veh:	43.2	20.8	16.7		43.5	18.0	18.0		41.5	40.9	40.9		41.3	37.8	37.8		
LOS by Move:	D	C	B		D	B	B		D	D	D		D	D	D		
HCM2k95thQ:	109	381	64		169	263	263		174	237	237		233	209	209		

Note: Queue reported is the distance per lane in feet.

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R		
HCM Ops Adjusted Lane Utilization Module:																	
Lanes:	1	0	3	0	1	1	0	2	1	0	1	0	0	1	0	1	0
Lane Group:	L	T	R		L	RT	RT		L	RT	RT		L	RT	RT		
#LnsInGrps:	1	3	1		1	3	3		1	1	1		1	1	1		
HCM Ops Input Saturation Adj Module:																	
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12		
CrsswalkWid:	8				8				8				8				
% Hev Veh:	2				2				2				2				
Grade:	0%				0%				0%				0%				
Parking/Hr:	No				No				No				No				
Bus Stp/Hr:	0				0				0				0				
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																
Cnft Ped/Hr:	0				0				0				0				
ExclusiveRT:	Include				Include				Include				Include				
% RT Prtct:	0				0				0				0				
HCM Ops f(lt) Adj Case Module:																	
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		
HCM Ops Saturation Adj Module:																	
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
RT Adj:	xxxx	xxxx	0.85		xxxx	0.99	0.99		xxxx	0.95	0.95		xxxx	0.93	0.93		
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.97	0.97		0.93	0.93	0.93		0.93	0.92	0.92		
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00		
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.88	0.88		0.93	0.93	0.93		0.93	0.92	0.92		
Delay Adjustment Factor Module:																	
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >																
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.11	0.44	0.44	0.13	0.46	0.46	0.13	0.16	0.16	0.15	0.18	0.18
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.82	0.75	0.98	0.78	0.78	0.97	0.97	0.97	0.97	0.96	0.96
Q1:	2.0	7.4	1.2	3.1	5.0	5.0	2.7	3.7	3.7	3.6	3.4	3.4
UpstreamVC:	0.50	0.50	0.50	0.55	0.55	0.55	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.86	0.86	0.86	0.82	0.82	0.82	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.23	0.56	0.51	0.25	0.55	0.55	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.2	0.7	0.1	0.3	0.4	0.4	0.8	1.1	1.1	1.1	0.8	0.8
HCM2KQueue:	2.1	8.1	1.2	3.4	5.4	5.4	3.5	4.8	4.8	4.7	4.2	4.2
70th%Factor:	1.19	1.18	1.20	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19
HCM2k70thQ:	2.6	9.6	1.5	4.0	6.4	6.4	4.2	5.8	5.8	5.6	5.0	5.0
85th%Factor:	1.58	1.53	1.59	1.57	1.55	1.55	1.57	1.56	1.56	1.56	1.56	1.56
HCM2k85thQ:	3.4	12.4	2.0	5.3	8.4	8.4	5.5	7.5	7.5	7.4	6.6	6.6
90th%Factor:	1.76	1.67	1.78	1.74	1.71	1.71	1.74	1.71	1.71	1.72	1.72	1.72
HCM2k90thQ:	3.8	13.5	2.2	5.9	9.2	9.2	6.1	8.3	8.3	8.1	7.3	7.3
95th%Factor:	2.03	1.88	2.06	2.00	1.94	1.94	1.99	1.96	1.96	1.96	1.97	1.97
HCM2k95thQ:	4.4	15.2	2.6	6.7	10.5	10.5	7.0	9.5	9.5	9.3	8.4	8.4
98th%Factor:	2.55	2.24	2.61	2.47	2.36	2.36	2.46	2.39	2.39	2.39	2.42	2.42
HCM2k98thQ:	5.5	18.1	3.2	8.3	12.8	12.8	8.6	11.6	11.6	11.4	10.2	10.2

EPAP No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.728
Loss Time (sec):	12	Average Delay (sec/veh):	35.8
Optimal Cycle:	63	Level Of Service:	D

Street Name:	West Lane						Hammer Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	4 0	1	2 0	4 0	1	2 0	4 0	1	2 0	4 0	1
Volume Module:	PM Peak Hour											
Base Vol:	485	876	189	247	637	242	450	1224	181	368	1112	122
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	485	876	189	247	637	242	450	1224	181	368	1112	122
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	527	952	205	268	692	263	489	1330	197	400	1209	133
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	527	952	205	268	692	263	489	1330	197	400	1209	133
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	527	952	205	268	692	263	489	1330	197	400	1209	133
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.15	0.14	0.13	0.08	0.10	0.17	0.14	0.20	0.12	0.12	0.18	0.08
Crit Moves:	****					****	****				****	
Green/Cycle:	0.21	0.28	0.28	0.16	0.23	0.23	0.20	0.28	0.28	0.16	0.24	0.24
Volume/Cap:	0.73	0.50	0.46	0.50	0.45	0.73	0.73	0.71	0.45	0.71	0.73	0.34
Delay/Veh:	40.5	30.2	30.4	39.3	33.4	43.0	41.7	33.9	30.6	43.7	36.4	31.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.5	30.2	30.4	39.3	33.4	43.0	41.7	33.9	30.6	43.7	36.4	31.6
LOS by Move:	D	C	C	D	C	D	D	C	C	D	D	C
HCM2k95thQ:	423	314	250	184	225	353	404	497	241	284	419	148

Note: Queue reported is the distance per lane in feet.

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	4	0	2	0	4	0	2	0	4	0	2	0	4	0
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	4	1		2	4	1		2	4	1		2	4	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.21	0.28	0.28		0.16	0.23	0.23		0.20	0.28	0.28		0.16	0.24	0.24	
ArrivalType:	4				4				4				4			
ProgFactor:	0.97	0.92	0.91		0.97	0.94	0.97		0.97	0.95	0.92		0.98	0.96	0.92	
Q1:	6.8	5.6	4.3		3.4	4.3	6.5		6.4	8.7	4.1		5.3	8.1	2.8	
UpstreamVC:	0.00	0.00	0.00		0.41	0.41	0.41		0.00	0.00	0.00		0.65	0.65	0.65	
UpstreamAdj:	0.00	0.00	0.00		0.92	0.92	0.92		0.00	0.00	0.00		0.71	0.71	0.71	
EarlyArrAdj:	1.00	1.00	1.00		0.31	0.40	0.37		1.00	1.00	1.00		0.25	0.33	0.30	
Q2:	2.3	1.0	0.8		0.3	0.3	0.9		2.2	2.2	0.8		0.6	0.8	0.2	
HCM2KQueue:	9.1	6.5	5.1		3.7	4.6	7.4		8.6	10.9	4.9		5.9	9.0	2.9	
70th%Factor:	1.18	1.18	1.19		1.19	1.19	1.18		1.18	1.18	1.19		1.19	1.18	1.19	
HCM2k70thQ:	10.7	7.8	6.1		4.4	5.4	8.8		10.2	12.8	5.9		7.0	10.6	3.5	
85th%Factor:	1.52	1.54	1.55		1.57	1.56	1.53		1.52	1.51	1.55		1.55	1.52	1.57	
HCM2k85thQ:	13.8	10.1	8.0		5.8	7.1	11.4		13.2	16.4	7.7		9.1	13.7	4.6	
90th%Factor:	1.65	1.69	1.71		1.73	1.72	1.68		1.66	1.63	1.71		1.70	1.66	1.75	
HCM2k90thQ:	15.0	11.0	8.8		6.4	7.9	12.5		14.3	17.7	8.4		10.0	14.9	5.1	
95th%Factor:	1.86	1.92	1.95		1.99	1.97	1.90		1.87	1.83	1.96		1.93	1.86	2.01	
HCM2k95thQ:	16.9	12.5	10.0		7.4	9.0	14.1		16.2	19.9	9.6		11.4	16.7	5.9	
98th%Factor:	2.20	2.30	2.37		2.45	2.40	2.26		2.21	2.13	2.38		2.34	2.20	2.50	
HCM2k98thQ:	20.0	15.1	12.2		9.1	11.0	16.8		19.1	23.2	11.8		13.7	19.8	7.4	

EPAP No Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.904
Loss Time (sec): 12 | Average Delay (sec/veh): 39.8
Optimal Cycle: 111 | Level Of Service: D

Street Name:	Hammer Lane						Holman Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2 1 0	2	0	3 0 1	2	0	3 1 0	2	0	3 1 0
Volume Module:	PM Peak Hour											
Base Vol:	558	764	512	198	508	119	338	1081	324	473	963	75
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	558	764	512	198	508	119	338	1081	324	473	963	75
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	607	830	557	215	552	129	367	1175	352	514	1047	82
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	607	830	557	215	552	129	367	1175	352	514	1047	82
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	607	830	557	215	552	129	367	1175	352	514	1047	82
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.84	0.84	0.90	0.89	0.83	0.90	0.86	0.86	0.90	0.88	0.88
Lanes:	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.08	0.92	2.00	3.71	0.29
Final Sat.:	3432	3186	1593	3432	5083	1583	3432	5032	1508	3432	6219	484
Capacity Analysis Module:												
Vol/Sat:	0.18	0.26	0.35	0.06	0.11	0.08	0.11	0.23	0.23	0.15	0.17	0.17
Crit Moves:			****	****				****		****		
Green/Cycle:	0.28	0.39	0.39	0.07	0.17	0.17	0.16	0.26	0.26	0.17	0.26	0.26
Volume/Cap:	0.63	0.67	0.90	0.90	0.63	0.47	0.65	0.90	0.90	0.90	0.65	0.65
Delay/Veh:	32.6	26.3	36.8	80.0	39.7	38.5	41.7	43.1	43.1	58.8	33.9	33.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.6	26.3	36.8	80.0	39.7	38.5	41.7	43.1	43.1	58.8	33.9	33.9
LOS by Move:	C	C	D	E	D	D	D	D	D	E	C	C
HCM2k95thQ:	405	516	885	205	273	169	253	587	587	519	418	418

Note: Queue reported is the distance per lane in feet.

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2	0	2 1 0	2	0	3 0 1	2	0	3 1 0	2	0	3 1 0
Lane Group:	L	RT	RT	L	T	R	L	RT	RT	L	RT	RT
#LnsInGrps:	2	3	3	2	3	1	2	4	4	2	4	4
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:		8			8			8			8	
% Hev Veh:		2			2			2			2	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:		Include			Include			Include			Include	
% RT Prtct:		0			0			0			0	
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	1.00	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	1.00	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	0.94	0.94	xxxx	xxxx	0.85	xxxx	0.97	0.97	xxxx	0.99	0.99
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.92	0.92	0.93	0.98	0.83	0.93	0.95	0.95	0.93	0.97	0.97
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Fnl Sat Adj:	0.90	0.84	0.84	0.90	0.89	0.83	0.90	0.86	0.86	0.90	0.88	0.88
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

EPAP No Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.28	0.39	0.39	0.07	0.17	0.17	0.16	0.26	0.26	0.17	0.26	0.26
ArrivalType:		4			4			4			4	
ProgFactor:	0.94	0.90	0.96	1.00	0.97	0.96	0.97	0.98	0.98	0.99	0.95	0.95
Q1:	7.1	9.4	15.4	3.1	5.0	3.1	4.8	11.1	11.1	7.2	7.3	7.3
UpstreamVC:	0.00	0.00	0.00	0.22	0.22	0.22	0.71	0.71	0.71	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.98	0.98	0.98	0.64	0.64	0.64	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	0.21	0.37	0.33	0.22	0.30	0.30	1.00	1.00	1.00
Q2:	1.6	1.9	5.6	1.1	0.6	0.3	0.4	2.0	2.0	4.3	1.7	1.7
HCM2KQueue:	8.7	11.4	21.0	4.2	5.6	3.4	5.2	13.1	13.1	11.4	9.0	9.0
70th%Factor:	1.18	1.18	1.16	1.19	1.19	1.19	1.19	1.17	1.17	1.18	1.18	1.18
HCM2k70thQ:	10.2	13.3	24.3	4.9	6.7	4.0	6.2	15.4	15.4	13.4	10.6	10.6
85th%Factor:	1.52	1.51	1.45	1.56	1.55	1.57	1.55	1.49	1.49	1.50	1.52	1.52
HCM2k85thQ:	13.2	17.1	30.4	6.5	8.7	5.3	8.1	19.6	19.6	17.2	13.7	13.7
90th%Factor:	1.66	1.63	1.54	1.72	1.70	1.74	1.71	1.61	1.61	1.63	1.66	1.66
HCM2k90thQ:	14.4	18.5	32.3	7.2	9.6	5.9	8.9	21.1	21.1	18.6	14.9	14.9
95th%Factor:	1.87	1.82	1.69	1.98	1.94	2.00	1.95	1.79	1.79	1.82	1.86	1.86
HCM2k95thQ:	16.2	20.7	35.4	8.2	10.9	6.8	10.1	23.5	23.5	20.8	16.7	16.7
98th%Factor:	2.21	2.12	1.90	2.43	2.35	2.47	2.37	2.06	2.06	2.12	2.20	2.20
HCM2k98thQ:	19.2	24.0	39.9	10.1	13.2	8.4	12.3	27.1	27.1	24.2	19.8	19.8

EPAP No Project PM Pk Hr

Base Queue Length Report (feet)

Node	Intersection	Northbound L	-- T	-- R	Southbound L	-- T	-- R	Eastbound L	-- T	-- R	Westbound L	-- T	-- R
#3	[HCM2k95thQ]:	489	23	60	33	576	576	265	892	612	147	886	886
#4	[HCM2k95thQ]:	378	100	88	23	422	422	145	685	685	214	577	2
#5	[HCM2k95thQ]:	104	641	655	215	498	140	223	878	22	703	581	26
#6	[HCM2k95thQ]:	26	496	496	281	283	283	226	226	226	590	590	590
#7	[HCM2k95thQ]:	0	51	51	45	0	45	21	18	0	41	15	15
#8	[HCM2k95thQ]:	1344	212	83	46	408	674	819	1016	489	143	2101	2101
#9	[2Way95thQ]:	xxxx	xxxx	xxxx	12.5	xxxx	3.4	0.7	0.7	xxxx	xxxx	xxxx	xxxx
#10	[2Way95thQ]:	xxxx	xxxx	xxxx	6.4	6.4	6.4	0.7	0.7	xxxx	xxxx	xxxx	xxxx
#11	[HCM2k95thQ]:	0	0	0	49	0	22	29	20	0	0	17	0
#14	[2Way95thQ]:	xxxx	xxxx	xxxx	17.7	17.7	xxxx	xxxx	xxxx	xxxx	8.4	xxxx	43.7
#15	[2Way95thQ]:	4.5	4.5	xxxx	xxxx	xxxx	xxxx	114	xxxx	5.3	xxxx	xxxx	xxxx
#17	[HCM2k95thQ]:	172	102	222	46	105	12	23	220	176	232	103	103
#18	[HCM2k95thQ]:	87	360	248	225	218	18	73	36	117	224	23	273
#19	[HCM2k95thQ]:	237	77	249	153	72	136	193	182	248	274	191	218
#20	[2Way95thQ]:	xxxx	112	112	120	120	xxxx	xxxx	xxxx	xxxx	24.7	xxxx	xxxx
#21	[2Way95thQ]:	14.6	14.6	xxxx	xxxx	xxxx	xxxx	69.7	xxxx	204	xxxx	xxxx	xxxx
#24	[HCM2k95thQ]:	262	260	260	103	403	403	130	130	148	229	32	32
#25	[HCM2k95thQ]:	109	381	64	169	263	263	174	237	237	233	209	209
#26	[HCM2k95thQ]:	423	314	250	184	225	353	404	497	241	284	419	148
#27	[HCM2k95thQ]:	405	516	885	205	273	169	253	587	587	519	418	418

EPAP No Project PM Pk Hr With Recommended Improvements

Scenario Report

Scenario:	EPAP No Proj PM
Command:	EPAP No Proj PM
Volume:	EPAP PM
Geometry:	EPAP No Proj
Impact Fee:	Default Impact Fee
Trip Generation:	PM Pk Hr
Trip Distribution:	EPAP PM
Paths:	EPAP No Build
Routes:	Default Route
Configuration:	Default Configuration

EPAP No Project PM Pk Hr With Recommended Improvements

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	D	36.9	0.876	D	36.9	0.876	+ 0.000 D/V
# 8 Eight Mile Rd & West Ln	D	53.0	1.020	D	53.0	1.020	+ 0.000 D/V

EPAP No Project PM Pk Hr With Recommended Improvements

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]

EPAP No Project PM Pk Hr With Recommended Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.876
Loss Time (sec):	12	Average Delay (sec/veh):	36.9
Optimal Cycle:	99	Level Of Service:	D

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	1 0	1	1 0	2 0	1	1 0	1 1	0
Volume Module: PM Peak Hour												
Base Vol:	422	20	49	18	61	219	174	1454	583	73	1229	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	422	20	49	18	61	219	174	1454	583	73	1229	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	459	22	53	20	66	238	189	1580	634	79	1336	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	459	22	53	20	66	238	189	1580	634	79	1336	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	459	22	53	20	66	238	189	1580	634	79	1336	5
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.98	0.83	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.99	0.01
Final Sat.:	3432	1862	1583	1769	1862	1583	1769	3538	1583	1769	3520	14
Capacity Analysis Module:												
Vol/Sat:	0.13	0.01	0.03	0.01	0.04	0.15	0.11	0.45	0.40	0.04	0.38	0.38
Crit Moves:	****					****	****				****	
Green/Cycle:	0.15	0.24	0.24	0.08	0.17	0.17	0.12	0.50	0.50	0.05	0.43	0.43
Volume/Cap:	0.88	0.05	0.14	0.14	0.21	0.88	0.88	0.88	0.79	0.88	0.88	0.88
Delay/Veh:	56.7	28.9	29.7	43.2	35.9	66.0	73.6	27.8	25.9	106.1	31.8	31.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.7	28.9	29.7	43.2	35.9	66.0	73.6	27.8	25.9	106.1	31.8	31.8
LOS by Move:	E	C	C	D	D	E	E	C	C	F	C	C
HCM2k95thQ:	465	24	62	34	89	466	260	821	567	141	823	823

Note: Queue reported is the distance per lane in feet.

EPAP No Project PM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	1	0 1	1	0	1	0 1	1	0	2	0 1	1	0	1	1 0
Lane Group:	L		T	R	L		T	R	L		T	R	L		RT	RT
#LnsInGrps:	2		1	1	1		1	1	1		2	1	1		2	2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	0.95	
Fnl Sat Adj:	0.90	0.98	0.83		0.93	0.98	0.83		0.93	0.93	0.83		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP No Project PM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.15	0.24	0.24		0.08	0.17	0.17		0.12	0.50	0.50		0.05	0.43	0.43	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.90	0.90		0.97	0.94	0.99		0.99	0.90	0.85		1.00	0.94	0.94	
Q1:		6.4	0.4	1.0		0.5	1.5	6.4		5.1	18.7	12.3		2.2	16.8	16.8
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.99	0.99	0.99		0.68	0.68	0.68	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.11	0.11	0.11		0.67	0.67	0.67	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.03	0.08	0.07		0.12	0.43	0.43	
Q2:		3.7	0.1	0.2		0.2	0.3	3.7		0.2	0.6	0.3		0.6	2.5	2.5
HCM2KQueue:		10.1	0.5	1.2		0.7	1.8	10.1		5.3	19.2	12.6		2.8	19.3	19.3
70th%Factor:	1.18	1.20	1.20		1.20	1.20	1.18		1.19	1.16	1.17		1.19	1.16	1.16	
HCM2k70thQ:		11.9	0.6	1.4		0.8	2.1	11.9		6.3	22.4	14.8		3.3	22.4	22.4
85th%Factor:	1.51	1.60	1.59		1.59	1.58	1.51		1.55	1.46	1.50		1.57	1.46	1.46	
HCM2k85thQ:		15.3	0.7	1.9		1.0	2.8	15.3		8.3	28.1	18.9		4.4	28.1	28.1
90th%Factor:	1.64	1.79	1.78		1.79	1.77	1.64		1.71	1.55	1.61		1.75	1.55	1.55	
HCM2k90thQ:		16.6	0.8	2.1		1.2	3.1	16.6		9.1	29.9	20.3		4.9	30.0	30.0
95th%Factor:	1.84	2.08	2.06		2.08	2.04	1.84		1.95	1.71	1.80		2.01	1.71	1.71	
HCM2k95thQ:		18.6	1.0	2.5		1.4	3.6	18.6		10.4	32.8	22.7		5.6	32.9	32.9
98th%Factor:	2.16	2.66	2.61		2.65	2.57	2.16		2.36	1.93	2.08		2.51	1.93	1.93	
HCM2k98thQ:		21.8	1.2	3.1		1.7	4.5	21.8		12.6	37.1	26.2		7.0	37.2	37.2

EPAP No Project PM Pk Hr With Recommended Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	1.020
Loss Time (sec):	12	Average Delay (sec/veh):	53.0
Optimal Cycle:	180	Level Of Service:	D

Street Name:	West Lane								Eight Mile Road			
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	2	0 2	0 1		1	0 2	0 1		2	0 1	0 1		1	0 0	1 0	
Volume Module:	PM Peak Hour															
Base Vol:	528	385	84		14	320	204		264	728	458		68	865	3	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	528	385	84		14	320	204		264	728	458		68	865	3	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	574	418	91		15	348	222		287	791	498		74	940	3	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	574	418	91		15	348	222		287	791	498		74	940	3	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	574	418	91		15	348	222		287	791	498		74	940	3	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.90	0.93	0.83		0.93	0.93	0.83		0.90	0.98	0.83		0.93	0.98	0.98	
Lanes:	2.00	2.00	1.00		1.00	2.00	1.00		2.00	1.00	1.00		1.00	0.99	0.01	
Final Sat.:	3432	3538	1583		1769	3538	1583		3432	1862	1583		1769	1856	6	
Capacity Analysis Module:																
Vol/Sat:	0.17	0.12	0.06		0.01	0.10	0.14		0.08	0.42	0.31		0.04	0.51	0.51	
Crit Moves:	****						****		****					****		
Green/Cycle:	0.16	0.28	0.28		0.02	0.14	0.14		0.08	0.53	0.53		0.05	0.50	0.50	
Volume/Cap:	1.02	0.42	0.21		0.42	0.72	1.02		1.02	0.81	0.60		0.81	1.02	1.02	
Delay/Veh:	84.9	29.6	27.7		56.1	46.3	109.5		104.8	24.5	17.5		86.0	59.9	59.9	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	84.9	29.6	27.7		56.1	46.3	109.5		104.8	24.5	17.5		86.0	59.9	59.9	
LOS by Move:	F	C	C		E	D	F		F	C	B		F	E	E	
HCM2k95thQ:	549	240	94		52	326	531		402	801	399		131	1436	1436	

Note: Queue reported is the distance per lane in feet.

EPAP No Project PM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	0 1		1	0 2	0 1		2	0 1	0 1		1	0 0	1 0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	2	2	1		1	2	1		2	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		1.00	0.95	1.00		0.97	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.90	0.93	0.83		0.93	0.93	0.83		0.90	0.98	0.83		0.93	0.98	0.98	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP No Project PM Pk Hr With Recommended Improvements

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.16	0.28	0.28	0.02	0.14	0.14	0.08	0.53	0.53	0.05	0.50	0.50
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.91	0.89	1.00	0.98	1.00	1.00	0.83	0.74	1.00	1.00	1.00
Q1:	8.2	4.5	1.7	0.4	4.8	6.2	4.1	15.1	7.1	2.0	26.2	26.2
UpstreamVC:	0.23	0.23	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.31	0.31
UpstreamAdj:	0.98	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00	0.96	0.96	0.96
EarlyArrAdj:	0.34	0.49	0.44	1.00	1.00	1.00	1.00	1.00	1.00	0.17	0.67	0.67
Q2:	3.9	0.4	0.1	0.6	2.1	5.5	4.5	3.6	1.4	0.6	10.2	10.2
HCM2KQueue:	12.2	4.9	1.8	1.0	6.8	11.7	8.6	18.7	8.5	2.6	36.4	36.4
70th%Factor:	1.17	1.19	1.20	1.20	1.18	1.17	1.18	1.16	1.18	1.19	1.14	1.14
HCM2k70thQ:	14.3	5.8	2.2	1.2	8.1	13.7	10.1	21.8	10.1	3.1	41.5	41.5
85th%Factor:	1.50	1.55	1.58	1.59	1.54	1.50	1.53	1.46	1.53	1.58	1.39	1.39
HCM2k85thQ:	18.2	7.6	2.9	1.6	10.5	17.6	13.1	27.3	13.0	4.1	50.5	50.5
90th%Factor:	1.62	1.71	1.76	1.78	1.68	1.62	1.66	1.56	1.66	1.75	1.46	1.46
HCM2k90thQ:	19.7	8.4	3.2	1.8	11.5	19.0	14.3	29.1	14.2	4.5	53.3	53.3
95th%Factor:	1.81	1.96	2.04	2.07	1.91	1.81	1.87	1.71	1.87	2.02	1.58	1.58
HCM2k95thQ:	22.0	9.6	3.7	2.1	13.1	21.2	16.1	32.0	16.0	5.2	57.4	57.4
98th%Factor:	2.09	2.39	2.57	2.63	2.29	2.11	2.22	1.94	2.22	2.52	1.76	1.76
HCM2k98thQ:	25.4	11.7	4.7	2.6	15.7	24.7	19.0	36.2	18.9	6.5	64.0	64.0

EPAP No Project PM Pk Hr With Recommended Improvements

Base Queue Length Report (feet)

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
#3	[HCM2k95thQ]:	465	24	62	34	89	466	260	821	567	141	823	823
#8	[HCM2k95thQ]:	549	240	94	52	326	531	402	801	399	131	1436	1436

EPAP + Project AM Pk Hr - With Mitigation Meaures

Scenario Report

Scenario:	EPAP + Proj AM
Command:	EPAP + Proj AM
Volume:	EPAP AM
Geometry:	EPAP Proj
Impact Fee:	Default Impact Fee
Trip Generation:	AM Pk Hr
Trip Distribution:	EPAP AM
Paths:	EPAP Proj
Routes:	Default Route
Configuration:	Default Configuration

EPAP + Project AM Pk Hr - With Mitigation Meaures

Trip Generation Report

Forecast for AM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	750.00	ElemSchStudent	0.25	0.20	188	150	338	24.0
1	Village West	745.00	Tra Vigne SFDU	0.18	0.53	134	395	529	37.5
1	Village West	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	0.60	0.36	0	0	0	0.0
1	Village West	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt MFDU	0.10	0.41	0	0	0	0.0
1	Village West	1.00	Tra V Internal	-6.00	-6.00	-6	-6	-12	-0.9
1	Village West	0.00	GP Alt Interna	-7.00	-7.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-11.00	-7.00	0	0	0	0.0
1	Village West	0.00	Tra Vigne MFDU	0.10	0.40	0	0	0	0.0
	Zone 1 Subtotal					316	539	855	60.6
2	Village East	418.00	Tra Vigne SFDU	0.18	0.53	75	222	297	21.1
2	Village East	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
	Zone 2 Subtotal					75	222	297	21.1
3	Commercial	101.50	Tra V Comm KSF	0.60	0.36	61	37	98	7.0
3	Commercial	1.00	Tra V Pass-By	-9.00	-5.00	-9	-5	-14	-1.0
	Zone 3 Subtotal					52	32	84	6.0
4	Industrial	21.40	Indust KSF	0.15	0.03	3	1	4	0.3
	Zone 4 Subtotal					3	1	4	0.3
5	Hi Dens Res	340.00	Tra Vigne MFDU	0.10	0.40	34	136	170	12.1
	Zone 5 Subtotal					34	136	170	12.1
TOTAL						480	930	1410	100.0

EPAP + Project AM Pk Hr - With Mitigation Meaures

Trip Distribution Report

Percent Of Trips EPAP AM

Zone	To Gates 1	2	5	6	8	9	10	11	14	15	16
1	2.0	1.0	2.0	4.0	7.0	2.0	3.0	1.0	1.0	3.0	8.0
2	2.0	1.0	2.0	4.0	7.0	2.0	3.0	1.0	1.0	3.0	8.0
3	2.0	1.0	2.0	4.0	7.0	2.0	3.0	1.0	1.0	3.0	8.0
4	2.0	1.0	2.0	4.0	7.0	2.0	3.0	1.0	1.0	3.0	8.0
5	2.0	1.0	2.0	4.0	7.0	2.0	3.0	1.0	1.0	3.0	8.0

Zone	To Gates 17	18	19	20	22	23	24	25	26
1	1.0	3.0	29.0	5.0	2.0	18.0	6.0	0.0	2.0
2	1.0	3.0	29.0	5.0	2.0	18.0	6.0	0.0	2.0
3	1.0	3.0	29.0	5.0	2.0	18.0	6.0	0.0	2.0
4	1.0	3.0	29.0	5.0	2.0	18.0	6.0	0.0	2.0
5	1.0	3.0	29.0	5.0	2.0	18.0	6.0	0.0	2.0

EPAP + Project AM Pk Hr - With Mitigation Meaures

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in D/V
# 5 Eight Mile & Lower Sacto Rd	C	34.3	0.862	D	39.2	0.931	+ 4.835

EPAP + Project AM Pk Hr - With Mitigation Meaures

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]

EPAP + Project AM Pk Hr - With Mitigation Meaures

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.931
Loss Time (sec):	12	Average Delay (sec/veh):	39.2
Optimal Cycle:	126	Level Of Service:	D

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:AM Peak Hour												
Base Vol:	44	268	393	57	412	103	86	1020	21	311	814	61
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	268	393	57	412	103	86	1020	21	311	814	61
Added Vol:	0	0	38	10	0	0	0	48	0	74	93	19
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	44	268	431	67	412	103	86	1068	21	385	907	80
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	48	291	468	73	448	112	93	1161	23	418	986	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	48	291	468	73	448	112	93	1161	23	418	986	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	48	291	468	73	448	112	93	1161	23	418	986	87
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.98	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3432	1862	1583	1769	1862	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.01	0.16	0.30	0.04	0.24	0.07	0.05	0.33	0.01	0.24	0.28	0.05
Crit Moves:	****				****			****		****		
Green/Cycle:	0.01	0.22	0.47	0.06	0.26	0.26	0.10	0.35	0.35	0.25	0.51	0.51
Volume/Cap:	0.93	0.72	0.63	0.72	0.93	0.27	0.55	0.93	0.04	0.93	0.55	0.11
Delay/Veh:	148.9	42.7	21.6	69.0	61.1	30.0	46.7	43.6	21.3	62.5	17.0	12.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	148.9	42.7	21.6	69.0	61.1	30.0	46.7	43.6	21.3	62.5	17.0	12.8
LOS by Move:	F	D	C	E	E	C	D	D	C	E	B	B
HCM2k95thQ:	118	441	446	185	763	132	175	935	20	728	399	49

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr - With Mitigation Meaures

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	1	0 1	1	0	1	0 1	1	0	2	0 1	1	0	2	0 1
Lane Group:	L		T	R	L		T	R	L		T	R	L		T	R
#LnsInGrps:	2		1	1	1		1	1	1		2	1	1		2	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.90	0.98	0.83		0.93	0.98	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Project AM Pk Hr - With Mitigation Meaures

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.01	0.22	0.47		0.06	0.26	0.26		0.10	0.35	0.35		0.25	0.51	0.51	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.97	0.82		0.99	0.99	0.91		0.98	0.98	0.82		0.99	0.75	0.67	
Q1:		0.7	7.3	8.0		2.0	12.0	2.3		2.4	16.0	0.3		11.2	7.3	0.8
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:		1.6	2.2	1.6		1.7	5.7	0.4		1.1	6.4	0.0		5.5	1.2	0.1
HCM2KQueue:		2.3	9.5	9.6		3.7	17.7	2.6		3.5	22.3	0.4		16.8	8.5	1.0
70th%Factor:	1.19	1.18	1.18		1.19	1.16	1.19		1.19	1.16	1.20		1.17	1.18	1.20	
HCM2k70thQ:		2.8	11.2	11.4		4.4	20.6	3.1		4.2	25.9	0.5		19.6	10.1	1.1
85th%Factor:	1.58	1.52	1.52		1.57	1.47	1.57		1.57	1.44	1.60		1.47	1.53	1.59	
HCM2k85thQ:		3.7	14.5	14.6		5.8	25.9	4.1		5.5	32.2	0.6		24.7	13.0	1.5
90th%Factor:	1.76	1.65	1.65		1.73	1.57	1.75		1.74	1.53	1.79		1.57	1.66	1.78	
HCM2k90thQ:		4.1	15.7	15.9		6.4	27.7	4.6		6.1	34.2	0.7		26.4	14.2	1.7
95th%Factor:	2.03	1.85	1.85		1.99	1.72	2.02		1.99	1.67	2.09		1.74	1.87	2.07	
HCM2k95thQ:		4.7	17.6	17.8		7.4	30.5	5.3		7.0	37.4	0.8		29.1	16.0	2.0
98th%Factor:	2.54	2.18	2.18		2.45	1.96	2.52		2.46	1.88	2.67		1.98	2.22	2.63	
HCM2k98thQ:		5.9	20.8	21.0		9.1	34.6	6.6		8.7	42.0	1.0		33.1	18.9	2.5

EPAP + Project AM Pk Hr - With Mitigation Meaures

Future Queue Length Report (feet)

Node	Intersection	Northbound L	Northbound -- T	Northbound -- R	Southbound L	Southbound -- T	Southbound -- R	Eastbound L	Eastbound -- T	Eastbound -- R	Westbound L	Westbound -- T	Westbound -- R
#5	[HCM2k95thQ]:	118	441	446	185	763	132	175	935	20	728	399	49

Traffix 8.0.0715 (c) 2008 Dowling Assoc. Licensed to kdANDERSON TRANSP.

EPAP + Project AM Pk Hr

Scenario Report

Scenario:	EPAP + Proj AM
Command:	EPAP + Proj AM
Volume:	EPAP AM
Geometry:	EPAP Proj
Impact Fee:	Default Impact Fee
Trip Generation:	AM Pk Hr
Trip Distribution:	EPAP AM
Paths:	EPAP Proj
Routes:	Default Route
Configuration:	Default Configuration

EPAP + Project AM Pk Hr

Trip Generation Report

Forecast for AM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	750.00	ElemSchStudent	0.25	0.20	188	150	338	24.0
1	Village West	745.00	Tra Vigne SFDU	0.18	0.53	134	395	529	37.5
1	Village West	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	0.60	0.36	0	0	0	0.0
1	Village West	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt MFDU	0.10	0.41	0	0	0	0.0
1	Village West	1.00	Tra V Internal	-6.00	-6.00	-6	-6	-12	-0.9
1	Village West	0.00	GP Alt Interna	-7.00	-7.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-11.00	-7.00	0	0	0	0.0
1	Village West	0.00	Tra Vigne MFDU	0.10	0.40	0	0	0	0.0
	Zone 1 Subtotal					316	539	855	60.6
2	Village East	418.00	Tra Vigne SFDU	0.18	0.53	75	222	297	21.1
2	Village East	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
	Zone 2 Subtotal					75	222	297	21.1
3	Commercial	101.50	Tra V Comm KSF	0.60	0.36	61	37	98	7.0
3	Commercial	1.00	Tra V Pass-By	-9.00	-5.00	-9	-5	-14	-1.0
	Zone 3 Subtotal					52	32	84	6.0
4	Industrial	21.40	Indust KSF	0.15	0.03	3	1	4	0.3
	Zone 4 Subtotal					3	1	4	0.3
5	Hi Dens Res	340.00	Tra Vigne MFDU	0.10	0.40	34	136	170	12.1
	Zone 5 Subtotal					34	136	170	12.1
TOTAL						480	930	1410	100.0

EPAP + Project AM Pk Hr

Trip Distribution Report

Percent Of Trips EPAP AM

Zone	To Gates 1	2	5	6	8	9	10	11	14	15	16
1	2.0	1.0	2.0	4.0	7.0	2.0	3.0	1.0	1.0	3.0	8.0
2	2.0	1.0	2.0	4.0	7.0	2.0	3.0	1.0	1.0	3.0	8.0
3	2.0	1.0	2.0	4.0	7.0	2.0	3.0	1.0	1.0	3.0	8.0
4	2.0	1.0	2.0	4.0	7.0	2.0	3.0	1.0	1.0	3.0	8.0
5	2.0	1.0	2.0	4.0	7.0	2.0	3.0	1.0	1.0	3.0	8.0

Zone	To Gates 17	18	19	20	22	23	24	25	26
1	1.0	3.0	29.0	5.0	2.0	18.0	6.0	0.0	2.0
2	1.0	3.0	29.0	5.0	2.0	18.0	6.0	0.0	2.0
3	1.0	3.0	29.0	5.0	2.0	18.0	6.0	0.0	2.0
4	1.0	3.0	29.0	5.0	2.0	18.0	6.0	0.0	2.0
5	1.0	3.0	29.0	5.0	2.0	18.0	6.0	0.0	2.0

EPAP + Project AM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	E	57.2	1.021	E	60.6	1.041	+ 3.424 D/V
# 4 Eight Mile Rd & Davis Rd	C	34.4	0.828	D	36.0	0.859	+ 1.646 D/V
# 5 Eight Mile & Lower Sacto Rd	D	40.9	0.920	D	53.9	1.025	+13.000 D/V
# 6 West Lane & Armstrong Road	C	32.3	0.636	C	32.3	0.649	-0.056 D/V
# 7 West Lane & Ham Lane	A	8.7	0.273	A	9.1	0.279	+ 0.313 D/V
# 8 Eight Mile Rd & West Ln	D	43.2	0.915	E	55.8	1.020	+12.569 D/V
# 9 Eight Mile Road & Ham Lane	C	21.9	0.112	B	11.7	0.022	-10.228 D/V
# 10 Eight Mile & Leach Rd/St G	A	1.3	0.317	B	12.8	0.496	+11.532 D/V
# 11 Eight Mile & MickeGrove/Holman	A	1.3	0.277	A	9.0	0.381	+ 7.659 D/V
# 14 SR99 W Front & SB Ramps 8 Mile	B	11.3	0.332	B	12.1	0.345	+ 0.778 D/V
# 15 SR99 E Front & NB Ramps 8 Mile	C	20.5	0.377	D	29.9	0.606	+ 9.486 D/V
# 16 West & L.C.MarkTaylor/Marlette	A	0.6	0.362	B	16.6	0.583	+16.010 D/V
# 17 Holman & Lt Col Mark Taylor	C	30.0	0.338	C	30.3	0.348	+ 0.277 D/V
# 18 Morada Lane & West Lane	C	28.2	0.506	C	29.1	0.589	+ 0.911 D/V
# 19 Morada Lane & Holman Road	D	35.0	0.583	D	35.3	0.612	+ 0.229 D/V
# 20 SR99 W Front & SB Ramps Morada	D	29.2	0.701	D	31.9	0.728	+ 2.721 D/V
# 21 SR99 E Front & NB Ramps Morada	F	69.2	1.054	F	65.7	1.054	-3.401 D/V
# 24 West Ln & West Ln Frontage Rd	C	21.0	0.593	C	20.5	0.690	-0.500 D/V
# 25 West Lane & Knickerbocker Dr	C	25.3	0.473	C	23.3	0.539	-2.002 D/V
# 26 West Lane & Hammer Lane	C	32.8	0.554	C	32.6	0.603	-0.156 D/V
# 27 Hammer Lane & Holman Road	D	37.9	0.876	D	38.2	0.881	+ 0.251 D/V
# 51 Eight Mile & Commercial DW #1	A	0.0	0.000	B	12.1	0.006	+12.099 D/V
# 52 Eight Mile & Commercial DW #2	A	0.0	0.000	B	10.6	0.012	+10.566 D/V
# 53 Eight Mile Road & Road C	A	0.3	0.272	B	12.4	0.461	+12.149 D/V

EPAP + Project AM Pk Hr

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 54 West Lane & Commercial DW #3	A	0.0	0.000	B	10.3	0.006	+10.275 D/V
# 55 West Lane & Commercial DW #4	A	0.0	0.000	B	10.3	0.003	+10.274 D/V
# 56 West Lane & Road A	A	0.0	0.000	B	11.1	0.111	+11.070 D/V
# 57 Eight Mile & Hi Dens Res DW #1	A	0.0	0.000	B	14.1	0.158	+14.103 D/V
# 58 Eight Mile & Hi Dens Res DW #2	A	0.0	0.000	B	14.6	0.164	+14.567 D/V
# 60 Eight Mile & Industrial DW #1	A	0.0	0.000	A	0.0	0.000	+ 0.000 D/V
# 61 Eight Mile & Industrial DW #2	A	0.0	0.000	A	0.0	0.000	+ 0.000 D/V

EPAP + Project AM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 9 Eight Mile Road & Ham Lane	??? / ???	No / No
# 14 SR99 W Front & SB Ramps 8 Mile	??? / ???	No / No
# 15 SR99 E Front & NB Ramps 8 Mile	??? / ???	No / No
# 20 SR99 W Front & SB Ramps Morada	??? / ???	No / Yes
# 21 SR99 E Front & NB Ramps Morada	??? / ???	Yes / Yes
# 51 Eight Mile & Commercial DW #1	??? / ???	No / No
# 52 Eight Mile & Commercial DW #2	??? / ???	No / No
# 54 West Lane & Commercial DW #3	??? / ???	No / No
# 55 West Lane & Commercial DW #4	??? / ???	No / No
# 56 West Lane & Road A	??? / ???	No / No
# 57 Eight Mile & Hi Dens Res DW #1	??? / ???	No / No
# 58 Eight Mile & Hi Dens Res DW #2	??? / ???	No / No
# 60 Eight Mile & Industrial DW #1	??? / ???	No / No
# 61 Eight Mile & Industrial DW #2	??? / ???	No / No

EPAP + Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #9 Eight Mile Road & Ham Lane

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	1	0	0	0	0	1	1	0
Initial Vol:	0	0		0		0	0		11		0	1081		0		0	806		37	
ApproachDel:	xxxxxx					11.7					xxxxxx					xxxxxx				

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=11]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1935]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #9 Eight Mile Road & Ham Lane

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	1	0	0	0	0	1	1	0
Initial Vol:	0	0		0		0	0		11		0	1081		0		0	806		37	

Major Street Volume: 1924
Minor Approach Volume: 11
Minor Approach Volume Threshold: 59 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	103			1	469	106			0	0		0		0	14		0	297	
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					12.1				

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.0]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=311]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=990]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	103			1	469	106			0	0		0		0	14		0	297	

Major Street Volume: 679
Minor Approach Volume: 311
Minor Approach Volume Threshold: 414

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	152		197		0	0		301		233	154		0		50	0		0		0
ApproachDel:	xxxxxx					xxxxxx					29.9					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.7]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=204]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1087]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	152		197		0	0		301		233	154		0		50	0		0		0

Major Street Volume: 883
Minor Approach Volume: 204
Minor Approach Volume Threshold: 428

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #20 SR99 W Front & SB Ramps Morada

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	62	837			31	50		0		0	0		0		282	0		19	
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					31.9				

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=2.7]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=301]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1281]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #20 SR99 W Front & SB Ramps Morada

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	62	837			31	50		0		0	0		0		282	0		19	

Major Street Volume: 980
Minor Approach Volume: 301
Minor Approach Volume Threshold: 299

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #21 SR99 E Front & NB Ramps Morada

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0
Initial Vol:	230	451		0		0	511		2		95		0		242		0		0	
ApproachDel:	xxxxxx					xxxxxx					65.7					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=6.2]
SUCCEED - Vehicle-hours >= 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=337]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1531]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #21 SR99 E Front & NB Ramps Morada

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0
Initial Vol:	230	451		0		0	511		2		95		0		242		0		0	

Major Street Volume: 1194
Minor Approach Volume: 337
Minor Approach Volume Threshold: 237

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #51 Eight Mile & Commercial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	2	0	1	0	0	2	0	0
Initial Vol:	0		0		3	0		0		0	0		934		9	0		894		0
ApproachDel:	12.1					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=3]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1840]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #51 Eight Mile & Commercial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	2	0	1	0	0	2	0	0
Initial Vol:	0		0		3	0		0		0	0		934		9	0		894		0

Major Street Volume: 1837
Minor Approach Volume: 3
Minor Approach Volume Threshold: 75 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #52 Eight Mile & Commercial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	2	1	0	0	0	2	0	0
Initial Vol:	0		0		7	0		0		0	0		929		9	0		894		0
ApproachDel:	10.6					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=7]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1839]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #52 Eight Mile & Commercial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	2	1	0	0	0	2	0	0
Initial Vol:	0		0		7	0		0		0	0		929		9	0		894		0

Major Street Volume: 1832
Minor Approach Volume: 7
Minor Approach Volume Threshold: 76 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #54 West Lane & Commercial DW #3

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	835			12	0	1164			0	0		0	0	0	0		0	0	4
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					10.3				

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=4]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2015]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #54 West Lane & Commercial DW #3

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	835			12	0	1164			0	0		0	0	0	0		0	0	4

Major Street Volume: 2011
Minor Approach Volume: 4
Minor Approach Volume Threshold: 44 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #55 West Lane & Commercial DW #4

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	845			9	0	1164			0	0		0		0	0		0		2
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					10.3				

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=2]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2020]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #55 West Lane & Commercial DW #4

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	845			9	0	1164			0	0		0		0	0		0		2

Major Street Volume: 2018
Minor Approach Volume: 2
Minor Approach Volume Threshold: 43 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #56 West Lane & Road A

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	786			81	0	1164			0	0		0		0	0		0	0	68
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					11.1				

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=68]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2099]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #56 West Lane & Road A

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	786			81	0	1164			0	0		0		0	0		0	0	68

Major Street Volume: 2031
Minor Approach Volume: 68
Minor Approach Volume Threshold: 41 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #57 Eight Mile & Hi Dens Res DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		68	0		0		0	0		1020		17	0		863		0
ApproachDel:	14.1					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=68]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1968]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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EPAP + Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #57 Eight Mile & Hi Dens Res DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		68	0		0		0	0		1020		17	0		863		0

Major Street Volume: 1900
Minor Approach Volume: 68
Minor Approach Volume Threshold: 64 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #58 Eight Mile & Hi Dens Res DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 1	0	0	0	0 0	0	0	1	1 0	0	0	2	0 0
Initial Vol:	0	0	68		0	0		0	0	1071		17	0	863		0
ApproachDel:	14.6				xxxxxx				xxxxxx				xxxxxx			

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=68]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2019]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #58 Eight Mile & Hi Dens Res DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 1	0	0	0	0 0	0	0	1	1 0	0	0	2	0 0
Initial Vol:	0	0	68		0	0		0	0	1071		17	0	863		0

Major Street Volume: 1951
Minor Approach Volume: 68
Minor Approach Volume Threshold: 55 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #60 Eight Mile & Industrial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		0	0		0		0	0		1066		1	0		812		0
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					xxxxxx				

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #60 Eight Mile & Industrial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		0	0		0		0	0		1066		1	0		812		0

Major Street Volume: 1879
Minor Approach Volume: 0
Minor Approach Volume Threshold: 68 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #61 Eight Mile & Industrial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		0	0		0		0	0		1065		1	0		812		0
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					xxxxxx				

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #61 Eight Mile & Industrial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		0	0		0		0	0		1065		1	0		812		0

Major Street Volume: 1878
Minor Approach Volume: 0
Minor Approach Volume Threshold: 68 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.041
Loss Time (sec):	12	Average Delay (sec/veh):	60.6
Optimal Cycle:	180	Level Of Service:	E

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1 0 1	1	0	0 1 0	1	0	2 0 1	1	0	1 1 0
Volume Module:	AM Peak Hour											
Base Vol:	836	46	103	5	26	229	169	983	326	80	1148	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	836	46	103	5	26	229	169	983	326	80	1148	14
Added Vol:	0	0	5	0	0	0	0	29	0	9	56	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	836	46	108	5	26	229	169	1012	326	89	1204	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	909	50	117	5	28	249	184	1100	354	97	1309	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	909	50	117	5	28	249	184	1100	354	97	1309	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	909	50	117	5	28	249	184	1100	354	97	1309	15
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.85	0.85	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	2.00	1.00	1.00	1.00	0.10	0.90	1.00	2.00	1.00	1.00	1.98	0.02
Final Sat.:	3432	1862	1583	1769	164	1446	1769	3538	1583	1769	3490	41
Capacity Analysis Module:												
Vol/Sat:	0.26	0.03	0.07	0.00	0.17	0.17	0.10	0.31	0.22	0.05	0.37	0.37
Crit Moves:	****				****		****				****	
Green/Cycle:	0.25	0.40	0.40	0.02	0.17	0.17	0.10	0.39	0.39	0.07	0.36	0.36
Volume/Cap:	1.04	0.07	0.18	0.18	1.04	1.04	1.04	0.79	0.57	0.79	1.04	1.04
Delay/Veh:	78.8	18.3	19.4	51.5	108	107.8	123.8	30.1	25.2	75.1	68.4	68.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	78.8	18.3	19.4	51.5	108	107.8	123.8	30.1	25.2	75.1	68.4	68.4
LOS by Move:	E	B	B	D	F	F	F	C	C	E	E	E
HCM2k95thQ:	918	38	97	19	633	633	371	660	348	158	1119	1119

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	1	0 1	1	0	0	1 0	1	0	2	0 1	1	0	1	1 0
Lane Group:	L		T	R	L		RT	RT	L		T	R	L		RT	RT
#LnsInGrps:	2		1	1	1		1	1	1		2	1	1		2	2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.87	0.87		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.85	0.85		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	0.95	
Fnl Sat Adj:	0.90	0.98	0.83		0.93	0.85	0.85		0.93	0.93	0.83		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.25	0.40	0.40	0.02	0.17	0.17	0.10	0.39	0.39	0.07	0.36	0.36
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.78	0.80	1.00	1.00	1.00	1.00	0.92	0.87	0.99	1.00	1.00
Q1:	13.0	0.7	1.7	0.1	7.7	7.7	5.1	13.1	6.7	2.6	19.4	19.4
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.49	0.49	0.49	0.61	0.61	0.61
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.87	0.87	0.76	0.76	0.76
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.23	0.53	0.48	0.16	0.44	0.44
Q2:	8.9	0.1	0.2	0.2	6.6	6.6	2.8	1.9	0.6	0.5	8.1	8.1
HCM2KQueue:	21.9	0.7	1.9	0.4	14.3	14.3	7.9	15.0	7.3	3.2	27.5	27.5
70th%Factor:	1.16	1.20	1.20	1.20	1.17	1.17	1.18	1.17	1.18	1.19	1.15	1.15
HCM2k70thQ:	25.3	0.9	2.3	0.4	16.7	16.7	9.3	17.5	8.7	3.8	31.6	31.6
85th%Factor:	1.44	1.59	1.58	1.60	1.49	1.49	1.53	1.48	1.53	1.57	1.42	1.42
HCM2k85thQ:	31.6	1.2	3.0	0.6	21.3	21.3	12.0	22.2	11.3	5.0	39.0	39.0
90th%Factor:	1.53	1.79	1.76	1.79	1.60	1.60	1.67	1.59	1.68	1.74	1.50	1.50
HCM2k90thQ:	33.6	1.3	3.3	0.6	22.8	22.8	13.1	23.8	12.3	5.5	41.2	41.2
95th%Factor:	1.68	2.08	2.04	2.09	1.77	1.77	1.89	1.76	1.90	2.00	1.63	1.63
HCM2k95thQ:	36.7	1.5	3.9	0.7	25.3	25.3	14.9	26.4	13.9	6.3	44.8	44.8
98th%Factor:	1.89	2.64	2.56	2.67	2.03	2.03	2.25	2.02	2.27	2.48	1.82	1.82
HCM2k98thQ:	41.3	2.0	4.9	1.0	29.1	29.1	17.7	30.2	16.7	7.8	50.0	50.0

EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.859
Loss Time (sec):	12	Average Delay (sec/veh):	36.0
Optimal Cycle:	93	Level Of Service:	D

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	0 1	1	0 0	1 0	1	0 1	1 0	1	0 2	0 1
Volume Module:	AM Peak Hour											
Base Vol:	251	120	150	6	161	68	111	957	163	134	780	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	251	120	150	6	161	68	111	957	163	134	780	6
Added Vol:	0	0	14	0	0	0	0	34	0	28	65	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	251	120	164	6	161	68	111	991	163	162	845	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	273	130	178	7	175	74	121	1077	177	176	918	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	273	130	178	7	175	74	121	1077	177	176	918	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	273	130	178	7	175	74	121	1077	177	176	918	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.94	0.94	0.93	0.91	0.91	0.93	0.93	0.83
Lanes:	1.00	1.00	1.00	1.00	0.70	0.30	1.00	1.72	0.28	1.00	2.00	1.00
Final Sat.:	1769	1862	1583	1769	1250	528	1769	2974	489	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.15	0.07	0.11	0.00	0.14	0.14	0.07	0.36	0.36	0.10	0.26	0.00
Crit Moves:	****				****			****		****		
Green/Cycle:	0.18	0.33	0.33	0.01	0.16	0.16	0.11	0.42	0.42	0.12	0.43	0.43
Volume/Cap:	0.86	0.21	0.34	0.34	0.86	0.86	0.61	0.86	0.86	0.86	0.61	0.01
Delay/Veh:	60.1	24.2	25.6	59.4	62.5	62.5	47.8	31.6	31.6	72.0	23.0	16.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.1	24.2	25.6	59.4	62.5	62.5	47.8	31.6	31.6	72.0	23.0	16.6
LOS by Move:	E	C	C	E	E	E	D	C	C	E	C	B
HCM2k95thQ:	499	126	187	31	471	471	167	746	746	376	477	5

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	1	0 1	1	0	0	1 0	1	0	1	1 0	1	0	2	0 1
Lane Group:	L		T	R	L		RT	RT	L		RT	RT	L		T	R
#LnsInGrps:	1		1	1	1		1	1	1		2	2	1		2	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.96	0.96		xxxx	0.98	0.98		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.94	0.94		0.93	0.96	0.96		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	0.95		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	0.98	0.83		0.93	0.94	0.94		0.93	0.91	0.91		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.18	0.33	0.33		0.01	0.16	0.16		0.11	0.42	0.42		0.12	0.43	0.43	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.86	0.87		1.00	0.99	0.99		0.98	0.93	0.93		0.99	0.85	0.75	
Q1:	7.3	2.2	3.3		0.2	6.7	6.7		3.1	15.5	15.5		4.8	8.9	0.1	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.79	0.79	0.79		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.51	0.51	0.51		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.14	0.32	0.32		1.00	1.00	1.00	
Q2:	3.7	0.3	0.5		0.4	3.6	3.6		0.2	1.7	1.7		3.2	1.5	0.0	
HCM2KQueue:	10.9	2.5	3.8		0.6	10.2	10.2		3.4	17.3	17.3		8.0	10.4	0.1	
70th%Factor:	1.18	1.19	1.19		1.20	1.18	1.18		1.19	1.16	1.16		1.18	1.18	1.20	
HCM2k70thQ:	12.9	3.0	4.5		0.7	12.1	12.1		4.0	20.1	20.1		9.4	12.2	0.1	
85th%Factor:	1.51	1.58	1.56		1.59	1.51	1.51		1.57	1.47	1.47		1.53	1.51	1.60	
HCM2k85thQ:	16.5	3.9	5.9		0.9	15.5	15.5		5.3	25.3	25.3		12.2	15.7	0.1	
90th%Factor:	1.63	1.75	1.73		1.79	1.64	1.64		1.74	1.57	1.57		1.67	1.64	1.80	
HCM2k90thQ:	17.8	4.4	6.5		1.1	16.8	16.8		5.8	27.1	27.1		13.3	17.0	0.2	
95th%Factor:	1.83	2.02	1.99		2.08	1.84	1.84		2.00	1.73	1.73		1.88	1.84	2.10	
HCM2k95thQ:	20.0	5.0	7.5		1.2	18.8	18.8		6.7	29.9	29.9		15.1	19.1	0.2	
98th%Factor:	2.13	2.53	2.45		2.66	2.16	2.16		2.47	1.97	1.97		2.24	2.15	2.69	
HCM2k98thQ:	23.3	6.3	9.2		1.6	22.1	22.1		8.3	33.9	33.9		17.9	22.3	0.2	

EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.025
Loss Time (sec):	12	Average Delay (sec/veh):	53.9
Optimal Cycle:	180	Level Of Service:	D

Street Name:	Lower Sacramento Road							Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Y+R:	4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0		
Lanes:	2	0	1	0	1	1	0	1	0	1	1	0	2	0	1	1	0	2	0	1
Volume Module:	AM Peak Hour																			
Base Vol:	44	268	393			57	412	103			86	1020	21			311	814	61		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	44	268	393			57	412	103			86	1020	21			311	814	61		
Added Vol:	0	0	38			10	0	0			0	48	0			74	93	19		
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0		
Initial Fut:	44	268	431			67	412	103			86	1068	21			385	907	80		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92		
PHF Volume:	48	291	468			73	448	112			93	1161	23			418	986	87		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	48	291	468			73	448	112			93	1161	23			418	986	87		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
FinalVolume:	48	291	468			73	448	112			93	1161	23			418	986	87		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900		
Adjustment:	0.90	0.98	0.83			0.93	0.98	0.83			0.93	0.93	0.83			0.93	0.93	0.83		
Lanes:	2.00	1.00	1.00			1.00	1.00	1.00			2.00	1.00	1.00			1.00	2.00	1.00		
Final Sat.:	3432	1862	1583			1769	1862	1583			1769	3538	1583			1769	3538	1583		
Capacity Analysis Module:																				
Vol/Sat:	0.01	0.16	0.30			0.04	0.24	0.07			0.05	0.33	0.01			0.24	0.28	0.05		
Crit Moves:			****			****						****				****				
Green/Cycle:	0.02	0.29	0.29			0.04	0.31	0.31			0.09	0.32	0.32			0.23	0.46	0.46		
Volume/Cap:	0.77	0.54	1.02			1.02	0.77	0.23			0.60	1.02	0.05			1.02	0.60	0.12		
Delay/Veh:	93.4	31.1	84.1			161.8	37.7	25.8			50.4	67.2	23.5			89.5	20.6	15.3		
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
AdjDel/Veh:	93.4	31.1	84.1			161.8	37.7	25.8			50.4	67.2	23.5			89.5	20.6	15.3		
LOS by Move:	F	C	F			F	D	C			D	E	C			F	C	B		
HCM2k95thQ:	104	352	901			251	607	117			187	1092	22			831	471	58		

Note: Queue reported is the distance per lane in feet.

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Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	2	0	1	0	1		1	0	1	0	1		1	0	2	0	1		1	0	2	0	1	
Lane Group:	L		T		R		L		T		R		L		T		R		L		T		R	
#LnsInGrps:	2		1		1		1		1		1		1		2		1		1		2		1	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:			8						8						8						8			
% Hev Veh:			2						2						2						2			
Grade:			0%						0%						0%						0%			
Parking/Hr:			No						No						No						No			
Bus Stp/Hr:			0						0						0						0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0						0						0						0			
ExclusiveRT:			Include						Include						Include						Include			
% RT Prtct:			0						0						0						0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx	xxxx				1	xxxx	xxxx				1	xxxx	xxxx				1	xxxx	xxxx			
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Hev Veh Adj:	0.98	0.98	0.98				0.98	0.98	0.98				0.98	0.98	0.98				0.98	0.98	0.98			
Grade Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Parking Adj:	xxxx	xxxx	1.00				xxxx	xxxx	1.00				xxxx	xxxx	1.00				xxxx	xxxx	1.00			
Bus Stp Adj:	xxxx	xxxx	1.00				xxxx	xxxx	1.00				xxxx	xxxx	1.00				xxxx	xxxx	1.00			
Area Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
RT Adj:	xxxx	xxxx	0.85				xxxx	xxxx	0.85				xxxx	xxxx	0.85				xxxx	xxxx	0.85			
LT Adj:	0.95	xxxx	xxxxx				0.95	xxxx	xxxxx				0.95	xxxx	xxxxx				0.95	xxxx	xxxxx			
PedBike Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
HCM Sat Adj:	0.93	0.98	0.83				0.93	0.98	0.83				0.93	0.98	0.83				0.93	0.98	0.83			
Usr Sat Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
MLF Sat Adj:	0.97	1.00	1.00				1.00	1.00	1.00				1.00	0.95	1.00				1.00	0.95	1.00			
Fnl Sat Adj:	0.90	0.98	0.83				0.93	0.98	0.83				0.93	0.93	0.83				0.93	0.93	0.83			
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			

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Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.02	0.29	0.29	0.04	0.31	0.31	0.09	0.32	0.32	0.23	0.46	0.46
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.92	1.00	1.00	0.95	0.87	0.99	1.00	0.85	1.00	0.82	0.73
Q1:	0.7	6.3	13.0	2.0	10.7	2.0	2.5	17.0	0.4	11.6	8.8	1.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	1.4	1.1	8.4	3.1	2.9	0.3	1.3	9.7	0.0	7.9	1.5	0.1
HCM2KQueue:	2.0	7.4	21.4	5.2	13.6	2.3	3.8	26.7	0.4	19.5	10.2	1.1
70th%Factor:	1.20	1.18	1.16	1.19	1.17	1.19	1.19	1.15	1.20	1.16	1.18	1.20
HCM2k70thQ:	2.4	8.8	24.8	6.1	16.0	2.8	4.5	30.7	0.5	22.7	12.0	1.4
85th%Factor:	1.58	1.53	1.45	1.55	1.49	1.58	1.56	1.42	1.60	1.46	1.51	1.59
HCM2k85thQ:	3.2	11.4	31.0	8.0	20.3	3.6	5.9	38.0	0.7	28.4	15.5	1.8
90th%Factor:	1.76	1.68	1.54	1.71	1.60	1.76	1.73	1.51	1.79	1.55	1.64	1.78
HCM2k90thQ:	3.6	12.4	32.9	8.8	21.8	4.0	6.5	40.2	0.7	30.3	16.8	2.0
95th%Factor:	2.04	1.90	1.68	1.95	1.78	2.03	1.99	1.64	2.09	1.70	1.84	2.06
HCM2k95thQ:	4.2	14.1	36.0	10.1	24.3	4.7	7.5	43.7	0.9	33.2	18.8	2.3
98th%Factor:	2.55	2.26	1.89	2.37	2.05	2.54	2.45	1.83	2.67	1.92	2.16	2.62
HCM2k98thQ:	5.2	16.8	40.5	12.2	27.9	5.8	9.2	48.8	1.1	37.5	22.1	3.0

EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.649
Loss Time (sec): 12 Average Delay (sec/veh): 32.3
Optimal Cycle: 53 Level Of Service: C

Street Name:	West Lane						Armstrong Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	0	1	1	0	0	0	1!	0	0	0	0	1!	0	0
Volume Module:	AM Peak Hour											
Base Vol:	4	387	76	203	525	33	45	172	5	60	97	96
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	387	76	203	525	33	45	172	5	60	97	96
Added Vol:	0	37	0	0	19	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	424	76	203	544	33	45	172	5	60	97	96
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	4	461	83	221	591	36	49	187	5	65	105	104
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	461	83	221	591	36	49	187	5	65	105	104
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	461	83	221	591	36	49	187	5	65	105	104
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.91	0.91	0.93	0.92	0.92	0.97	0.97	0.97	0.92	0.92	0.92
Lanes:	1.00	1.70	0.30	1.00	1.89	0.11	0.20	0.78	0.02	0.24	0.38	0.38
Final Sat.:	1769	2931	525	1769	3305	201	373	1424	41	414	669	662
Capacity Analysis Module:												
Vol/Sat:	0.00	0.16	0.16	0.12	0.18	0.18	0.13	0.13	0.13	0.16	0.16	0.16
Crit Moves:		****		****				****			****	
Green/Cycle:	0.01	0.24	0.24	0.19	0.43	0.43	0.20	0.20	0.20	0.24	0.24	0.24
Volume/Cap:	0.42	0.65	0.65	0.65	0.42	0.42	0.65	0.65	0.65	0.65	0.65	0.65
Delay/Veh:	74.4	35.8	35.8	41.6	20.1	20.1	40.6	40.6	40.6	37.5	37.5	37.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	74.4	35.8	35.8	41.6	20.1	20.1	40.6	40.6	40.6	37.5	37.5	37.5
LOS by Move:	E	D	D	D	C	C	D	D	D	D	D	D
HCM2k95thQ:	30	398	398	339	283	283	360	360	360	387	387	387

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 1	1	0	1	0 1	1	0	0	0 1!	0	0	0	0 1!	0	0
Lane Group:	L	RT		RT	L	RT		RT	LTR	LTR		LTR	LTR	LTR		LTR
#LnsInGrps:	1	2		2	1	2		2	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		4	4		4	4	4		4
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98		0.98	0.98	0.98		0.98
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
RT Adj:	xxxx	0.98	0.98		xxxx	0.99	0.99		1.00	1.00		1.00	0.95	0.95		0.95
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.99	0.99		0.99	0.99	0.99		0.99
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
HCM Sat Adj:	0.93	0.96	0.96		0.93	0.97	0.97		0.97	0.97		0.97	0.92	0.92		0.92
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
MLF Sat Adj:	1.00	0.95	0.95		1.00	0.95	0.95		1.00	1.00		1.00	1.00	1.00		1.00
Fnl Sat Adj:	0.93	0.91	0.91		0.93	0.92	0.92		0.97	0.97		0.97	0.92	0.92		0.92
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.01	0.24	0.24		0.19	0.43	0.43		0.20	0.20	0.20		0.24	0.24	0.24	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.95	0.95		0.97	0.81	0.81		0.96	0.96	0.96		0.95	0.95	0.95	
Q1:		0.1	6.8	6.8		5.5	5.2	5.2		5.9	5.9	5.9		6.5	6.5	6.5
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:		0.4	1.7	1.7		1.7	0.7	0.7		1.7	1.7	1.7		1.7	1.7	1.7
HCM2KQueue:		0.6	8.5	8.5		7.1	5.9	5.9		7.6	7.6	7.6		8.2	8.2	8.2
70th%Factor:	1.20	1.18	1.18		1.18	1.19	1.19		1.18	1.18	1.18		1.18	1.18	1.18	
HCM2k70thQ:		0.7	10.0	10.0		8.4	7.0	7.0		9.0	9.0	9.0		9.7	9.7	9.7
85th%Factor:	1.59	1.53	1.53		1.54	1.55	1.55		1.53	1.53	1.53		1.53	1.53	1.53	
HCM2k85thQ:		0.9	13.0	13.0		11.0	9.1	9.1		11.7	11.7	11.7		12.6	12.6	12.6
90th%Factor:	1.79	1.66	1.66		1.68	1.70	1.70		1.67	1.67	1.67		1.67	1.67	1.67	
HCM2k90thQ:		1.0	14.1	14.1		12.0	10.0	10.0		12.7	12.7	12.7		13.7	13.7	13.7
95th%Factor:	2.08	1.87	1.87		1.90	1.93	1.93		1.89	1.89	1.89		1.88	1.88	1.88	
HCM2k95thQ:		1.2	15.9	15.9		13.6	11.3	11.3		14.4	14.4	14.4		15.5	15.5	15.5
98th%Factor:	2.66	2.22	2.22		2.28	2.34	2.34		2.26	2.26	2.26		2.23	2.23	2.23	
HCM2k98thQ:		1.5	18.9	18.9		16.2	13.7	13.7		17.2	17.2	17.2		18.4	18.4	18.4

EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.279
Loss Time (sec): 9 Average Delay (sec/veh): 9.1
Optimal Cycle: 25 Level Of Service: A

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0	1	1	0
Volume Module:AM Peak Hour												
Base Vol:	1	2	30	34	6	32	4	461	0	14	612	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	2	30	34	6	32	4	461	0	14	612	18
Added Vol:	0	0	13	0	0	0	0	25	0	3	16	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	2	43	34	6	32	4	486	0	17	628	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	1	2	47	37	7	35	4	528	0	18	683	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	2	47	37	7	35	4	528	0	18	683	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	2	47	37	7	35	4	528	0	18	683	20
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.85	0.85	0.85	0.79	0.79	0.79	0.93	0.93	0.95	0.93	0.93	0.93
Lanes:	0.02	0.04	0.94	0.48	0.08	0.44	1.00	2.00	0.00	1.00	1.94	0.06
Final Sat.:	35	71	1517	711	125	669	1769	3538	0	1769	3425	98
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.03	0.05	0.05	0.05	0.00	0.15	0.00	0.01	0.20	0.20
Crit Moves:					****		****				****	
Green/Cycle:	0.19	0.19	0.19	0.19	0.19	0.19	0.01	0.68	0.00	0.05	0.71	0.71
Volume/Cap:	0.17	0.17	0.17	0.28	0.28	0.28	0.28	0.22	0.00	0.22	0.28	0.28
Delay/Veh:	34.4	34.4	34.4	35.5	35.5	35.5	58.8	6.2	0.0	47.2	5.1	5.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.4	34.4	34.4	35.5	35.5	35.5	58.8	6.2	0.0	47.2	5.1	5.1
LOS by Move:	C	C	C	D	D	D	E	A	A	D	A	A
HCM2k95thQ:	66	66	66	109	109	109	23	64	0	40	54	54

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	0	0	1! 0	0	0	0	1! 0	0	1	0	1	1	0	1	0	1	1	0
Lane Group:	LTR	LTR	LTR		LTR	LTR	LTR		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	2	2		1	2	2	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	5	5	5		5	5	5		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	xxxxx	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	xxxxx	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	xxxxx	1.00		1.00	1.00	1.00	
Parking Adj:	1.00	1.00	1.00		1.00	1.00	1.00		xxxx	1.00	xxxxx		xxxx	1.00	1.00	
Bus Stp Adj:	1.00	1.00	1.00		1.00	1.00	1.00		xxxx	1.00	xxxxx		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	xxxxx		1.00	1.00	1.00	
RT Adj:	0.87	0.87	0.87		0.94	0.94	0.94		xxxx	xxxx	xxxxx		xxxx	1.00	1.00	
LT Adj:	1.00	1.00	1.00		0.86	0.86	0.86		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.85	0.85	0.85		0.79	0.79	0.79		0.93	0.98	1.00		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	0.95		1.00	0.95	0.95	
Fnl Sat Adj:	0.85	0.85	0.85		0.79	0.79	0.79		0.93	0.93	0.95		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	1.00	

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	100	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	17.65	17.65	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	18.65	18.65	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	18.65	18.65	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	1	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	1	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	1	37	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	0.02	0.47	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	0.47	0.02	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	0.03	1.03	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	78	50	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	2.17	1.39	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	1.33	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	3.00	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	13.05	4.36	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	0.75	0.75	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	3.58	1.69	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	5.60	14.29	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	0.00	0.00	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	0.53	0.98	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	1.52	1.48	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	1.00	1.00	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	0.11	0.16	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	1.00	0.86	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	1.00	0.86	xxxxxx	xxxxxx

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.19	0.19	0.19	0.19	0.19	0.19	0.01	0.68	0.00	0.05	0.71	0.71
ArrivalType:	4			4			4			4		
ProgFactor:	0.93	0.93	0.93	0.94	0.94	0.94	1.00	0.32	1.00	0.99	0.18	0.18
Q1:	1.1	1.1	1.1	1.8	1.8	1.8	0.1	1.0	0.0	0.5	0.7	0.7
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Q2:	0.2	0.2	0.2	0.4	0.4	0.4	0.3	0.3	0.0	0.3	0.4	0.4
HCM2KQueue:	1.3	1.3	1.3	2.1	2.1	2.1	0.4	1.2	0.0	0.8	1.0	1.0
70th%Factor:	1.20	1.20	1.20	1.19	1.19	1.19	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	1.5	1.5	1.5	2.6	2.6	2.6	0.5	1.5	0.0	0.9	1.3	1.3
85th%Factor:	1.59	1.59	1.59	1.58	1.58	1.58	1.60	1.59	1.60	1.59	1.59	1.59
HCM2k85thQ:	2.0	2.0	2.0	3.4	3.4	3.4	0.7	2.0	0.0	1.2	1.7	1.7
90th%Factor:	1.78	1.78	1.78	1.76	1.76	1.76	1.79	1.78	1.80	1.79	1.78	1.78
HCM2k90thQ:	2.3	2.3	2.3	3.8	3.8	3.8	0.8	2.2	0.0	1.4	1.9	1.9
95th%Factor:	2.06	2.06	2.06	2.03	2.03	2.03	2.09	2.06	2.10	2.08	2.07	2.07
HCM2k95thQ:	2.6	2.6	2.6	4.3	4.3	4.3	0.9	2.5	0.0	1.6	2.2	2.2
98th%Factor:	2.61	2.61	2.61	2.55	2.55	2.55	2.67	2.61	2.70	2.64	2.62	2.62
HCM2k98thQ:	3.3	3.3	3.3	5.4	5.4	5.4	1.2	3.2	0.0	2.0	2.7	2.7

EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	1.020
Loss Time (sec):	12	Average Delay (sec/veh):	55.8
Optimal Cycle:	180	Level Of Service:	E

Street Name:	West Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:	AM Peak Hour											
Base Vol:	398	273	64	31	445	185	194	735	522	106	584	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	398	273	64	31	445	185	194	735	522	106	584	8
Added Vol:	58	11	35	12	4	0	0	64	32	55	128	13
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	456	284	99	43	449	185	194	799	554	161	712	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	496	309	108	47	488	201	211	868	602	175	774	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	496	309	108	47	488	201	211	868	602	175	774	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	496	309	108	47	488	201	211	868	602	175	774	23
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.28	0.09	0.07	0.03	0.14	0.13	0.12	0.25	0.38	0.10	0.22	0.01
Crit Moves:	****				****				****	****		
Green/Cycle:	0.27	0.31	0.31	0.10	0.14	0.14	0.17	0.37	0.37	0.10	0.30	0.30
Volume/Cap:	1.02	0.28	0.22	0.28	1.02	0.94	0.72	0.66	1.02	1.02	0.72	0.05
Delay/Veh:	82.2	25.9	25.4	42.9	89.5	87.5	47.9	27.3	73.5	119.2	33.4	24.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	82.2	25.9	25.4	42.9	89.5	87.5	47.9	27.3	73.5	119.2	33.4	24.6
LOS by Move:	F	C	C	D	F	F	D	C	E	F	C	C
HCM2k95thQ:	829	157	103	79	587	452	357	514	1073	351	490	21

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	2 0	1		1 0	2 0	1		1 0	2 0	1		1 0	2 0	1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	2	1		1	2	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12				
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.27	0.31	0.31	0.10	0.14	0.14	0.17	0.37	0.37	0.10	0.30	0.30
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.87	0.87	0.97	1.00	1.00	0.98	0.90	1.00	1.00	0.94	0.86
Q1:	13.8	3.0	1.9	1.2	7.1	5.5	5.4	9.5	16.7	4.9	9.5	0.4
UpstreamVC:	0.49	0.49	0.49	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.33	0.33
UpstreamAdj:	0.86	0.86	0.86	0.00	0.00	0.00	0.00	0.00	0.00	0.95	0.95	0.95
EarlyArrAdj:	0.41	0.46	0.42	1.00	1.00	1.00	1.00	1.00	1.00	0.24	0.50	0.45
Q2:	5.7	0.2	0.1	0.4	6.0	4.3	2.1	1.8	9.4	2.5	1.2	0.0
HCM2KQueue:	19.5	3.1	2.0	1.5	13.1	9.8	7.5	11.3	26.2	7.4	10.7	0.4
70th%Factor:	1.16	1.19	1.20	1.20	1.17	1.18	1.18	1.18	1.15	1.18	1.18	1.20
HCM2k70thQ:	22.6	3.7	2.4	1.9	15.4	11.5	8.9	13.3	30.1	8.7	12.6	0.5
85th%Factor:	1.46	1.57	1.58	1.58	1.49	1.52	1.53	1.51	1.43	1.53	1.51	1.60
HCM2k85thQ:	28.4	4.9	3.2	2.5	19.6	14.8	11.6	17.0	37.3	11.3	16.2	0.6
90th%Factor:	1.55	1.74	1.76	1.77	1.61	1.65	1.67	1.63	1.51	1.68	1.63	1.79
HCM2k90thQ:	30.2	5.5	3.6	2.7	21.1	16.1	12.6	18.4	39.5	12.4	17.5	0.7
95th%Factor:	1.70	2.00	2.04	2.05	1.79	1.85	1.89	1.82	1.64	1.90	1.83	2.09
HCM2k95thQ:	33.2	6.3	4.1	3.2	23.5	18.1	14.3	20.6	42.9	14.0	19.6	0.8
98th%Factor:	1.92	2.49	2.56	2.59	2.06	2.17	2.26	2.12	1.83	2.27	2.14	2.67
HCM2k98thQ:	37.4	7.8	5.2	4.0	27.1	21.2	17.1	24.0	48.0	16.7	22.9	1.1

EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[11.7]

Street Name:	Ham Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 1	1 0	0	0 0	1 1	0
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	20	0	8	7	772	0	0	632	24
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	20	0	8	7	772	0	0	632	24
Added Vol:	0	0	0	0	0	3	0	302	0	0	174	13
HamLn No LT:	0	0	0	-20	0	0	-7	7	0	0	0	0
Initial Fut:	0	0	0	0	0	11	0	1081	0	0	806	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	0	0	12	0	1175	0	0	876	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	12	0	1175	0	0	876	40
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	1484	2071	458	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	116	53	550	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	116	53	550	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.00	0.00	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	550	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	11.7	xxxxx	7.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	A	*	*	*	*	*
ApproachDel:	xxxxxx				11.7		xxxxxx			xxxxxx		
ApproachLOS:	*				B		*			*		

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St G

Cycle (sec):	100	Critical Vol./Cap.(X):	0.496
Loss Time (sec):	12	Average Delay (sec/veh):	12.8
Optimal Cycle:	40	Level Of Service:	B

Street Name:	Leach Road/Street G						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	5	0	6	5	908	0	0	650	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	5	0	6	5	908	0	0	650	6
Added Vol:	70	0	81	0	0	0	63	220	24	27	110	0
HamLn No LT:	0	0	0	20	0	0	7	-20	0	0	0	0
Initial Fut:	70	0	81	25	0	6	75	1108	24	27	760	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	76	0	88	27	0	7	82	1204	26	29	826	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	76	0	88	27	0	7	82	1204	26	29	826	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	76	0	88	27	0	7	82	1204	26	29	826	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	0.93	1.00	0.83	0.93	0.93	0.93	0.93	0.93	0.93
Lanes:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.96	0.04	1.00	1.98	0.02
Final Sat.:	1769	0	1583	1769	0	1583	1769	3452	75	1769	3507	28
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.06	0.02	0.00	0.00	0.05	0.35	0.35	0.02	0.24	0.24
Crit Moves:			****	****				****		****		
Green/Cycle:	0.13	0.00	0.11	0.03	0.00	0.03	0.12	0.70	0.70	0.03	0.62	0.62
Volume/Cap:	0.33	0.00	0.50	0.50	0.00	0.13	0.38	0.50	0.50	0.50	0.38	0.38
Delay/Veh:	40.3	0.0	43.9	54.6	0.0	48.4	41.7	6.9	6.9	53.9	9.7	9.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.3	0.0	43.9	54.6	0.0	48.4	41.7	6.9	6.9	53.9	9.7	9.7
LOS by Move:	D	A	D	D	A	D	D	A	A	D	A	A
HCM2k95thQ:	118	0	158	79	0	17	132	154	154	82	188	188

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St G

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	1	0	1	0	0	1	0	1	1	0	1	0	1	1	0
Lane Group:	L	RT		RT	L	RT		RT	L	RT		RT	L	RT		RT
#LnsInGrps:	1	1		1	1	1		1	1	2		2	1	2		2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	xxxx	0.98		0.98	xxxx	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	1.00	1.00		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	1.00	0.83		0.93	1.00	0.83		0.93	0.98	0.98		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	0.95		1.00	0.95	0.95	
Fnl Sat Adj:	0.93	1.00	0.83		0.93	1.00	0.83		0.93	0.93	0.93		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	1.00		1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St G

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.13	0.00	0.11		0.03	0.00	0.03		0.12	0.70	0.70		0.03	0.62	0.62	
ArrivalType:		4				4				4				4		
ProgFactor:	0.96	1.00	0.98		0.99	1.00	0.99		0.97	0.26	0.26		0.99	0.52	0.52	
Q1:	1.9	0.0	2.2		0.7	0.0	0.2		2.0	2.1	2.1		0.8	3.2	3.2	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	0.00	1.00		1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.5	0.0	0.9		0.8	0.0	0.1		0.6	1.0	1.0		0.8	0.6	0.6	
HCM2KQueue:	2.3	0.0	3.2		1.5	0.0	0.3		2.6	3.1	3.1		1.6	3.8	3.8	
70th%Factor:	1.19	1.20	1.19		1.20	1.20	1.20		1.19	1.19	1.19		1.20	1.19	1.19	
HCM2k70thQ:	2.8	0.0	3.8		1.8	0.0	0.4		3.1	3.7	3.7		1.9	4.5	4.5	
85th%Factor:	1.58	1.60	1.57		1.59	1.60	1.60		1.57	1.57	1.57		1.58	1.56	1.56	
HCM2k85thQ:	3.7	0.0	5.0		2.4	0.0	0.5		4.1	4.8	4.8		2.5	5.9	5.9	
90th%Factor:	1.76	1.80	1.74		1.77	1.80	1.79		1.75	1.74	1.74		1.77	1.73	1.73	
HCM2k90thQ:	4.1	0.0	5.5		2.7	0.0	0.6		4.6	5.4	5.4		2.8	6.5	6.5	
95th%Factor:	2.03	2.10	2.00		2.05	2.10	2.09		2.02	2.01	2.01		2.05	1.99	1.99	
HCM2k95thQ:	4.7	0.0	6.3		3.2	0.0	0.7		5.3	6.2	6.2		3.3	7.5	7.5	
98th%Factor:	2.54	2.70	2.48		2.59	2.70	2.68		2.52	2.49	2.49		2.58	2.45	2.45	
HCM2k98thQ:	5.9	0.0	7.8		4.0	0.0	0.9		6.6	7.6	7.6		4.1	9.3	9.3	

EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Cycle (sec): 100 Critical Vol./Cap.(X): 0.381
Loss Time (sec): 12 Average Delay (sec/veh): 9.0
Optimal Cycle: 34 Level Of Service: A

Street Name:	Micke Grove Road/Holman Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	1	0	1	0	1	1	0	2	0	1	1	0	2	0	1
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	6	0	5	7	792	0	0	666	7
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	6	0	5	7	792	0	0	666	7
Added Vol:	32	0	0	0	0	34	65	147	89	0	72	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	32	0	0	6	0	39	72	939	89	0	738	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	35	0	0	7	0	42	78	1021	97	0	802	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	0	0	7	0	42	78	1021	97	0	802	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	35	0	0	7	0	42	78	1021	97	0	802	8
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	1.00	0.93	1.00	0.83	0.93	0.93	0.83	1.00	0.93	0.83
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1769	1900	1900	1769	1900	1583	1769	3538	1583	1900	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.00	0.00	0.00	0.03	0.04	0.29	0.06	0.00	0.23	0.00
Crit Moves:	****					****		****		****		
Green/Cycle:	0.05	0.00	0.00	0.12	0.00	0.07	0.12	0.76	0.76	0.00	0.63	0.63
Volume/Cap:	0.38	0.00	0.00	0.03	0.00	0.38	0.36	0.38	0.08	0.00	0.36	0.01
Delay/Veh:	48.5	0.0	0.0	38.7	0.0	46.6	41.2	4.2	3.1	0.0	8.7	6.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.5	0.0	0.0	38.7	0.0	46.6	41.2	4.2	3.1	0.0	8.7	6.7
LOS by Move:	D	A	A	D	A	D	D	A	A	A	A	A
HCM2k95thQ:	77	0	0	10	0	86	125	32	5	0	150	2

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	1	0 1	1	0	1	0 1	1	0	2	0 1	1	0	2	0 1
Lane Group:	L		T	R	L		T	R	L		T	R	L		T	R
#LnsInGrps:	1		1	1	1		1	1	1		2	1	1		2	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		xxxx	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	xxxxx		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
Hev Veh Adj:	0.98	xxxx	xxxxx		0.98	xxxx	0.98		0.98	0.98	0.98		xxxx	0.98	0.98	
Grade Adj:	1.00	xxxx	xxxxx		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
Parking Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	xxxx	xxxxx		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
RT Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		xxxx	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	1.00	1.00		0.93	1.00	0.83		0.93	0.98	0.83		1.00	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	1.00	1.00		0.93	1.00	0.83		0.93	0.93	0.83		1.00	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	0.00		1.00	0.00	1.00		1.00	1.00	1.00		0.00	1.00	1.00	

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.05	0.00	0.00	0.12	0.00	0.07	0.12	0.76	0.76	0.00	0.63	0.63
ArrivalType:	4				4				4				4			
ProgFactor:	0.99	1.00	1.00	0.95	1.00	0.98	0.97	0.00	0.00	1.00	0.47	0.42
Q1:	0.9	0.0	0.0	0.2	0.0	1.1	1.9	0.0	0.0	0.0	2.6	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.52
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.84
EarlyArrAdj:	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.69	0.62
Q2:	0.6	0.0	0.0	0.0	0.0	0.6	0.5	0.6	0.1	0.0	0.4	0.0
HCM2KQueue:	1.5	0.0	0.0	0.2	0.0	1.7	2.5	0.6	0.1	0.0	3.0	0.0
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.20	1.19	1.20	1.20	1.20	1.19	1.20
HCM2k70thQ:	1.8	0.0	0.0	0.2	0.0	2.0	2.9	0.7	0.1	0.0	3.6	0.0
85th%Factor:	1.59	1.60	1.60	1.60	1.60	1.58	1.58	1.59	1.60	1.60	1.57	1.60
HCM2k85thQ:	2.4	0.0	0.0	0.3	0.0	2.7	3.9	1.0	0.1	0.0	4.7	0.1
90th%Factor:	1.77	1.80	1.80	1.80	1.80	1.77	1.75	1.79	1.80	1.80	1.74	1.80
HCM2k90thQ:	2.6	0.0	0.0	0.3	0.0	3.0	4.3	1.1	0.2	0.0	5.2	0.1
95th%Factor:	2.05	2.10	2.10	2.09	2.10	2.05	2.02	2.08	2.10	2.10	2.01	2.10
HCM2k95thQ:	3.1	0.0	0.0	0.4	0.0	3.4	5.0	1.3	0.2	0.0	6.0	0.1
98th%Factor:	2.59	2.70	2.70	2.69	2.70	2.58	2.53	2.65	2.69	2.70	2.50	2.70
HCM2k98thQ:	3.9	0.0	0.0	0.5	0.0	4.3	6.2	1.6	0.2	0.0	7.4	0.1

EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Average Delay (sec/veh): 7.9 Worst Case Level Of Service: B[12.1]

Street Name:	SR 99 West Frontage Rd								SR 99 SB Ramps (Eight Mile Rd)							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	1 0	0	1	0	0 0	0	0	0	0 0	1	0	0	0 1
Volume Module:	AM Peak Hour															
Base Vol:	0	103	1	350	106	0	0	0	0	14	0	287				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	103	1	350	106	0	0	0	0	14	0	287				
Added Vol:	0	0	0	119	0	0	0	0	0	0	0	10				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	103	1	469	106	0	0	0	0	14	0	297				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92				
PHF Volume:	0	112	1	510	115	0	0	0	0	15	0	323				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	0	112	1	510	115	0	0	0	0	15	0	323				
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2				
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3				
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx	113	xxxx	xxxxx	xxxx	xxxx	xxxxx	1247	xxxx	112				
Potent Cap.:	xxxx	xxxx	xxxxx	1476	xxxx	xxxxx	xxxx	xxxx	xxxxx	191	xxxx	940				
Move Cap.:	xxxx	xxxx	xxxxx	1476	xxxx	xxxxx	xxxx	xxxx	xxxxx	119	xxxx	940				
Volume/Cap:	xxxx	xxxx	xxxx	0.35	xxxx	xxxx	xxxx	xxxx	xxxx	0.13	xxxx	0.34				
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx	39.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	10.6	xxxx	38.4				
Control Del:	xxxxx	xxxx	xxxxx	8.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	39.6	xxxx	10.8				
LOS by Move:	*	*	*	A	*	*	*	*	*	E	*	B				
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT				
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	1.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	xxxxx	xxxx	xxxxx	8.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*				
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			12.1						
ApproachLOS:	*			*			*			B						

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #14 SR99 W Front & SB Ramps 8 Mile

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
-----------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:       #218             #183
Dist(miles):      0.250            0.250
Speed (mph):       1.00             1.00
SignalIndex:      #22              #12
Cycle Time:         100 secs         100 secs
InitVolume:   545    15        149    20
Saturation:  1769  1334       1769   871
ArrivalType:    4     4          4     4
G/C:         0.37  0.19       0.15  0.04
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:          0.490 0.254      0.197 0.054
gq1:        15.70  0.84       6.76  2.17
gq2:        10.94  0.01       0.86  0.07
gq:         26.65  0.85       7.62  2.24
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:            0.550            0.550
beta:             0.645            0.645
ta (secs):       900.000          900.000
F:                0.003            0.003
f:          0.202 1.000      1.000 1.000
vcmax:         29     4         42     6
vcg:           32     4         45     6
vcmin:       1000  1000       1000  1000
tp:           0.0   0.0        0.0   0.0
p:                0.000            0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx  113 xxxxx xxxxx 1409  1248   115 1247  1247   112
AdjCnflVol:    0 xxxxx xxxxx  113 xxxxx xxxxx 1409  1248   115 1247  1247   112
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx  113 xxxxx xxxxx 1409  1248   115 1247  1247   112
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1623 xxxxx xxxxx 1476 xxxxx xxxxx  116   173   937  191   173   940
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1623 xxxxx xxxxx 1476 xxxxx xxxxx  116   173   937  191   173   940
```


EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Average Delay (sec/veh): 6.9 Worst Case Level Of Service: D[29.9]

```
Street Name:      SR 99 East Frontage Rd        SR 99 NB Ramps (Eight Mile Rd)
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
-----------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  0  0    0  0  1  0  1    1  0  0  0  1    0  0  0  0  0
-----------|---------------||---------------||---------------||---------------|
Volume Module:AM Peak Hour
Base Vol:     152  197     0     0  301   214    96    0    50     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  152  197     0     0  301   214    96    0    50     0    0     0
Added Vol:      0    0     0     0    0    19    58    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  152  197     0     0  301   233   154    0    50     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:   165  214     0     0  327   253   167    0    54     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:  165  214     0     0  327   253   167    0    54     0    0     0
-----------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4 xxxx   6.2 xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3 xxxxx xxxx xxxxx
-----------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  580 xxxx xxxxx  xxxx xxxx xxxxx   872 xxxx   327  xxxx xxxx xxxxx
Potent Cap.:  994 xxxx xxxxx  xxxx xxxx xxxxx   321 xxxx   714  xxxx xxxx xxxxx
Move Cap.:    994 xxxx xxxxx  xxxx xxxx xxxxx   276 xxxx   714  xxxx xxxx xxxxx
Volume/Cap:  0.17 xxxx  xxxx  xxxx xxxx  xxxx  0.61 xxxx  0.08  xxxx xxxx  xxxx
-----------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   14.9 xxxx xxxxx  xxxx xxxx xxxxx  91.1 xxxx   6.2  xxxx xxxx xxxxx
Control Del:  9.3 xxxx xxxxx xxxxx xxxx xxxxx  36.3 xxxx  10.5 xxxxx xxxx xxxxx
LOS by Move:    A    *     *     *    *     *     E    *     B     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:  0.6 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:  9.3 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     A    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx              29.9            xxxxxx
ApproachLOS:         *                *                 D                 *
```

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			12 feet			12 feet			12 feet	
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:		#222			#188							
Dist(miles):		0.250			0.250							
Speed (mph):		1.00			1.00							
SignalIndex:		#23			#13							
Cycle Time:		100 secs			100 secs							
InitVolume:	535	84		50	19							
Saturation:	1410	1040		1769	1597							
ArrivalType:	4	4		4	4							
G/C:	0.35	0.23		0.05	0.07							

*** Computation 1: Time for Queue to Clear at Each Upstream Intersection

P:	0.464	0.311	0.063	0.097
gq1:	20.32	5.56	2.65	1.07
gq2:	20.80	0.67	0.10	0.02
gq:	34.84	6.23	2.75	1.09

*** Computation 2: Time Intersection Blocked Because of Upstream Platoons

alpha:		0.550		0.550
beta:		0.645		0.645
ta (secs):		900.000		900.000
F:		0.003		0.003
f:	0.613	1.000	1.000	1.000
vcmax:	89	20	15	5
vcg:	89	25	15	6
vcmin:	1000	1000	1000	1000
tp:	0.0	0.0	0.0	0.0
p:		0.000		0.000

*** Computation 3: Platoon Event Periods

pdom/psubo: 0.000/0.000/Unconstrained

*** Computation 4: Conflicting Flows During Each Unblocked Period

InitCnflVol:	580	xxxxx	xxxxx	0	xxxxx	xxxxx	872	872	327	1026	1125	214
AdjCnflVol:	580	xxxxx	xxxxx	0	xxxxx	xxxxx	872	872	327	1026	1125	214
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	580	xxxxx	xxxxx	0	xxxxx	xxxxx	872	872	327	1026	1125	214

*** Computation 5: Capacity for Subject Movement During Unblocked Period

InitPotCap:	994	xxxxx	xxxxx	1623	xxxxx	xxxxx	321	289	714	213	205	826
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
Potent Cap.:	994	xxxxx	xxxxx	1623	xxxxx	xxxxx	321	289	714	213	205	826

EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 West & L.C.MarkTaylor/Marlette

Cycle (sec):	100	Critical Vol./Cap.(X):	0.583
Loss Time (sec):	9	Average Delay (sec/veh):	16.6
Optimal Cycle:	40	Level Of Service:	B

Street Name:	West Lane								Lt.Col.Mark Taylor/Marlette Rd							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	0	0	2	0	1	1	0	2	0	0	0	0	0	0	1	0
Volume Module: AMPeak Hour																
Base Vol:	0	735	0		0	1073	0	0	0	0	0	0	0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Initial Bse:	0	735	0		0	1073	0	0	0	0	0	0	0	0	0	
Added Vol:	0	119	80		45	46	0	0	0	0	304	0	14			
PasserByVol:	0	0	0		0	0	0	0	0	0	0	0	0			
Initial Fut:	0	854	80		45	1119	0	0	0	0	304	0	14			
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
PHF Volume:	0	928	87		49	1216	0	0	0	0	330	0	15			
Reduct Vol:	0	0	0		0	0	0	0	0	0	0	0	0			
Reduced Vol:	0	928	87		49	1216	0	0	0	0	330	0	15			
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
FinalVolume:	0	928	87		49	1216	0	0	0	0	330	0	15			
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900	1900	1900	1900	1900	1900	1900			
Adjustment:	1.00	0.93	0.83		0.93	0.93	1.00	1.00	1.00	1.00	0.93	1.00	0.83			
Lanes:	0.00	2.00	1.00		1.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00			
Final Sat.:	0	3538	1583		1769	3538	0	0	0	0	1769	0	1583			
Capacity Analysis Module:																
Vol/Sat:	0.00	0.26	0.05		0.03	0.34	0.00	0.00	0.00	0.00	0.19	0.00	0.01			
Crit Moves:	****					****					****					
Green/Cycle:	0.00	0.53	0.53		0.06	0.59	0.00	0.00	0.00	0.00	0.32	0.00	0.32			
Volume/Cap:	0.00	0.49	0.10		0.49	0.58	0.00	0.00	0.00	0.00	0.58	0.00	0.03			
Delay/Veh:	0.0	15.0	11.6		49.6	13.3	0.0	0.0	0.0	0.0	30.0	0.0	23.3			
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
AdjDel/Veh:	0.0	15.0	11.6		49.6	13.3	0.0	0.0	0.0	0.0	30.0	0.0	23.3			
LOS by Move:	A	B	B		D	B	A	A	A	A	C	A	C			
HCM2k95thQ:	0	333	45		68	339	0	0	0	0	391	0	14			

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #16 West & L.C.MarkTaylor/Marlette

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        0  0  2  0  1    1  0  2  0  0    0  0  0  0  0    1  0  0  0  1
Lane Group:  xxxx   T     R     L    T   xxxx  xxxx xxxx  xxxx    L  xxxx    R
#LnsInGrps:     0    2     1     1    2     0     0    0     0     1    0     1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:          8                8                8                8
% Hev Veh:            2                2                2                2
Grade:               0%               0%               0%               0%
Parking/Hr:          No               No               No               No
Bus Stp/Hr:           0                0                0                0
Area Type:    < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:          0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:           0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:  xxxx xxxx  xxxx     1 xxxx  xxxx  xxxx xxxx  xxxx     1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  xxxx 1.00  1.00  1.00 1.00 xxxxx  xxxx xxxx xxxxx  1.00 xxxx  1.00
Hev Veh Adj: xxxx 0.98  0.98  0.98 0.98 xxxxx  xxxx xxxx xxxxx  0.98 xxxx  0.98
Grade Adj:   xxxx 1.00  1.00  1.00 1.00 xxxxx  xxxx xxxx xxxxx  1.00 xxxx  1.00
Parking Adj: xxxx xxxx  1.00  xxxx 1.00 xxxxx  xxxx xxxx xxxxx  xxxx xxxx  1.00
Bus Stp Adj: xxxx xxxx  1.00  xxxx 1.00 xxxxx  xxxx xxxx xxxxx  xxxx xxxx  1.00
Area Adj:    xxxx 1.00  1.00  1.00 1.00 xxxxx  xxxx xxxx xxxxx  1.00 xxxx  1.00
RT Adj:      xxxx xxxx  0.85  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx  0.85
LT Adj:      xxxx xxxx xxxxx  0.95 xxxx xxxxx  xxxx xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 1.00 0.98  0.83  0.93 0.98  1.00  1.00 1.00  1.00  0.93 1.00  0.83
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 0.95  1.00  1.00 0.95  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Fnl Sat Adj: 1.00 0.93  0.83  0.93 0.93  1.00  1.00 1.00  1.00  0.93 1.00  0.83
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  0.00 1.00  1.00  1.00 1.00  0.00  0.00 0.00  0.00  1.00 0.00  1.00
```


EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #16 West & L.C.MarkTaylor/Marlette

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Green/Cycle: 0.00 0.53  0.53  0.06 0.59  0.00  0.00 0.00  0.00  0.32 0.00  0.32
ArrivalType:         4                4                4                4
ProgFactor:  1.00 0.70  0.63  0.99 0.63  1.00  1.00 1.00  1.00  0.91 1.00  0.85
Q1:           0.0  6.0   0.8   1.3  7.0   0.0   0.0  0.0   0.0   7.0  0.0   0.2
UpstreamVC:  0.00 0.00  0.00  1.02 1.02  0.00  0.00 0.00  0.00  0.00 0.00  0.00
UpstreamAdj: 0.00 0.00  0.00  0.09 0.09  0.00  0.00 0.00  0.00  0.00 0.00  0.00
EarlyArrAdj: 0.00 1.00  1.00  0.02 0.07  0.00  0.00 0.00  0.00  1.00 0.00  1.00
Q2:           0.0  1.0   0.1   0.0  0.1   0.0   0.0  0.0   0.0   1.3  0.0   0.0
HCM2KQueue:   0.0  7.0   0.9   1.3  7.1   0.0   0.0  0.0   0.0   8.3  0.0   0.3
------------|---------------||---------------||---------------||---------------|
70th%Factor: 1.20 1.18  1.20  1.20 1.18  1.20  1.20 1.20  1.20  1.18 1.20  1.20
HCM2k70thQ:   0.0  8.3   1.0   1.6  8.4   0.0   0.0  0.0   0.0   9.9  0.0   0.3
------------|---------------||---------------||---------------||---------------|
85th%Factor: 1.60 1.54  1.59  1.59 1.54  1.60  1.60 1.60  1.60  1.53 1.60  1.60
HCM2k85thQ:   0.0 10.7   1.4   2.1 10.9   0.0   0.0  0.0   0.0  12.7  0.0   0.4
------------|---------------||---------------||---------------||---------------|
90th%Factor: 1.80 1.68  1.78  1.77 1.68  1.80  1.80 1.80  1.80  1.66 1.80  1.79
HCM2k90thQ:   0.0 11.7   1.5   2.3 12.0   0.0   0.0  0.0   0.0  13.9  0.0   0.5
------------|---------------||---------------||---------------||---------------|
95th%Factor: 2.10 1.91  2.07  2.06 1.90  2.10  2.10 2.10  2.10  1.88 2.10  2.09
HCM2k95thQ:   0.0 13.3   1.8   2.7 13.6   0.0   0.0  0.0   0.0  15.7  0.0   0.6
------------|---------------||---------------||---------------||---------------|
98th%Factor: 2.70 2.28  2.64  2.60 2.28  2.70  2.70 2.70  2.70  2.23 2.70  2.68
HCM2k98thQ:   0.0 16.0   2.3   3.4 16.2   0.0   0.0  0.0   0.0  18.6  0.0   0.7
```

EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

Cycle (sec):	100	Critical Vol./Cap.(X):	0.348
Loss Time (sec):	12	Average Delay (sec/veh):	30.3
Optimal Cycle:	33	Level Of Service:	C

Street Name:	Holman Road								Lt. Col. Mark Taylor Street								
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Y+R:	4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0		
Lanes:	1	0	2	0	1	1	0	3	0	1	1	0	1	0	1	1	0	0	1	0
Volume Module:	AM Peak Hour																			
Base Vol:	133	98	87			11	174	7			9	135	126			149	104	4		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	133	98	87			11	174	7			9	135	126			149	104	4		
Added Vol:	0	8	0			0	43	0			0	0	0			0	0	0		
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0		
Initial Fut:	133	106	87			11	217	7			9	135	126			149	104	4		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92		
PHF Volume:	145	115	95			12	236	8			10	147	137			162	113	4		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	145	115	95			12	236	8			10	147	137			162	113	4		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
FinalVolume:	145	115	95			12	236	8			10	147	137			162	113	4		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900		
Adjustment:	0.93	0.93	0.83			0.93	0.89	0.83			0.93	0.98	0.83			0.93	0.97	0.97		
Lanes:	1.00	2.00	1.00			1.00	3.00	1.00			1.00	1.00	1.00			1.00	0.96	0.04		
Final Sat.:	1769	3538	1583			1769	5083	1583			1769	1862	1583			1769	1782	69		
Capacity Analysis Module:																				
Vol/Sat:	0.08	0.03	0.06			0.01	0.05	0.00			0.01	0.08	0.09			0.09	0.06	0.06		
Crit Moves:	****						****						****			****				
Green/Cycle:	0.23	0.33	0.33			0.04	0.13	0.13			0.04	0.25	0.25			0.26	0.47	0.47		
Volume/Cap:	0.35	0.10	0.18			0.18	0.35	0.04			0.13	0.32	0.35			0.35	0.13	0.13		
Delay/Veh:	32.4	23.2	24.0			48.0	39.7	37.8			47.1	31.0	31.4			30.3	15.0	15.0		
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
AdjDel/Veh:	32.4	23.2	24.0			48.0	39.7	37.8			47.1	31.0	31.4			30.3	15.0	15.0		
LOS by Move:	C	C	C			D	D	D			D	C	C			C	B	B		
HCM2k95thQ:	166	54	87			28	132	11			15	163	155			191	76	76		

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																				
Lanes:	1	0	2	0	1	1	0	3	0	1	1	0	1	0	1	1	0	0	1	0
Lane Group:	L		T		R	L		T		R	L		T		R	L		RT		RT
#LnsInGrps:	1		2		1	1		3		1	1		1		1	1		1		1
HCM Ops Input Saturation Adj Module:																				
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12
CrsswalkWid:			8					8					8					8		
% Hev Veh:			2					2					2					2		
Grade:			0%					0%					0%					0%		
Parking/Hr:			No					No					No					No		
Bus Stp/Hr:			0					0					0					0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																			
Cnft Ped/Hr:			0					0					0					0		
ExclusiveRT:			Include					Include					Include					Include		
% RT Prtct:			0					0					0					0		
HCM Ops f(lt) Adj Case Module:																				
f(lt) Case:	1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx		
HCM Ops Saturation Adj Module:																				
Ln Wid Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Hev Veh Adj:	0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98		
Grade Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Parking Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00		
Bus Stp Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00		
Area Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
RT Adj:	xxxx	xxxx	0.85			xxxx	xxxx	0.85			xxxx	xxxx	0.85			xxxx	0.99	0.99		
LT Adj:	0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx		
PedBike Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
HCM Sat Adj:	0.93	0.98	0.83			0.93	0.98	0.83			0.93	0.98	0.83			0.93	0.97	0.97		
Usr Sat Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Sat Adj:	1.00	0.95	1.00			1.00	0.91	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Fnl Sat Adj:	0.93	0.93	0.83			0.93	0.89	0.83			0.93	0.98	0.83			0.93	0.97	0.97		
Delay Adjustment Factor Module:																				
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																			
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >																			
DelAdjFctr:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.23	0.33	0.33	0.04	0.13	0.13	0.04	0.25	0.25	0.26	0.47	0.47
ArrivalType:		4			4			4			4	
ProgFactor:	0.93	0.84	0.85	0.99	0.96	0.95	0.99	0.92	0.92	0.91	0.72	0.72
Q1:	3.1	1.0	1.6	0.3	2.1	0.2	0.3	3.0	2.9	3.3	1.3	1.3
UpstreamVC:	0.18	0.18	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.99	0.99	0.99	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
EarlyArrAdj:	0.43	0.54	0.49	1.00	1.00	1.00	0.15	0.46	0.42	1.00	1.00	1.00
Q2:	0.2	0.1	0.1	0.2	0.5	0.0	0.0	0.2	0.2	0.5	0.2	0.2
HCM2KQueue:	3.3	1.0	1.7	0.5	2.6	0.2	0.3	3.3	3.1	3.9	1.5	1.5
70th%Factor:	1.19	1.20	1.20	1.20	1.19	1.20	1.20	1.19	1.19	1.19	1.20	1.20
HCM2k70thQ:	4.0	1.2	2.0	0.6	3.1	0.3	0.3	3.9	3.7	4.6	1.8	1.8
85th%Factor:	1.57	1.59	1.58	1.59	1.57	1.60	1.60	1.57	1.57	1.56	1.59	1.59
HCM2k85thQ:	5.2	1.7	2.7	0.8	4.1	0.3	0.5	5.1	4.9	6.0	2.4	2.4
90th%Factor:	1.74	1.78	1.77	1.79	1.75	1.80	1.79	1.74	1.74	1.73	1.77	1.77
HCM2k90thQ:	5.8	1.9	3.0	1.0	4.6	0.4	0.5	5.7	5.4	6.7	2.6	2.6
95th%Factor:	2.00	2.07	2.05	2.08	2.02	2.09	2.09	2.00	2.01	1.98	2.05	2.05
HCM2k95thQ:	6.6	2.2	3.5	1.1	5.3	0.4	0.6	6.5	6.2	7.6	3.0	3.0
98th%Factor:	2.47	2.62	2.58	2.66	2.52	2.68	2.68	2.48	2.49	2.44	2.59	2.59
HCM2k98thQ:	8.2	2.7	4.4	1.4	6.6	0.6	0.8	8.1	7.7	9.4	3.8	3.8

EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.589
Loss Time (sec): 12 Average Delay (sec/veh): 29.1
Optimal Cycle: 47 Level Of Service: C

Street Name:	West Lane						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:	AM Peak Hour											
Base Vol:	80	450	242	354	656	32	67	90	67	243	62	212
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	80	450	242	354	656	32	67	90	67	243	62	212
Added Vol:	0	139	0	74	250	26	14	0	0	20	2	45
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	80	589	242	428	906	58	81	90	67	263	64	257
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	87	640	263	465	985	63	88	98	73	286	70	279
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	640	263	465	985	63	88	98	73	286	70	279
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	87	640	263	465	985	63	88	98	73	286	70	279
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	5083	1583	3432	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.18	0.17	0.14	0.28	0.04	0.03	0.02	0.05	0.08	0.01	0.18
Crit Moves:		****		****			****					****
Green/Cycle:	0.04	0.31	0.31	0.23	0.49	0.49	0.04	0.12	0.12	0.22	0.30	0.30
Volume/Cap:	0.57	0.59	0.54	0.59	0.57	0.08	0.59	0.16	0.38	0.38	0.05	0.59
Delay/Veh:	51.6	30.2	30.0	35.5	18.3	13.5	53.0	39.4	41.6	33.4	24.9	31.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.6	30.2	30.0	35.5	18.3	13.5	53.0	39.4	41.6	33.4	24.9	31.8
LOS by Move:	D	C	C	D	B	B	D	D	D	C	C	C
HCM2k95thQ:	115	405	320	333	425	38	119	54	121	191	25	354

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	0	1	2	0 2	0	1	2	0 3	0	1	2	0 3	0	1
Lane Group:	L	T		R	L	T		R	L	T		R	L	T		R
#LnsInGrps:	2	2		1	2	2		1	2	3		1	2	3		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.04	0.31	0.31		0.23	0.49	0.49		0.04	0.12	0.12		0.22	0.30	0.30	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.92	0.91		0.95	0.78	0.69		0.99	0.96	0.97		0.93	0.86	0.92	
Q1:	1.2	7.3	5.5		5.6	7.9	0.6		1.2	0.9	1.8		3.2	0.4	6.1	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	1.0	1.4	1.1		1.3	1.3	0.1		1.1	0.2	0.6		0.6	0.0	1.4	
HCM2KQueue:	2.3	8.7	6.7		7.0	9.1	0.7		2.3	1.0	2.4		3.8	0.5	7.5	
70th%Factor:	1.19	1.18	1.18		1.18	1.18	1.20		1.19	1.20	1.19		1.19	1.20	1.18	
HCM2k70thQ:	2.7	10.2	7.9		8.3	10.8	0.9		2.8	1.2	2.9		4.6	0.6	8.8	
85th%Factor:	1.58	1.52	1.54		1.54	1.52	1.59		1.58	1.59	1.58		1.56	1.60	1.53	
HCM2k85thQ:	3.6	13.2	10.3		10.7	13.9	1.2		3.7	1.7	3.8		6.0	0.8	11.4	
90th%Factor:	1.76	1.66	1.69		1.68	1.65	1.79		1.76	1.78	1.75		1.73	1.79	1.68	
HCM2k90thQ:	4.0	14.4	11.3		11.8	15.1	1.3		4.1	1.9	4.2		6.6	0.9	12.5	
95th%Factor:	2.03	1.87	1.91		1.91	1.86	2.08		2.03	2.07	2.03		1.98	2.08	1.90	
HCM2k95thQ:	4.6	16.2	12.8		13.3	17.0	1.5		4.8	2.2	4.8		7.6	1.0	14.1	
98th%Factor:	2.54	2.21	2.30		2.28	2.20	2.65		2.53	2.62	2.53		2.44	2.66	2.26	
HCM2k98thQ:	5.7	19.2	15.3		16.0	20.1	1.9		6.0	2.7	6.0		9.4	1.3	16.9	

EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.612
Loss Time (sec):	12	Average Delay (sec/veh):	35.3
Optimal Cycle:	49	Level Of Service:	D

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:	AM Peak Hour											
Base Vol:	236	112	116	319	215	181	143	585	171	182	500	191
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	236	112	116	319	215	181	143	585	171	182	500	191
Added Vol:	3	6	0	0	13	29	1	49	5	0	28	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	239	118	116	319	228	210	144	634	176	182	528	191
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	260	128	126	347	248	228	157	689	191	198	574	208
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	260	128	126	347	248	228	157	689	191	198	574	208
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	260	128	126	347	248	228	157	689	191	198	574	208
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.15	0.03	0.08	0.20	0.05	0.14	0.09	0.14	0.12	0.11	0.11	0.13
Crit Moves:	****					****		****		****		
Green/Cycle:	0.24	0.14	0.14	0.34	0.24	0.24	0.16	0.22	0.22	0.18	0.24	0.24
Volume/Cap:	0.61	0.18	0.58	0.58	0.21	0.61	0.54	0.61	0.55	0.61	0.47	0.54
Delay/Veh:	36.5	38.3	44.3	28.7	30.8	37.1	40.6	36.1	36.3	41.0	32.7	34.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.5	38.3	44.3	28.7	30.8	37.1	40.6	36.1	36.3	41.0	32.7	34.7
LOS by Move:	D	D	D	C	C	D	D	D	D	D	C	C
HCM2k95thQ:	320	60	176	370	100	288	243	355	272	247	234	239

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L - T - R				L - T - R				L - T - R				L - T - R			
Lanes:	1 0	3 0	1		1 0	3 0	1		1 0	3 0	1		1 0	3 0	1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	3	1		1	3	1		1	3	1		1	3	1	
HCM Ops Adjusted Lane Utilization Module:																
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.24	0.14	0.14	0.34	0.24	0.24	0.16	0.22	0.22	0.18	0.24	0.24
ArrivalType:		4			4			4			4	
ProgFactor:	0.95	0.96	0.98	0.90	0.91	0.95	0.97	0.96	0.95	0.97	0.93	0.94
Q1:	6.1	1.1	3.2	7.2	1.8	5.4	3.9	6.0	4.5	4.9	4.7	4.7
UpstreamVC:	0.49	0.49	0.49	0.35	0.35	0.35	0.00	0.00	0.00	0.91	0.91	0.91
UpstreamAdj:	0.87	0.87	0.87	0.95	0.95	0.95	0.00	0.00	0.00	0.29	0.29	0.29
EarlyArrAdj:	0.38	0.28	0.25	0.51	0.42	0.38	1.00	1.00	1.00	0.11	0.13	0.12
Q2:	0.6	0.1	0.3	0.7	0.1	0.6	1.1	1.5	1.1	0.2	0.1	0.1
HCM2KQueue:	6.7	1.2	3.5	7.8	2.0	6.0	5.0	7.5	5.6	5.1	4.8	4.9
70th%Factor:	1.18	1.20	1.19	1.18	1.20	1.19	1.19	1.18	1.19	1.19	1.19	1.19
HCM2k70thQ:	7.9	1.4	4.2	9.3	2.3	7.1	5.9	8.9	6.6	6.0	5.7	5.8
85th%Factor:	1.54	1.59	1.57	1.53	1.58	1.55	1.55	1.53	1.55	1.55	1.56	1.55
HCM2k85thQ:	10.3	1.9	5.5	12.0	3.1	9.2	7.7	11.5	8.7	7.9	7.4	7.6
90th%Factor:	1.69	1.78	1.74	1.67	1.76	1.70	1.71	1.67	1.70	1.71	1.71	1.71
HCM2k90thQ:	11.3	2.1	6.1	13.1	3.5	10.1	8.5	12.6	9.5	8.6	8.2	8.4
95th%Factor:	1.91	2.06	1.99	1.89	2.04	1.93	1.96	1.90	1.94	1.95	1.96	1.96
HCM2k95thQ:	12.8	2.4	7.1	14.8	4.0	11.5	9.7	14.2	10.9	9.9	9.4	9.6
98th%Factor:	2.30	2.61	2.46	2.25	2.56	2.33	2.38	2.26	2.35	2.38	2.39	2.39
HCM2k98thQ:	15.4	3.0	8.7	17.6	5.0	13.9	11.8	17.0	13.2	12.0	11.4	11.7

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 SR99 W Front & SB Ramps Morada

Average Delay (sec/veh): 7.7 Worst Case Level Of Service: D[31.9]

Street Name:	SR 99 West Frontage Rd						SR 99 SB Ramps (Morada Lane)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0	1 0	0	1 0	0 0	0 0	0	0 0	1 0	0	0 1
Volume Module:	AM Peak Hour											
Base Vol:	0	62	788	31	50	0	0	0	0	282	0	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	62	788	31	50	0	0	0	0	282	0	19
Added Vol:	0	0	49	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	62	837	31	50	0	0	0	0	282	0	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	67	910	34	54	0	0	0	0	307	0	21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	67	910	34	54	0	0	0	0	307	0	21
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	977	xxxx	xxxxx	xxxx	xxxx	xxxxx	644	xxxx	522
Potent Cap.:	xxxx	xxxx	xxxxx	706	xxxx	xxxxx	xxxx	xxxx	xxxxx	437	xxxx	554
Move Cap.:	xxxx	xxxx	xxxxx	706	xxxx	xxxxx	xxxx	xxxx	xxxxx	421	xxxx	554
Volume/Cap:	xxxx	xxxx	xxxx	0.05	xxxx	xxxx	xxxx	xxxx	xxxx	0.73	xxxx	0.04
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	3.8	xxxx	xxxxx	xxxx	xxxx	xxxxx	143	xxxx	2.9
Control Del:	xxxxx	xxxx	xxxxx	10.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	33.3	xxxx	11.7
LOS by Move:	*	*	*	B	*	*	*	*	*	D	*	B
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	10.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	B	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			31.9		
ApproachLOS:	*			*			*			D		

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

```
Intersection #20 SR99 W Front & SB Ramps Morada
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:       #218             #183
Dist(miles):      0.250            0.250
Speed (mph):       1.00             1.00
SignalIndex:      #22              #12
Cycle Time:         100 secs         100 secs
InitVolume:   545    15        149    20
Saturation:  1769  1334       1769   871
ArrivalType:    4     4          4     4
G/C:         0.37  0.19       0.15  0.04
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:          0.490 0.254      0.197 0.054
gq1:        15.70  0.84       6.76  2.17
gq2:        10.94  0.01       0.86  0.07
gq:         26.65  0.85       7.62  2.24
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:            0.550            0.550
beta:             0.645            0.645
ta (secs):       900.000          900.000
F:                0.003            0.003
f:          1.000 1.000      0.521 1.000
vcmax:        141     4         22     6
vcg:          160     4         24     6
vcmin:       1000  1000       1000  1000
tp:           0.0   0.0        0.0   0.0
p:                0.000            0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx  977 xxxxx xxxxx  654  1099    54  644   644   522
AdjCnflVol:    0 xxxxx xxxxx  977 xxxxx xxxxx  654  1099    54  644   644   522
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx  977 xxxxx xxxxx  654  1099    54  644   644   522
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1623 xxxxx xxxxx  706 xxxxx xxxxx  380   213  1013  437   391   554
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1623 xxxxx xxxxx  706 xxxxx xxxxx  380   213  1013  437   391   554
```


EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

```
*******************************************************************************
Intersection #21 SR99 E Front & NB Ramps Morada
*******************************************************************************
Average Delay (sec/veh):     15.9       Worst Case Level Of Service: F[ 65.7]
*******************************************************************************
Street Name:      SR 99 East Frontage Rd         SR 99 NB Ramps (Morada Lane)
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------||---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  0  0    0  0  0  1  0    1  0  0  0  1    0  0  0  0  0
------------||---------------||---------------||---------------||---------------|
Volume Module:AM Peak Hour
Base Vol:     230  451     0     0  511     2    95    0   214     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  230  451     0     0  511     2    95    0   214     0    0     0
Added Vol:      0    0     0     0    0     0     0    0    28     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  230  451     0     0  511     2    95    0   242     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:   250  490     0     0  555     2   103    0   263     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:  250  490     0     0  555     2   103    0   263     0    0     0
------------||---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4 xxxx   6.2 xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3 xxxxx xxxx xxxxx
------------||---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  558 xxxx xxxxx  xxxx xxxx xxxxx  1547 xxxx   557  xxxx xxxx xxxxx
Potent Cap.: 1013 xxxx xxxxx  xxxx xxxx xxxxx   126 xxxx   530  xxxx xxxx xxxxx
Move Cap.:   1013 xxxx xxxxx  xxxx xxxx xxxxx    98 xxxx   530  xxxx xxxx xxxxx
Volume/Cap:  0.25 xxxx  xxxx  xxxx xxxx  xxxx  1.05 xxxx  0.50  xxxx xxxx  xxxx
------------||---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   24.3 xxxx xxxxx  xxxx xxxx xxxxx   164 xxxx  68.3  xxxx xxxx xxxxx
Control Del:  9.7 xxxx xxxxx xxxxx xxxx xxxxx 186.7 xxxx  18.3 xxxxx xxxx xxxxx
LOS by Move:    A    *     *     *    *     *     F    *     C     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:  1.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:  9.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     A    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx              65.7           xxxxxx
ApproachLOS:         *                *                 F                *
*******************************************************************************
Note: Queue reported is the distance per lane in feet.
*******************************************************************************
```

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

```
Intersection #21 SR99 E Front & NB Ramps Morada
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------|----------------|----------------|----------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:       #222             #188
Dist(miles):      0.250            0.250
Speed (mph):       1.00             1.00
SignalIndex:      #23              #13
Cycle Time:         100 secs         100 secs
InitVolume:   535    84         50    19
Saturation:  1410  1040       1769  1597
ArrivalType:    4     4          4     4
G/C:         0.35  0.23       0.05  0.07
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:          0.464 0.311      0.063 0.097
gq1:        20.32  5.56       2.65  1.07
gq2:        20.80  0.67       0.10  0.02
gq:         34.84  6.23       2.75  1.09
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:            0.550            0.550
beta:             0.645            0.645
ta (secs):       900.000          900.000
F:                0.003            0.003
f:          1.000 1.000      1.000 1.000
vcmax:        146    20         15     5
vcg:          146    25         15     6
vcmin:       1000  1000       1000  1000
tp:           0.0   0.0        0.0   0.0
p:                0.000            0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol: 558 xxxxx xxxxx    0 xxxxx xxxxx 1547  1547   557 1678  1548   490
AdjCnflVol:  558 xxxxx xxxxx    0 xxxxx xxxxx 1547  1547   557 1678  1548   490
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol: 558 xxxxx xxxxx    0 xxxxx xxxxx 1547  1547   557 1678  1548   490
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1013 xxxxx xxxxx 1623 xxxxx xxxxx  126   114   530   75   114   578
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1013 xxxxx xxxxx 1623 xxxxx xxxxx  126   114   530   75   114   578
```


EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

```
*******************************************************************************
Intersection #24 West Ln & West Ln Frontage Rd
*******************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.690
Loss Time (sec):       9                Average Delay (sec/veh):        20.5
Optimal Cycle:        50                Level Of Service:                  C
*******************************************************************************
Street Name:            West Lane                  West Lane Frontage Road
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected         Permitted        Permitted
Rights:           Include          Include           Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        1  0  1  1  0    1  0  1  1  0    0  1  0  0  1    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:AM Peak Hour
Base Vol:     111  611    52    47  900    69   117   14   116   177   17     4
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  111  611    52    47  900    69   117   14   116   177   17     4
Added Vol:      0  139     0     0  270     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  111  750    52    47 1170    69   117   14   116   177   17     4
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:   121  815    57    51 1272    75   127   15   126   192   18     4
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  121  815    57    51 1272    75   127   15   126   192   18     4
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  121  815    57    51 1272    75   127   15   126   192   18     4
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.93 0.92  0.92  0.93 0.92  0.92  0.71 0.71  0.83  0.58 0.95  0.95
Lanes:       1.00 1.87  0.13  1.00 1.89  0.11  0.89 0.11  1.00  1.00 0.81  0.19
Final Sat.:  1769 3275   227  1769 3314   195  1199  143  1583  1095 1465   345
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.07 0.25  0.25  0.03 0.38  0.38  0.11 0.11  0.08  0.18 0.01  0.01
Crit Moves:  ****                ****                           ****
Green/Cycle: 0.10 0.59  0.59  0.07 0.56  0.56  0.25 0.25  0.25  0.25 0.25  0.25
Volume/Cap:  0.69 0.42  0.42  0.42 0.69  0.69  0.42 0.42  0.31  0.69 0.05  0.05
Delay/Veh:   54.7 11.5  11.5  47.1 17.0  17.0  31.9 31.9  30.6  40.8 28.2  28.2
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  54.7 11.5  11.5  47.1 17.0  17.0  31.9 31.9  30.6  40.8 28.2  28.2
LOS by Move:    D    B     B     D    B     B     C    C     C     D    C     C
HCM2k95thQ:   183  228   228   103  563   563   186  186   152   312   25    25
*******************************************************************************
Note: Queue reported is the distance per lane in feet.
*******************************************************************************
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EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	1	1	0	1	0	1	1	0	0	1	0	1	0	0
Lane Group:	L	RT		RT	L	RT		RT	LT	LT		R	L	RT		RT
#LnsInGrps:	1	2		2	1	2		2	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		5	5	xxxx		2	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.99	0.99		xxxx	0.99	0.99		xxxx	xxxx	0.85		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.72	0.72	xxxxx		0.59	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.97	0.97		0.93	0.97	0.97		0.71	0.71	0.83		0.58	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	0.95		1.00	0.95	0.95		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.92	0.92		0.93	0.92	0.92		0.71	0.71	0.83		0.58	0.95	0.95	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North	South	East	West
Cycle Length, C:	xxxxxx	xxxxxx	100	100
Actual Green Time Per Lane Group, G:	xxxxxx	xxxxxx	24.48	24.48
Effective Green Time Per Lane Group, g:	xxxxxx	xxxxxx	25.48	25.48
Opposing Effective Green Time, go:	xxxxxx	xxxxxx	25.48	25.48
Number Of Opposing Lanes, No:	xxxxxx	xxxxxx	1	1
Number Of Lanes In Lane Group, N:	xxxxxx	xxxxxx	1	1
Adjusted Left-Turn Flow Rate, Vlt:	xxxxxx	xxxxxx	127	192
Proportion of Left Turns in Lane Group, Plt:	xxxxxx	xxxxxx	0.89	1.00
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	xxxxxx	xxxxxx	3.53	5.34
Adjusted Opposing Flow Rate, Vo:	xxxxxx	xxxxxx	23	142
Opposing Flow Per Lane Per Cycle, Volc:	xxxxxx	xxxxxx	0.64	3.94
Opposing Platoon Ratio, Rpo:	xxxxxx	xxxxxx	1.33	1.33
Lost Time Per Phase, tl:	xxxxxx	xxxxxx	3.00	3.00
Eff grn until arrival of left-turn car, gf:	xxxxxx	xxxxxx	0.00	0.00
Opposing Queue Ratio, qro:	xxxxxx	xxxxxx	0.66	0.66
Eff grn blocked by opposing queue, gq:	xxxxxx	xxxxxx	0.00	2.82
Eff grn while left turns filter thru, gu:	xxxxxx	xxxxxx	25.48	22.66
Max opposing cars arriving during gq-gf, n:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	0.86	0.79
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	0.89	1.00
Through-car Equivalents, el1:	xxxxxx	xxxxxx	1.43	1.51
Single Lane Through-car Equivalents, el2:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	xxxxxx	xxxxxx	0.15	0.16
Single Lane Left Turn Adjustment Factor, fm:	xxxxxx	xxxxxx	0.72	0.59
Left Turn Adjustment Factor, flt:	xxxxxx	xxxxxx	0.72	0.59

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.10	0.59	0.59	0.07	0.56	0.56	0.25	0.25	0.25	0.25	0.25	0.25
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.59	0.59	0.99	0.73	0.73	0.92	0.92	0.91	0.95	0.89	0.89
Q1:	3.2	4.1	4.1	1.3	10.4	10.4	3.0	3.0	2.6	4.6	0.4	0.4
UpstreamVC:	0.46	0.46	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.89	0.89	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.23	0.69	0.69	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.5	0.5	0.5	0.7	2.1	2.1	0.7	0.7	0.4	1.9	0.1	0.1
HCM2KQueue:	3.7	4.6	4.6	2.0	12.5	12.5	3.7	3.7	3.0	6.5	0.5	0.5
70th%Factor:	1.19	1.19	1.19	1.20	1.17	1.17	1.19	1.19	1.19	1.18	1.20	1.20
HCM2k70thQ:	4.4	5.5	5.5	2.4	14.7	14.7	4.5	4.5	3.6	7.7	0.6	0.6
85th%Factor:	1.57	1.56	1.56	1.58	1.50	1.50	1.56	1.56	1.57	1.54	1.60	1.60
HCM2k85thQ:	5.8	7.2	7.2	3.2	18.8	18.8	5.8	5.8	4.8	10.0	0.8	0.8
90th%Factor:	1.73	1.72	1.72	1.76	1.61	1.61	1.73	1.73	1.74	1.69	1.79	1.79
HCM2k90thQ:	6.4	8.0	8.0	3.6	20.2	20.2	6.5	6.5	5.3	11.0	0.9	0.9
95th%Factor:	1.99	1.96	1.96	2.04	1.80	1.80	1.99	1.99	2.01	1.92	2.08	2.08
HCM2k95thQ:	7.3	9.1	9.1	4.1	22.5	22.5	7.4	7.4	6.1	12.5	1.0	1.0
98th%Factor:	2.45	2.40	2.40	2.56	2.08	2.08	2.45	2.45	2.49	2.31	2.66	2.66
HCM2k98thQ:	9.0	11.2	11.2	5.2	26.1	26.1	9.2	9.2	7.6	15.0	1.3	1.3

EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 West Lane & Knickerbocker Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.539
Loss Time (sec):	12	Average Delay (sec/veh):	23.3
Optimal Cycle:	43	Level Of Service:	C

Street Name:	West Lane						Knickerbocker Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:	AM Peak Hour											
Base Vol:	24	681	78	124	995	48	70	56	39	192	88	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	24	681	78	124	995	48	70	56	39	192	88	30
Added Vol:	0	139	0	0	270	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	24	820	78	124	1265	48	70	56	39	192	88	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	26	891	85	135	1375	52	76	61	42	209	96	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	891	85	135	1375	52	76	61	42	209	96	33
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	26	891	85	135	1375	52	76	61	42	209	96	33
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.89	0.93	0.92	0.92	0.93	0.94	0.94
Lanes:	1.00	3.00	1.00	1.00	2.89	0.11	1.00	0.59	0.41	1.00	0.75	0.25
Final Sat.:	1769	5083	1583	1769	4868	185	1769	1030	717	1769	1336	455
Capacity Analysis Module:												
Vol/Sat:	0.01	0.18	0.05	0.08	0.28	0.28	0.04	0.06	0.06	0.12	0.07	0.07
Crit Moves:	****				****			****		****		
Green/Cycle:	0.03	0.38	0.38	0.17	0.52	0.52	0.12	0.11	0.11	0.22	0.21	0.21
Volume/Cap:	0.54	0.46	0.14	0.46	0.54	0.54	0.35	0.54	0.54	0.54	0.35	0.35
Delay/Veh:	59.6	23.1	20.1	38.7	16.0	16.0	41.1	45.2	45.2	36.1	34.6	34.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	59.6	23.1	20.1	38.7	16.0	16.0	41.1	45.2	45.2	36.1	34.6	34.6
LOS by Move:	E	C	C	D	B	B	D	D	D	D	C	C
HCM2k95thQ:	43	300	68	171	359	359	121	185	185	289	169	169

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 3	0 1		1	0 2	1 0		1	0 0	1 0		1	0 0	1 0	
Lane Group:	L	T	R		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	3	1		1	3	3		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.99	0.99		xxxx	0.94	0.94		xxxx	0.96	0.96	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.97	0.97		0.93	0.92	0.92		0.93	0.94	0.94	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.89		0.93	0.92	0.92		0.93	0.94	0.94	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.03	0.38	0.38		0.17	0.52	0.52		0.12	0.11	0.11		0.22	0.21	0.21	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.85	0.81		0.96	0.73	0.73		0.97	0.98	0.98		0.95	0.94	0.94	
Q1:		0.7	5.8	1.2		3.2	7.0	7.0		1.9	2.7	2.7		4.9	2.9	2.9
UpstreamVC:	0.35	0.35	0.35		0.69	0.69	0.69		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.95	0.95	0.95		0.66	0.66	0.66		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	0.11	0.57	0.52		0.23	0.48	0.48		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:		0.1	0.5	0.1		0.2	0.6	0.6		0.5	1.1	1.1		1.1	0.5	0.5
HCM2KQueue:		0.8	6.2	1.3		3.4	7.6	7.6		2.4	3.7	3.7		6.0	3.4	3.4
70th%Factor:	1.20	1.19	1.20		1.19	1.18	1.18		1.19	1.19	1.19		1.19	1.19	1.19	
HCM2k70thQ:		1.0	7.4	1.6		4.1	9.0	9.0		2.9	4.4	4.4		7.1	4.0	4.0
85th%Factor:	1.59	1.54	1.59		1.57	1.53	1.53		1.58	1.56	1.56		1.55	1.57	1.57	
HCM2k85thQ:		1.3	9.6	2.1		5.4	11.6	11.6		3.8	5.8	5.8		9.3	5.3	5.3
90th%Factor:	1.78	1.69	1.77		1.74	1.67	1.67		1.75	1.73	1.73		1.70	1.74	1.74	
HCM2k90thQ:		1.5	10.6	2.3		6.0	12.7	12.7		4.2	6.5	6.5		10.2	5.9	5.9
95th%Factor:	2.07	1.92	2.06		2.00	1.89	1.89		2.03	1.99	1.99		1.93	2.00	2.00	
HCM2k95thQ:		1.7	12.0	2.7		6.9	14.3	14.3		4.8	7.4	7.4		11.6	6.8	6.8
98th%Factor:	2.64	2.32	2.60		2.47	2.26	2.26		2.53	2.45	2.45		2.33	2.47	2.47	
HCM2k98thQ:		2.2	14.5	3.4		8.5	17.1	17.1		6.1	9.1	9.1		14.0	8.4	8.4

EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.603
Loss Time (sec): 12 Average Delay (sec/veh): 32.6
Optimal Cycle: 49 Level Of Service: C

Street Name:	West Lane						Hammer Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	4	0	1	2	0	4	0	1
Volume Module:	AM Peak Hour											
Base Vol:	217	458	119	168	917	196	311	843	219	383	654	59
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	217	458	119	168	917	196	311	843	219	383	654	59
Added Vol:	0	139	0	0	270	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	217	597	119	168	1187	196	311	843	219	383	654	59
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	236	649	129	183	1290	213	338	916	238	416	711	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	236	649	129	183	1290	213	338	916	238	416	711	64
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	236	649	129	183	1290	213	338	916	238	416	711	64
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.07	0.10	0.08	0.05	0.19	0.13	0.10	0.14	0.15	0.12	0.10	0.04
Crit Moves:	****				****				****	****		
Green/Cycle:	0.11	0.28	0.28	0.15	0.32	0.32	0.22	0.25	0.25	0.20	0.23	0.23
Volume/Cap:	0.60	0.35	0.30	0.35	0.60	0.43	0.45	0.54	0.60	0.60	0.45	0.17
Delay/Veh:	44.8	29.1	28.9	38.2	29.4	27.7	34.3	32.9	35.8	37.8	33.1	30.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.8	29.1	28.9	38.2	29.4	27.7	34.3	32.9	35.8	37.8	33.1	30.9
LOS by Move:	D	C	C	D	C	C	C	C	D	D	C	C
HCM2k95thQ:	221	203	149	121	390	220	233	326	331	279	231	71

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	2	0	4	0	1		2	0	4	0	1		2	0	4	0	1		2	0	4	0	1	
Lane Group:	L		T		R		L		T		R		L		T		R		L		T		R	
#LnsInGrps:	2		4		1		2		4		1		2		4		1		2		4		1	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:	8						8						8						8					
% Hev Veh:	2						2						2						2					
Grade:	0%						0%						0%						0%					
Parking/Hr:	No						No						No						No					
Bus Stp/Hr:	0						0						0						0					
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:	0						0						0						0					
ExclusiveRT:	Include						Include						Include						Include					
% RT Prtct:	0						0						0						0					
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx	xxxx				1	xxxx	xxxx				1	xxxx	xxxx				1	xxxx	xxxx			
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Hev Veh Adj:	0.98	0.98	0.98				0.98	0.98	0.98				0.98	0.98	0.98				0.98	0.98	0.98			
Grade Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Parking Adj:	xxxx	xxxx	1.00				xxxx	xxxx	1.00				xxxx	xxxx	1.00				xxxx	xxxx	1.00			
Bus Stp Adj:	xxxx	xxxx	1.00				xxxx	xxxx	1.00				xxxx	xxxx	1.00				xxxx	xxxx	1.00			
Area Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
RT Adj:	xxxx	xxxx	0.85				xxxx	xxxx	0.85				xxxx	xxxx	0.85				xxxx	xxxx	0.85			
LT Adj:	0.95	xxxx	xxxxx				0.95	xxxx	xxxxx				0.95	xxxx	xxxxx				0.95	xxxx	xxxxx			
PedBike Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
HCM Sat Adj:	0.93	0.98	0.83				0.93	0.98	0.83				0.93	0.98	0.83				0.93	0.98	0.83			
Usr Sat Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
MLF Sat Adj:	0.97	0.91	1.00				0.97	0.91	1.00				0.97	0.91	1.00				0.97	0.91	1.00			
Fnl Sat Adj:	0.90	0.89	0.83				0.90	0.89	0.83				0.90	0.89	0.83				0.90	0.89	0.83			
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			

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Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.11	0.28	0.28	0.15	0.32	0.32	0.22	0.25	0.25	0.20	0.23	0.23
ArrivalType:	4				4				4				4			
ProgFactor:	0.98	0.90	0.90	0.96	0.92	0.89	0.94	0.94	0.95	0.96	0.94	0.91
Q1:	3.2	3.6	2.5	2.2	7.6	4.2	4.0	5.7	5.5	5.2	4.4	1.3
UpstreamVC:	0.00	0.00	0.00	0.54	0.54	0.54	0.00	0.00	0.00	0.29	0.29	0.29
UpstreamAdj:	0.00	0.00	0.00	0.83	0.83	0.83	0.00	0.00	0.00	0.97	0.97	0.97
EarlyArrAdj:	1.00	1.00	1.00	0.28	0.44	0.40	1.00	1.00	1.00	0.38	0.43	0.39
Q2:	1.3	0.5	0.4	0.1	0.7	0.3	0.8	1.1	1.4	0.6	0.3	0.1
HCM2KQueue:	4.5	4.1	3.0	2.4	8.3	4.5	4.8	6.8	6.9	5.8	4.7	1.4
70th%Factor:	1.19	1.19	1.19	1.19	1.18	1.19	1.19	1.18	1.18	1.19	1.19	1.20
HCM2k70thQ:	5.3	4.9	3.5	2.8	9.8	5.3	5.6	8.1	8.2	6.8	5.6	1.7
85th%Factor:	1.56	1.56	1.57	1.58	1.53	1.56	1.56	1.54	1.54	1.55	1.56	1.59
HCM2k85thQ:	7.0	6.4	4.7	3.8	12.7	7.0	7.4	10.5	10.7	8.9	7.3	2.2
90th%Factor:	1.72	1.73	1.74	1.76	1.66	1.72	1.72	1.68	1.68	1.70	1.72	1.77
HCM2k90thQ:	7.7	7.1	5.2	4.2	13.8	7.7	8.1	11.5	11.7	9.8	8.1	2.5
95th%Factor:	1.97	1.98	2.01	2.03	1.88	1.97	1.96	1.91	1.91	1.94	1.96	2.06
HCM2k95thQ:	8.8	8.1	6.0	4.8	15.6	8.8	9.3	13.0	13.2	11.2	9.2	2.8
98th%Factor:	2.41	2.43	2.50	2.53	2.23	2.41	2.39	2.29	2.29	2.34	2.40	2.60
HCM2k98thQ:	10.8	10.0	7.4	6.0	18.5	10.8	11.4	15.7	15.9	13.5	11.3	3.6

EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.881
Loss Time (sec):	12	Average Delay (sec/veh):	38.2
Optimal Cycle:	101	Level Of Service:	D

Street Name:	Hammer Lane								Holman Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	2	0	2	1 0	2	0	3	0 1	2	0	3	1 0	2	0	3	1 0
Volume Module:	AM Peak Hour															
Base Vol:	466	393	241		97	657	92		129	777	412		645	696	29	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	466	393	241		97	657	92		129	777	412		645	696	29	
Added Vol:	0	10	0		0	19	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	466	403	241		97	676	92		129	777	412		645	696	29	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	507	438	262		105	735	100		140	845	448		701	757	32	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	507	438	262		105	735	100		140	845	448		701	757	32	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	507	438	262		105	735	100		140	845	448		701	757	32	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.90	0.84	0.84		0.90	0.89	0.83		0.90	0.85	0.85		0.90	0.89	0.89	
Lanes:	2.00	2.00	1.00		2.00	3.00	1.00		2.00	3.00	1.00		2.00	3.84	0.16	
Final Sat.:	3432	3199	1600		3432	5083	1583		3432	4819	1606		3432	6468	269	
Capacity Analysis Module:																
Vol/Sat:	0.15	0.14	0.16		0.03	0.14	0.06		0.04	0.18	0.28		0.20	0.12	0.12	
Crit Moves:	****					****					****		****			
Green/Cycle:	0.17	0.28	0.28		0.05	0.16	0.16		0.14	0.32	0.32		0.23	0.41	0.41	
Volume/Cap:	0.88	0.49	0.59		0.59	0.88	0.39		0.29	0.55	0.88		0.88	0.29	0.29	
Delay/Veh:	55.4	30.4	31.8		51.3	51.6	38.2		38.7	28.6	38.9		48.3	20.0	20.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	55.4	30.4	31.8		51.3	51.6	38.2		38.7	28.6	38.9		48.3	20.0	20.0	
LOS by Move:	E	C	C		D	D	D		D	C	D		D	C	C	
HCM2k95thQ:	499	293	367		87	424	130		93	334	661		616	182	182	

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	1	0	2	0 3	0	1	2	0 3	1	0	2	0 3	1	0
Lane Group:	L	RT		RT	L	T		R	L	RT		RT	L	RT		RT
#LnsInGrps:	2	3		3	2	3		1	2	4		4	2	4		4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.94	0.94		xxxx	xxxx	0.85		xxxx	0.95	0.95		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.93	0.93		0.93	0.98	0.83		0.93	0.93	0.93		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	0.91		0.97	0.91	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.84	0.84		0.90	0.89	0.83		0.90	0.85	0.85		0.90	0.89	0.89	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.17	0.28	0.28		0.05	0.16	0.16		0.14	0.32	0.32		0.23	0.41	0.41	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.92	0.93		0.99	0.99	0.96		0.96	0.91	0.97		0.98	0.81	0.81	
Q1:		7.0	5.1	6.4		1.5	7.2	2.4		1.7	6.5	12.6		9.5	3.3	3.3
UpstreamVC:	0.00	0.00	0.00		0.21	0.21	0.21		0.54	0.54	0.54		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.99	0.99	0.99		0.82	0.82	0.82		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		0.17	0.36	0.32		0.26	0.43	0.43		1.00	1.00	1.00	
Q2:		3.9	0.9	1.3		0.2	1.9	0.2		0.1	0.5	2.4		4.3	0.4	0.4
HCM2KQueue:		10.9	6.1	7.8		1.7	9.1	2.6		1.8	7.0	15.0		13.9	3.7	3.7
70th%Factor:	1.18	1.19	1.18		1.20	1.18	1.19		1.20	1.18	1.17		1.17	1.19	1.19	
HCM2k70thQ:		12.9	7.2	9.2		2.0	10.7	3.1		2.2	8.3	17.6		16.2	4.4	4.4
85th%Factor:	1.51	1.55	1.53		1.58	1.52	1.58		1.58	1.54	1.48		1.49	1.57	1.57	
HCM2k85thQ:		16.5	9.4	11.9		2.7	13.8	4.0		2.9	10.8	22.3		20.6	5.7	5.7
90th%Factor:	1.63	1.70	1.67		1.77	1.65	1.75		1.77	1.68	1.59		1.60	1.73	1.73	
HCM2k90thQ:		17.8	10.3	13.0		3.0	15.1	4.5		3.2	11.8	23.9		22.2	6.4	6.4
95th%Factor:	1.83	1.93	1.89		2.05	1.86	2.02		2.04	1.91	1.76		1.78	1.99	1.99	
HCM2k95thQ:		20.0	11.7	14.7		3.5	16.9	5.2		3.7	13.4	26.4		24.6	7.3	7.3
98th%Factor:	2.13	2.33	2.25		2.58	2.20	2.52		2.57	2.28	2.01		2.04	2.45	2.45	
HCM2k98thQ:		23.3	14.1	17.5		4.4	20.0	6.5		4.7	16.0	30.3		28.3	9.0	9.0

EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #51 Eight Mile & Commercial DW #1

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[12.1]

Street Name:	Commercial Site Driveway #1						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 1			0 0 0 0 0			0 0 2 0 1			0 0 2 0 0		
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	0	0	0	0	831	0	0	698	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	831	0	0	698	0
Added Vol:	0	0	1	0	0	0	0	106	6	0	196	0
Pass-By Vol:	0	0	2	0	0	0	0	-3	3	0	0	0
Initial Fut:	0	0	3	0	0	0	0	934	9	0	894	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	3	0	0	0	0	1015	10	0	972	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	3	0	0	0	0	1015	10	0	972	0
Critical Gap Module:												
Critical Gp:xxxxx xxxx			6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:xxxxx xxxx			3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	508	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	510	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	510	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.5	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:xxxxx xxxx			12.1	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:xxxxx xxxx			xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:xxxxx xxxx			xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	12.1			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #51 Eight Mile & Commercial DW #1

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:							#17			#22		
Dist(miles):							0.250			0.250		
Speed (mph):							1.00			1.00		
SignalIndex:							#8			#53		
Cycle Time:							100 secs			100 secs		
InitVolume:							43	799		74	817	
Saturation:							1769	3538		1769	3538	
ArrivalType:							4	4		4	4	
G/C:							0.10	0.37		0.19	0.75	
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:							0.127	0.497		0.250	1.003	
gq1:							2.12	11.35		3.14	-0.07	
gq2:							0.07	4.89		0.19	-0.03	
gq:							2.19	16.25		3.32	-0.09	
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:							0.400			0.400		
beta:							0.714			0.714		
ta (secs):							900.000			900.000		
F:							0.004			0.004		
f:							1.000	1.000		1.000	1.000	
vcmax:							15	216		23	-1	
vcg:							16	283		27	275	
vcmin:							2000	2000		2000	2000	
tp:							0.0	0.0		0.0	0.0	
p:							0.000			0.000		
*** Computation 3: Platoon Event Periods												
pdom/psubo:							0.000/0.000/Unconstrained					
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:1501	1987	508	1479	1997	486	0	xxxxx	xxxxx	0	xxxxx	xxxxx	
AdjCnflVol: 1501	1987	508	1479	1997	486	0	xxxxx	xxxxx	0	xxxxx	xxxxx	
UpstreamAdj:1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	
ConflictVol:1501	1987	508	1479	1997	486	0	xxxxx	xxxxx	0	xxxxx	xxxxx	
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	113	60	510	87	59	527	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx
UpstreamAdj:1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	
Potent Cap.:	113	60	510	87	59	527	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #52 Eight Mile & Commercial DW #2

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[10.6]

```
Street Name:   Commercial Site Driveway #2             Eight Mile Road
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  0    0  0  2  1  0    0  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:AM Peak Hour
Base Vol:       0    0     0     0    0     0     0  831     0     0  698     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0     0    0     0     0  831     0     0  698     0
Added Vol:      0    0     5     0    0     0     0  101     6     0  196     0
Pass-By Vol:    0    0     2     0    0     0     0   -3     3     0    0     0
Initial Fut:    0    0     7     0    0     0     0  929     9     0  894     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0     8     0    0     0     0 1010    10     0  972     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     8     0    0     0     0 1010    10     0  972     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   341  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx   654  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx   654  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.01  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   0.9  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx  10.6 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     B     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      10.6           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
```

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #52 Eight Mile & Commercial DW #2

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                                          #17              #22
Dist(miles):                                         0.250            0.250
Speed (mph):                                          1.00             1.00
SignalIndex:                                         #8               #53
Cycle Time:                                            100 secs         100 secs
InitVolume:                                       43   799         74   817
Saturation:                                     1769  3538       1769  3538
ArrivalType:                                       4     4          4     4
G/C:                                            0.10  0.37       0.19  0.75
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                                             0.127 0.497      0.250 1.003
gq1:                                            2.12 11.35       3.14 -0.07
gq2:                                            0.07  4.89       0.19 -0.03
gq:                                             2.19 16.25       3.32 -0.09
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                                               0.400            0.400
beta:                                                0.714            0.714
ta (secs):                                          900.000          900.000
F:                                                   0.004            0.004
f:                                             1.000 1.000      1.000 1.000
vcmax:                                            15   216         23    -1
vcg:                                              16   283         27   275
vcmin:                                          2000  2000       2000  2000
tp:                                              0.0   0.0        0.0   0.0
p:                                                   0.000            0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:                                          0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:1501  1986   341 1308  1991   486    0 xxxxx xxxxx    0 xxxxx xxxxx
AdjCnflVol: 1501  1986   341 1308  1991   486    0 xxxxx xxxxx    0 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
ConflictVol:1501  1986   341 1308  1991   486    0 xxxxx xxxxx    0 xxxxx xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap:  113    60   654  117    60   527 1622 xxxxx xxxxx 1622 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
Potent Cap.: 113    60   654  117    60   527 1622 xxxxx xxxxx 1622 xxxxx xxxxx
```

EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #53 Eight Mile Road & Road C

Cycle (sec):	100	Critical Vol./Cap.(X):	0.461
Loss Time (sec):	6	Average Delay (sec/veh):	12.4
Optimal Cycle:	25	Level Of Service:	B

Street Name:	Road C					Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0
	0	0	2	0	1	1	0	2	0	0		
Volume Module:	AM Peak Hour											
Base Vol:	0	0	0	0	0	0	0	831	0	0	698	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	831	0	0	698	0
Added Vol:	74	0	126	0	0	0	0	68	38	112	122	0
Pass-By:	0	0	0	0	0	0	0	0	0	3	-3	0
Initial Fut:	74	0	126	0	0	0	0	899	38	115	817	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	80	0	137	0	0	0	0	977	41	125	888	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	80	0	137	0	0	0	0	977	41	125	888	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	80	0	137	0	0	0	0	977	41	125	888	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.93	0.83	0.93	0.93	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	1769	0	1583	0	0	0	0	3538	1583	1769	3538	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.09	0.00	0.00	0.00	0.00	0.28	0.03	0.07	0.25	0.00
Crit Moves:			****					****		****		
Green/Cycle:	0.19	0.00	0.19	0.00	0.00	0.00	0.00	0.60	0.60	0.15	0.75	0.00
Volume/Cap:	0.24	0.00	0.46	0.00	0.00	0.00	0.00	0.46	0.04	0.46	0.33	0.00
Delay/Veh:	34.9	0.0	37.3	0.0	0.0	0.0	0.0	11.3	8.3	39.8	4.2	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.9	0.0	37.3	0.0	0.0	0.0	0.0	11.3	8.3	39.8	4.2	0.0
LOS by Move:	C	A	D	A	A	A	A	B	A	D	A	A
HCM2k95thQ:	107	0	200	0	0	0	0	245	14	192	26	0

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #53 Eight Mile Road & Road C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																				
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0	2	0	1	1	0	2	0	0
Lane Group:	L		xxxx		R	xxxx		xxxx		xxxx	xxxx		T		R	L		T		xxxx
#LnsInGrps:	1		0		1	0		0		0	0		2		1	1		2		0
HCM Ops Input Saturation Adj Module:																				
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12
CrsswalkWid:			8					8					8					8		
% Hev Veh:			2					2					2					2		
Grade:			0%					0%					0%					0%		
Parking/Hr:			No					No					No					No		
Bus Stp/Hr:			0					0					0					0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > >																			
Cnft Ped/Hr:			0					0					0					0		
ExclusiveRT:			Include					Include					Include					Include		
% RT Prtct:			0					0					0					0		
HCM Ops f(lt) Adj Case Module:																				
f(lt) Case:	1		xxxx		xxxx	xxxx		xxxx		xxxx	xxxx		xxxx		xxxx	1		xxxx		xxxx
HCM Ops Saturation Adj Module:																				
Ln Wid Adj:	1.00		xxxx		1.00	xxxx		xxxx		xxxxx	xxxx		1.00		1.00	1.00		1.00		xxxxx
Hev Veh Adj:	0.98		xxxx		0.98	xxxx		xxxx		xxxxx	xxxx		0.98		0.98	0.98		0.98		xxxxx
Grade Adj:	1.00		xxxx		1.00	xxxx		xxxx		xxxxx	xxxx		1.00		1.00	1.00		1.00		xxxxx
Parking Adj:	xxxx		xxxx		1.00	xxxx		xxxx		xxxxx	xxxx		xxxx		1.00	xxxx		1.00		xxxxx
Bus Stp Adj:	xxxx		xxxx		1.00	xxxx		xxxx		xxxxx	xxxx		xxxx		1.00	xxxx		1.00		xxxxx
Area Adj:	1.00		xxxx		1.00	xxxx		xxxx		xxxxx	xxxx		1.00		1.00	1.00		1.00		xxxxx
RT Adj:	xxxx		xxxx		0.85	xxxx		xxxx		xxxxx	xxxx		xxxx		0.85	xxxx		xxxx		xxxxx
LT Adj:	0.95		xxxx		xxxxx	xxxx		xxxx		xxxxx	xxxx		xxxx		xxxxx	0.95		xxxx		xxxxx
PedBike Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
HCM Sat Adj:	0.93		1.00		0.83	1.00		1.00		1.00	1.00		0.98		0.83	0.93		0.98		1.00
Usr Sat Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
MLF Sat Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		0.95	1.00		1.00		0.95	1.00
Fnl Sat Adj:	0.93		1.00		0.83	1.00		1.00		1.00	1.00		0.93		0.83	0.93		0.93		1.00
Delay Adjustment Factor Module:																				
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > >																			
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >																			
DelAdjFctr:	1.00		0.00		1.00	0.00		0.00		0.00	0.00		1.00		1.00	1.00		1.00		0.00

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #53 Eight Mile Road & Road C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.19	0.00	0.19	0.00	0.00	0.00	0.00	0.60	0.60	0.15	0.75	0.00
ArrivalType:		4			4			4			4	
ProgFactor:	0.94	1.00	0.95	1.00	1.00	1.00	1.00	0.58	0.51	0.96	0.00	1.00
Q1:	1.8	0.0	3.2	0.0	0.0	0.0	0.0	4.6	0.2	3.1	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.66	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.70	0.00	0.00	0.00
EarlyArrAdj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.55	0.50	1.00	1.00	0.00
Q2:	0.3	0.0	0.8	0.0	0.0	0.0	0.0	0.5	0.0	0.8	0.5	0.0
HCM2KQueue:	2.1	0.0	4.0	0.0	0.0	0.0	0.0	5.0	0.3	3.9	0.5	0.0
70th%Factor:	1.19	1.20	1.19	1.20	1.20	1.20	1.20	1.19	1.20	1.19	1.20	1.20
HCM2k70thQ:	2.5	0.0	4.8	0.0	0.0	0.0	0.0	6.0	0.3	4.6	0.6	0.0
85th%Factor:	1.58	1.60	1.56	1.60	1.60	1.60	1.60	1.55	1.60	1.56	1.60	1.60
HCM2k85thQ:	3.3	0.0	6.3	0.0	0.0	0.0	0.0	7.8	0.4	6.0	0.8	0.0
90th%Factor:	1.76	1.80	1.73	1.80	1.80	1.80	1.80	1.71	1.79	1.73	1.79	1.80
HCM2k90thQ:	3.7	0.0	7.0	0.0	0.0	0.0	0.0	8.6	0.5	6.7	0.9	0.0
95th%Factor:	2.03	2.10	1.98	2.10	2.10	2.10	2.10	1.95	2.09	1.98	2.08	2.10
HCM2k95thQ:	4.3	0.0	8.0	0.0	0.0	0.0	0.0	9.8	0.5	7.7	1.0	0.0
98th%Factor:	2.55	2.70	2.43	2.70	2.70	2.70	2.70	2.38	2.68	2.44	2.66	2.70
HCM2k98thQ:	5.4	0.0	9.8	0.0	0.0	0.0	0.0	12.0	0.7	9.5	1.3	0.0

EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #54 West Lane & Commercial DW #3

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[10.3]

Street Name:	West Lane						Commercial Site Driveway #3					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	1
Volume Module:	AM Peak Hour											
Base Vol:	0	735	0	0	1073	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	735	0	0	1073	0	0	0	0	0	0	0
Added Vol:	0	103	9	0	91	0	0	0	0	0	0	2
Pass-By Vol:	0	-3	3	0	0	0	0	0	0	0	0	2
Initial Fut:	0	835	12	0	1164	0	0	0	0	0	0	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	908	13	0	1265	0	0	0	0	0	0	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	908	13	0	1265	0	0	0	0	0	0	4
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	309
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	687
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	687
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.5
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	10.3
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	B
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			10.3		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

```
Intersection #54 West Lane & Commercial DW #3
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
-----------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                        #99
Dist(miles):                       0.250
Speed (mph):                        1.00
SignalIndex:                       #8
Cycle Time:                          100 secs
InitVolume:                    161   449
Saturation:                   1769  3538
ArrivalType:                     4     4
G/C:                           0.10  0.14
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                            0.129 0.180
gq1:                           7.92 10.40
gq2:                           1.09  2.12
gq:                            9.02 12.52
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                             0.350
beta:                              0.741
ta (secs):                        900.000
F:                                  0.004
f:                            1.000 1.000
vcmax:                           67   184
vcg:                             67   186
vcmin:                         3000  3000
tp:                             0.0   0.0
p:                                 0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1568  2186   422 1336  2179   309
AdjCnflVol:    0 xxxxx xxxxx    0 xxxxx xxxxx 1568  2186   422 1336  2179   309
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1568  2186   422 1336  2179   309
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1622 xxxxx xxxxx 1622 xxxxx xxxxx   75    45   580  145    46   687
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1622 xxxxx xxxxx 1622 xxxxx xxxxx   75    45   580  145    46   687
```


EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

```
*******************************************************************************
Intersection #55 West Lane & Commercial DW #4
*******************************************************************************
Average Delay (sec/veh):      0.0       Worst Case Level Of Service: B[ 10.3]
*******************************************************************************
Street Name:            West Lane                Commercial Site Driveway #4
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
-----------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  2  1  0    0  0  3  0  0    0  0  0  0  0    0  0  0  0  1
-----------|---------------||---------------||---------------||---------------|
Volume Module:AM Peak Hour
Base Vol:       0  735     0     0 1073     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  735     0     0 1073     0     0    0     0     0    0     0
Added Vol:      0  110     9     0   91     0     0    0     0     0    0     2
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0  845     9     0 1164     0     0    0     0     0    0     2
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0  918    10     0 1265     0     0    0     0     0    0     2
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0  918    10     0 1265     0     0    0     0     0    0     2
-----------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.9
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3
-----------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   311
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   685
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   685
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.00
-----------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.2
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  10.3
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     B
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             10.3
ApproachLOS:         *                *                *                B
*******************************************************************************
Note: Queue reported is the distance per lane in feet.
*******************************************************************************
```

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #55 West Lane & Commercial DW #4

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	2%	2%	2%	2%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0
Pedestrian Walk Speed: 4.00 feet/sec				
LaneWidth:	12 feet	12 feet	12 feet	12 feet
Time Period: 0.25 hour				

EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #56 West Lane & Road A

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B[11.1]

Street Name:	West Lane												Road A											
Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Rights:	Include						Include						Include						Include					
Lanes:	0	0	2	1	0		0	0	2	0	0		0	0	0	0	0		0	0	0	0	1	
Volume Module:AM Peak Hour																								
Base Vol:	0	735		0		0	1073		0		0		0		0		0		0		0		0	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Initial Bse:	0	735		0		0	1073		0		0		0		0		0		0		0		0	
Added Vol:	0	51		81		0	91		0		0		0		0		0		0		0		68	
PasserByVol:	0	0		0		0	0		0		0		0		0		0		0		0		0	
Initial Fut:	0	786		81		0	1164		0		0		0		0		0		0		0		68	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
PHF Adj:	0.92	0.92		0.92		0.92	0.92		0.92		0.92		0.92		0.92		0.92		0.92		0.92		0.92	
PHF Volume:	0	854		88		0	1265		0		0		0		0		0		0		0		74	
Reduct Vol:	0	0		0		0	0		0		0		0		0		0		0		0		0	
FinalVolume:	0	854		88		0	1265		0		0		0		0		0		0		0		74	
Critical Gap Module:																								
Critical Gp:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxxx		xxxx		xxxxx		xxxxx		xxxx		6.9	
FollowUpTim:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxxx		xxxx		xxxxx		xxxxx		xxxx		3.3	
Capacity Module:																								
Cnflict Vol:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		xxxxx		xxxx		xxxx		xxxx		329	
Potent Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		xxxxx		xxxx		xxxx		xxxx		667	
Move Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		xxxxx		xxxx		xxxx		xxxx		667	
Volume/Cap:	xxxx	xxxx		xxxx		xxxx	xxxx		xxxx		xxxx		xxxx		xxxx		xxxx		xxxx		xxxx		0.11	
Level Of Service Module:																								
2Way95thQ:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		xxxxx		xxxx		xxxx		xxxx		9.3	
Control Del:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		xxxxx		xxxxx		xxxx		xxxx		11.1	
LOS by Move:	*	*		*		*	*		*		*		*		*		*		*		*		B	
Movement:	LT - LTR - RT						LT - LTR - RT						LT - LTR - RT						LT - LTR - RT					
Shared Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		xxxxx		xxxx		xxxx		xxxxx			
SharedQueue:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		xxxxx		xxxxx		xxxx		xxxxx			
Shrd ConDel:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		xxxxx		xxxxx		xxxx		xxxxx			
Shared LOS:	*	*		*		*	*		*		*		*		*		*		*		*			
ApproachDel:	xxxxxx						xxxxxx						xxxxxx						11.1					
ApproachLOS:	*						*						*						B					

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

```
*******************************************************************************
Intersection #56 West Lane & Road A
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
-----------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:       #106             #99
Dist(miles):      0.250            0.250
Speed (mph):       1.00             1.00
SignalIndex:      #16              #8
Cycle Time:         100 secs         100 secs
InitVolume:     0   854        161   449
Saturation:     0  3538       1769  3538
ArrivalType:    0     4          4     4
G/C:         0.00  0.53       0.10  0.14
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:          0.000 0.711      0.129 0.180
gq1:         0.00  6.98       7.92 10.40
gq2:         0.00  3.31       1.09  2.12
gq:          0.00 10.28       9.02 12.52
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:            0.400            0.400
beta:             0.714            0.714
ta (secs):       900.000           900.000
F:                0.004            0.004
f:          1.000 1.000      1.000 1.000
vcmax:          0   138         61   168
vcg:            0   292         61   170
vcmin:       2000  2000       2000  2000
tp:           0.0   0.0        0.0   0.0
p:                0.000            0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1550  2208   633 1531  2164   329
AdjCnflVol:    0 xxxxx xxxxx    0 xxxxx xxxxx 1550  2208   633 1531  2164   329
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1550  2208   633 1531  2164   329
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1622 xxxxx xxxxx 1622 xxxxx xxxxx   77    44   423  108    47   667
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1622 xxxxx xxxxx 1622 xxxxx xxxxx   77    44   423  108    47   667
```


EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

```
*******************************************************************************
Intersection #57 Eight Mile & Hi Dens Res DW #1
*******************************************************************************
Average Delay (sec/veh):      0.5       Worst Case Level Of Service: B[ 14.1]
*******************************************************************************
Street Name:  High Density Resid Driveway #1          Eight Mile Road
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
-----------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  0    0  0  1  1  0    0  0  2  0  0
-----------|---------------||---------------||---------------||---------------|
Volume Module:AM Peak Hour
Base Vol:       0    0     0     0    0     0     0  831     0     0  698     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0     0    0     0     0  831     0     0  698     0
Added Vol:      0    0    68     0    0     0     0  189    17     0  165     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0    68     0    0     0     0 1020    17     0  863     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0    74     0    0     0     0 1109    18     0  938     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0    74     0    0     0     0 1109    18     0  938     0
-----------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
-----------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   564  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx   469  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx   469  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.16  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
-----------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx  13.9  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx  14.1 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     B     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      14.1           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
*******************************************************************************
Note: Queue reported is the distance per lane in feet.
*******************************************************************************
```

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #57 Eight Mile & Hi Dens Res DW #1

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #58 Eight Mile & Hi Dens Res DW #2

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[14.6]

Street Name:	High Density Resid Driveway #2									Eight Mile Road								
Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	T	R				L	T	R				L	T	R				L	T	R			
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Rights:	Include						Include						Include						Include					
Lanes:	0	0	0	0	1		0	0	0	0	0		0	0	1	1	0		0	0	2	0	0	
Volume Module:	AM Peak Hour																							
Base Vol:	0	0	0		0	0		0	0		0	831		0	0		698		0					
Growth Adj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00		1.00					
Initial Bse:	0	0	0		0	0		0	0		0	831		0	0		698		0					
Added Vol:	0	0	68		0	0		0	0		0	240		17	0		165		0					
PasserByVol:	0	0	0		0	0		0	0		0	0		0	0		0		0					
Initial Fut:	0	0	68		0	0		0	0		0	1071		17	0		863		0					
User Adj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00		1.00					
PHF Adj:	0.92	0.92	0.92		0.92	0.92		0.92	0.92		0.92	0.92		0.92	0.92		0.92		0.92					
PHF Volume:	0	0	74		0	0		0	0		0	1164		18	0		938		0					
Reduct Vol:	0	0	0		0	0		0	0		0	0		0	0		0		0					
FinalVolume:	0	0	74		0	0		0	0		0	1164		18	0		938		0					
Critical Gap Module:																								
Critical Gp:	xxxxx	xxxx	6.9		xxxxx	xxxx		xxxxx	xxxxx		xxxx	xxxxx		xxxxx	xxxx		xxxxx		xxxx	xxxxx				
FollowUpTim:	xxxxx	xxxx	3.3		xxxxx	xxxx		xxxxx	xxxxx		xxxx	xxxxx		xxxxx	xxxx		xxxxx		xxxx	xxxxx				
Capacity Module:																								
Cnflict Vol:	xxxx	xxxx	591		xxxx	xxxx		xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		
Potent Cap.:	xxxx	xxxx	450		xxxx	xxxx		xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		
Move Cap.:	xxxx	xxxx	450		xxxx	xxxx		xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		
Volume/Cap:	xxxx	xxxx	0.16		xxxx	xxxx		xxxx		xxxx	xxxx	xxxx		xxxx	xxxx		xxxx		xxxx	xxxx		xxxx		
Level Of Service Module:																								
2Way95thQ:	xxxx	xxxx	14.6		xxxx	xxxx		xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		
Control Del:	xxxxx	xxxx	14.6		xxxxx	xxxx		xxxxx	xxxxx		xxxx	xxxxx		xxxxx	xxxx		xxxxx		xxxx	xxxxx				
LOS by Move:	*	*	B		*	*		*	*		*	*		*	*		*		*	*				
Movement:	LT -	LTR -	RT		LT -	LTR -		RT			LT -	LTR -		RT			LT -	LTR -		RT				
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx		xxxxx			xxxx	xxxx		xxxxx			xxxx	xxxx		xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx		xxxxx	xxxxx		xxxx	xxxxx		xxxxx	xxxx		xxxxx		xxxx	xxxxx				
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx		xxxxx	xxxxx		xxxx	xxxxx		xxxxx	xxxx		xxxxx		xxxx	xxxxx				
Shared LOS:	*	*	*		*	*		*	*		*	*		*	*		*		*	*				
ApproachDel:	14.6				xxxxxx						xxxxxx						xxxxxx							
ApproachLOS:	B				*						*						*							

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #58 Eight Mile & Hi Dens Res DW #2

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	2%	2%	2%	2%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0
Pedestrian Walk Speed: 4.00 feet/sec				
LaneWidth:	12 feet	12 feet	12 feet	12 feet
Time Period: 0.25 hour				

EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #60 Eight Mile & Industrial DW #1

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name:	Industrial Site Driveway #2				Eight Mile Road			
Approach:	North Bound				South Bound			
					East Bound			
					West Bound			
Movement:	L - T - R				L - T - R			
	L - T - R				L - T - R			
Control:	Stop Sign				Stop Sign			
	Uncontrolled				Uncontrolled			
Rights:	Include				Include			
	Include				Include			
Lanes:	0 0 0 0 1				0 0 0 0 0			
	0 0 1 1 0				0 0 2 0 0			
Volume Module:AM Peak Hour								
Base Vol:	0	0	0	0	0	0	0	772
	0	0	632	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	0	0	0	772
	0	0	632	0				
Added Vol:	0	0	0	0	0	0	0	307
	1	0	180	0				
HamLn No LT:	0	0	0	0	0	0	0	-13
	0	0	0	0				
Initial Fut:	0	0	0	0	0	0	0	1066
	1	0	812	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	1.00	1.00	1.00	1.00				
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
	0.92	0.92	0.92	0.92				
PHF Volume:	0	0	0	0	0	0	0	1159
	1	0	883	0				
Reduct Vol:	0	0	0	0	0	0	0	0
	0	0	0	0				
FinalVolume:	0	0	0	0	0	0	0	1159
	1	0	883	0				
Critical Gap Module:								
Critical Gp:xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
	xxxxx	xxxx	xxxxx					
FollowUpTim:xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
	xxxxx	xxxx	xxxxx					
Capacity Module:								
Cnflict Vol:	xxxx	xxxx	580	xxxx	xxxx	xxxxx	xxxx	xxxx
	xxxxx	xxxx	xxxx	xxxxx				
Potent Cap.:	xxxx	xxxx	458	xxxx	xxxx	xxxxx	xxxx	xxxx
	xxxxx	xxxx	xxxx	xxxxx				
Move Cap.:	xxxx	xxxx	458	xxxx	xxxx	xxxxx	xxxx	xxxx
	xxxxx	xxxx	xxxx	xxxxx				
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx
	xxxx	xxxx	xxxx	xxxx				
Level Of Service Module:								
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx
	xxxxx	xxxx	xxxxx					
Control Del:xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
	xxxxx	xxxx	xxxxx					
LOS by Move:	*	*	*	*	*	*	*	*
	*	*	*					
Movement:	LT - LTR - RT				LT - LTR - RT			
	LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx
	xxxxx	xxxx	xxxxx					
SharedQueue:xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
	xxxxx	xxxx	xxxxx					
Shrd ConDel:xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
	xxxxx	xxxx	xxxxx					
Shared LOS:	*	*	*	*	*	*	*	*
	*	*	*					
ApproachDel:	xxxxxx				xxxxxx			
	xxxxxx							
ApproachLOS:	*				*			
	*							

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #60 Eight Mile & Industrial DW #1

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			12 feet			12 feet			12 feet	

Time Period: 0.25 hour

EPAP + Project AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #61 Eight Mile & Industrial DW #2

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name:	Industrial Site Driveway #2						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 1			0 0 0 0 0			0 0 1 1 0			0 0 2 0 0		
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	0	0	0	0	772	0	0	632	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	772	0	0	632	0
Added Vol:	0	0	0	0	0	0	0	306	1	0	180	0
HamLn No LT:	0	0	0	0	0	0	0	-13	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	1065	1	0	812	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	0	0	0	0	1158	1	0	883	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	1158	1	0	883	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	579	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	458	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	458	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			*			*		

Note: Queue reported is the distance per lane in feet.

EPAP + Project AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #61 Eight Mile & Industrial DW #2

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	2%	2%	2%	2%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0
LaneWidth:	12 feet	12 feet	12 feet	12 feet

Pedestrian Walk Speed: 4.00 feet/sec
Time Period: 0.25 hour

EPAP + Project AM Pk Hr

Future Queue Length Report (feet)

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
#3	[HCM2k95thQ]:	918	38	97	19	633	633	371	660	348	158	1119	1119
#4	[HCM2k95thQ]:	499	126	187	31	471	471	167	746	746	376	477	5
#5	[HCM2k95thQ]:	104	352	901	251	607	117	187	1092	22	831	471	58
#6	[HCM2k95thQ]:	30	398	398	339	283	283	360	360	360	387	387	387
#7	[HCM2k95thQ]:	66	66	66	109	109	109	23	64	0	40	54	54
#8	[HCM2k95thQ]:	829	157	103	79	587	452	357	514	1073	351	490	21
#9	[2Way95thQ]:	xxxx	xxxx	xxxx	1.7	1.7	1.7	0.0	0.0	xxxx	xxxx	xxxx	xxxx
#10	[HCM2k95thQ]:	118	0	158	79	0	17	132	154	154	82	188	188
#11	[HCM2k95thQ]:	77	0	0	10	0	86	125	32	5	0	150	2
#14	[2Way95thQ]:	xxxx	xxxx	xxxx	39.1	39.1	xxxx	xxxx	xxxx	xxxx	10.6	xxxx	38.4
#15	[2Way95thQ]:	14.9	14.9	xxxx	xxxx	xxxx	xxxx	91.1	xxxx	6.2	xxxx	xxxx	xxxx
#16	[HCM2k95thQ]:	0	333	45	68	339	0	0	0	0	391	0	14
#17	[HCM2k95thQ]:	166	54	87	28	132	11	15	163	155	191	76	76
#18	[HCM2k95thQ]:	115	405	320	333	425	38	119	54	121	191	25	354
#19	[HCM2k95thQ]:	320	60	176	370	100	288	243	355	272	247	234	239
#20	[2Way95thQ]:	xxxx	xxxx	xxxx	3.8	3.8	xxxx	xxxx	xxxx	xxxx	143	xxxx	2.9
#21	[2Way95thQ]:	24.3	24.3	xxxx	xxxx	xxxx	xxxx	164	xxxx	68.3	xxxx	xxxx	xxxx
#24	[HCM2k95thQ]:	183	228	228	103	563	563	186	186	152	312	25	25
#25	[HCM2k95thQ]:	43	300	68	171	359	359	121	185	185	289	169	169
#26	[HCM2k95thQ]:	221	203	149	121	390	220	233	326	331	279	231	71
#27	[HCM2k95thQ]:	499	293	367	87	424	130	93	334	661	616	182	182
#51	[2Way95thQ]:	xxxx	xxxx	0.5	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#52	[2Way95thQ]:	xxxx	xxxx	0.9	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#53	[HCM2k95thQ]:	107	0	200	0	0	0	0	245	14	192	26	0
#54	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.5
#55	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.2
#56	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	9.3
#57	[2Way95thQ]:	xxxx	xxxx	13.9	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#58	[2Way95thQ]:	xxxx	xxxx	14.6	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#60	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#61	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

EPAP + Project PM Pk Hrr - With Mitigation Meaures

Scenario Report

Scenario:	EPAP + Proj PM
Command:	EPAP + Proj PM
Volume:	EPAP PM
Geometry:	EPAP Proj
Impact Fee:	Default Impact Fee
Trip Generation:	PM Pk Hr
Trip Distribution:	EPAP PM
Paths:	EPAP Proj
Routes:	Default Route
Configuration:	Default Configuration

EPAP + Project PM Pk Hrr - With Mitigation Meaures

Trip Generation Report

Forecast for PM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	750.00	ElemSchStudent	0.07	0.08	53	60	113	7.2
1	Village West	745.00	Tra Vigne SFDU	0.52	0.30	387	224	611	39.0
1	Village West	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	2.63	2.85	0	0	0	0.0
1	Village West	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
1	Village West	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
1	Village West	0.00	GP Alt MFDU	0.41	0.22	0	0	0	0.0
1	Village West	1.00	Tra V Internal	-64.00	-64.00	-64	-64	-128	-8.2
1	Village West	0.00	GP Alt Interna	-76.00	-76.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-106.00	-111.00	0	0	0	0
1	Village West	0.00	Tra Vigne MFDU	0.12	0.48	0	0	0	0.0
	Zone 1 Subtotal					376	220	596	38.0
2	Village East	418.00	Tra Vigne SFDU	0.52	0.30	217	125	342	21.8
2	Village East	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
2	Village East	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
2	Village East	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
	Zone 2 Subtotal					217	125	342	21.8
3	Commercial	101.50	Tra V Comm KSF	2.86	3.10	290	315	605	38.6
3	Commercial	1.00	Tra V Pass-By	-90.00	-94.00	-90	-94	-184	-11.7
	Zone 3 Subtotal					200	221	421	26.8
4	Industrial	21.40	Indust KSF	0.05	0.17	1	4	5	0.3
	Zone 4 Subtotal					1	4	5	0.3
5	Hi Dens Res	340.00	Tra Vigne MFDU	0.12	0.48	41	163	204	13.0
	Zone 5 Subtotal					41	163	204	13.0
TOTAL						835	733	1568	100.0

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EPAP + Project PM Pk Hrr - With Mitigation Meaures

Trip Distribution Report

Percent Of Trips EPAP PM

Zone	To Gates 1	2	5	6	8	9	10	11	14	15	16
1	2.0	1.0	2.0	4.0	7.0	2.0	3.0	3.0	1.0	3.0	8.0
2	2.0	1.0	2.0	4.0	7.0	2.0	3.0	3.0	1.0	3.0	8.0
3	2.0	1.0	2.0	4.0	7.0	2.0	3.0	3.0	1.0	3.0	8.0
4	2.0	1.0	2.0	4.0	7.0	2.0	3.0	3.0	1.0	3.0	8.0
5	2.0	1.0	2.0	4.0	7.0	2.0	3.0	3.0	1.0	3.0	8.0

Zone	To Gates 17	18	19	20	22	23
1	2.0	3.0	32.0	5.0	2.0	20.0
2	2.0	3.0	32.0	5.0	2.0	20.0
3	2.0	3.0	32.0	5.0	2.0	20.0
4	2.0	3.0	32.0	5.0	2.0	20.0
5	2.0	3.0	32.0	5.0	2.0	20.0

EPAP + Project PM Pk Hrr - With Mitigation Meaures

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Del/ Veh	V/ C	Future LOS	Del/ Veh	V/ C	Change in D/V
# 5 Eight Mile & Lower Sacto Rd	D	37.1	0.901	D	44.9	0.983	+ 7.841

EPAP + Project PM Pk Hrr - With Mitigation Meaures

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]

EPAP + Project PM Pk Hrr - With Mitigation Meaures

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.983
Loss Time (sec):	12	Average Delay (sec/veh):	44.9
Optimal Cycle:	169	Level Of Service:	D

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:PM Peak Hour												
Base Vol:	49	372	339	61	334	112	98	1001	22	375	1111	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	49	372	339	61	334	112	98	1001	22	375	1111	42
Added Vol:	0	0	67	17	0	0	0	83	0	59	73	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	49	372	406	78	334	112	98	1084	22	434	1184	57
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	53	404	441	85	363	122	107	1178	24	472	1287	62
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	53	404	441	85	363	122	107	1178	24	472	1287	62
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	53	404	441	85	363	122	107	1178	24	472	1287	62
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.98	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3432	1862	1583	1769	1862	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.02	0.22	0.28	0.05	0.19	0.08	0.06	0.33	0.02	0.27	0.36	0.04
Crit Moves:		****		****				****		****		
Green/Cycle:	0.02	0.22	0.49	0.05	0.25	0.25	0.09	0.34	0.34	0.27	0.52	0.52
Volume/Cap:	0.78	0.98	0.57	0.98	0.78	0.31	0.69	0.98	0.04	0.98	0.69	0.07
Delay/Veh:	91.5	78.4	18.8	138.4	43.2	30.9	57.4	54.6	22.2	72.7	19.0	11.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	91.5	78.4	18.8	138.4	43.2	30.9	57.4	54.6	22.2	72.7	19.0	11.8
LOS by Move:	F	E	B	F	D	C	E	D	C	E	B	B
HCM2k95thQ:	111	768	376	268	542	148	226	1036	22	855	590	33

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hrr - With Mitigation Meaures

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	1	0 1	1	0	1	0 1	1	0	2	0 1	1	0	2	0 1
Lane Group:	L		T	R	L		T	R	L		T	R	L		T	R
#LnsInGrps:	2		1	1	1		1	1	1		2	1	1		2	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.90	0.98	0.83		0.93	0.98	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Project PM Pk Hrr - With Mitigation Meaures

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.02	0.22	0.49		0.05	0.25	0.25		0.09	0.34	0.34		0.27	0.52	0.52	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	1.00	0.78		1.00	0.97	0.91		0.99	0.99	0.83		1.00	0.78	0.64	
Q1:		0.8	11.2	6.7	2.4	9.1	2.5		2.8	17.0	0.4		13.0	11.0	0.5	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:		1.4	6.7	1.3	3.2	2.9	0.4		1.8	8.2	0.0		7.2	2.2	0.1	
HCM2KQueue:		2.2	17.8	8.0	5.5	12.0	3.0		4.6	25.1	0.4		20.2	13.2	0.6	
70th%Factor:	1.19	1.16	1.18		1.19	1.17	1.19		1.19	1.15	1.20		1.16	1.17	1.20	
HCM2k70thQ:		2.6	20.8	9.4	6.5	14.1	3.5		5.5	29.0	0.5		23.4	15.5	0.8	
85th%Factor:	1.58	1.47	1.53		1.55	1.50	1.57		1.56	1.43	1.60		1.45	1.49	1.59	
HCM2k85thQ:		3.5	26.1	12.2	8.5	18.0	4.6		7.2	35.9	0.7		29.3	19.7	1.0	
90th%Factor:	1.76	1.56	1.67		1.70	1.62	1.75		1.72	1.51	1.79		1.55	1.61	1.79	
HCM2k90thQ:		3.9	27.9	13.3	9.4	19.4	5.2		7.9	38.1	0.7		31.2	21.2	1.1	
95th%Factor:	2.03	1.72	1.89		1.94	1.81	2.01		1.96	1.65	2.09		1.70	1.79	2.08	
HCM2k95thQ:		4.4	30.7	15.0	10.7	21.7	5.9		9.0	41.4	0.9		34.2	23.6	1.3	
98th%Factor:	2.54	1.95	2.24		2.35	2.10	2.50		2.40	1.84	2.67		1.91	2.06	2.65	
HCM2k98thQ:		5.6	34.8	17.9	13.0	25.1	7.4		11.0	46.4	1.1		38.5	27.2	1.7	

EPAP + Project PM Pk Hrr - With Mitigation Meaures

Future Queue Length Report (feet)

Node	Intersection	Northbound L	Northbound -- T	Northbound -- R	Southbound L	Southbound -- T	Southbound -- R	Eastbound L	Eastbound -- T	Eastbound -- R	Westbound L	Westbound -- T	Westbound -- R
#5	[HCM2k95thQ]:	111	768	376	268	542	148	226	1036	22	855	590	33

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EPAP + Project PM Pk Hr

Scenario Report

Scenario:	EPAP + Proj PM
Command:	EPAP + Proj PM
Volume:	EPAP PM
Geometry:	EPAP Proj
Impact Fee:	Default Impact Fee
Trip Generation:	PM Pk Hr
Trip Distribution:	EPAP PM
Paths:	EPAP Proj
Routes:	Default Route
Configuration:	Default Configuration

EPAP + Project PM Pk Hr

Trip Generation Report

Forecast for PM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	750.00	ElemSchStudent	0.07	0.08	53	60	113	7.2
1	Village West	745.00	Tra Vigne SFDU	0.52	0.30	387	224	611	39.0
1	Village West	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	2.63	2.85	0	0	0	0.0
1	Village West	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
1	Village West	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
1	Village West	0.00	GP Alt MFDU	0.41	0.22	0	0	0	0.0
1	Village West	1.00	Tra V Internal	-64.00	-64.00	-64	-64	-128	-8.2
1	Village West	0.00	GP Alt Interna	-76.00	-76.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-106.00	-111.00	0	0	0	0
1	Village West	0.00	Tra Vigne MFDU	0.12	0.48	0	0	0	0.0
	Zone 1 Subtotal					376	220	596	38.0
2	Village East	418.00	Tra Vigne SFDU	0.52	0.30	217	125	342	21.8
2	Village East	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
2	Village East	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
2	Village East	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
	Zone 2 Subtotal					217	125	342	21.8
3	Commercial	101.50	Tra V Comm KSF	2.86	3.10	290	315	605	38.6
3	Commercial	1.00	Tra V Pass-By	-90.00	-94.00	-90	-94	-184	-11.7
	Zone 3 Subtotal					200	221	421	26.8
4	Industrial	21.40	Indust KSF	0.05	0.17	1	4	5	0.3
	Zone 4 Subtotal					1	4	5	0.3
5	Hi Dens Res	340.00	Tra Vigne MFDU	0.12	0.48	41	163	204	13.0
	Zone 5 Subtotal					41	163	204	13.0
TOTAL						835	733	1568	100.0

EPAP + Project PM Pk Hr

Trip Distribution Report

Percent Of Trips EPAP PM

Zone	To Gates 1	2	5	6	8	9	10	11	14	15	16
1	2.0	1.0	2.0	4.0	7.0	2.0	3.0	3.0	1.0	3.0	8.0
2	2.0	1.0	2.0	4.0	7.0	2.0	3.0	3.0	1.0	3.0	8.0
3	2.0	1.0	2.0	4.0	7.0	2.0	3.0	3.0	1.0	3.0	8.0
4	2.0	1.0	2.0	4.0	7.0	2.0	3.0	3.0	1.0	3.0	8.0
5	2.0	1.0	2.0	4.0	7.0	2.0	3.0	3.0	1.0	3.0	8.0

Zone	To Gates 17	18	19	20	22	23
1	2.0	3.0	32.0	5.0	2.0	20.0
2	2.0	3.0	32.0	5.0	2.0	20.0
3	2.0	3.0	32.0	5.0	2.0	20.0
4	2.0	3.0	32.0	5.0	2.0	20.0
5	2.0	3.0	32.0	5.0	2.0	20.0

EPAP + Project PM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	D	42.4	0.915	D	44.1	0.943	+ 1.638 D/V
# 4 Eight Mile Rd & Davis Rd	C	29.0	0.812	C	30.5	0.847	+ 1.477 D/V
# 5 Eight Mile & Lower Sacto Rd	D	41.4	0.918	E	57.7	1.053	+16.280 D/V
# 6 West Lane & Armstrong Road	C	33.0	0.721	C	33.1	0.731	+ 0.073 D/V
# 7 West Lane & Ham Lane	A	4.2	0.254	A	5.1	0.271	+ 0.960 D/V
# 8 Eight Mile Rd & West Ln	E	55.2	1.014	E	72.3	1.081	+17.115 D/V
# 9 Eight Mile Road & Ham Lane	C	23.3	0.099	B	13.6	0.045	-9.710 D/V
# 10 Eight Mile & Leach Rd/St G	A	1.3	0.304	B	12.6	0.480	+11.242 D/V
# 11 Eight Mile & MickeGrove/Holman	A	2.7	0.317	B	10.9	0.492	+ 8.205 D/V
# 14 SR99 W Front & SB Ramps 8 Mile	B	11.8	0.374	B	12.8	0.394	+ 1.013 D/V
# 15 SR99 E Front & NB Ramps 8 Mile	C	24.8	0.658	F	62.0	0.978	+37.190 D/V
# 16 West & L.C.MarkTaylor/Marlette	A	0.6	0.337	B	11.2	0.567	+10.579 D/V
# 17 Holman & Lt Col Mark Taylor	C	29.1	0.412	C	29.5	0.412	+ 0.347 D/V
# 18 Morada Lane & West Lane	C	26.3	0.500	C	27.2	0.663	+ 0.831 D/V
# 19 Morada Lane & Holman Road	C	32.1	0.514	C	32.4	0.524	+ 0.306 D/V
# 20 SR99 W Front & SB Ramps Morada	C	23.3	0.693	C	24.2	0.705	+ 0.880 D/V
# 21 SR99 E Front & NB Ramps Morada	D	27.3	0.796	D	31.4	0.851	+ 4.039 D/V
# 24 West Ln & West Ln Frontage Rd	B	19.6	0.545	B	18.9	0.627	-0.691 D/V
# 25 West Lane & Knickerbocker Dr	C	24.8	0.540	C	23.2	0.605	-1.671 D/V
# 26 West Lane & Hammer Lane	D	35.8	0.728	D	35.7	0.728	-0.036 D/V
# 27 Hammer Lane & Holman Road	D	39.8	0.904	D	39.8	0.903	-0.009 D/V
# 51 Eight Mile & Commercial DW #1	A	0.0	0.000	B	12.9	0.079	+12.879 D/V
# 52 Eight Mile & Commercial DW #2	A	0.0	0.000	B	11.6	0.122	+11.569 D/V
# 53 Eight Mile Road & Road C	A	0.3	0.306	B	12.4	0.513	+12.060 D/V

EPAP + Project PM Pk Hr

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 54 West Lane & Commercial DW #3	A	0.0	0.000	B	11.7	0.084	+11.714 D/V
# 55 West Lane & Commercial DW #4	A	0.0	0.000	B	11.3	0.022	+11.328 D/V
# 56 West Lane & Road A	A	0.0	0.000	B	12.0	0.057	+11.955 D/V
# 57 Eight Mile & Hi Dens Res DW #1	A	0.0	0.000	B	14.9	0.198	+14.947 D/V
# 58 Eight Mile & Hi Dens Res DW #2	A	0.0	0.000	C	15.6	0.208	+15.589 D/V
# 60 Eight Mile & Industrial DW #1	A	0.0	0.000	B	13.1	0.005	+13.133 D/V
# 61 Eight Mile & Industrial DW #2	A	0.0	0.000	B	13.1	0.005	+13.140 D/V

EPAP + Project PM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 9 Eight Mile Road & Ham Lane	??? / ???	No / No
# 14 SR99 W Front & SB Ramps 8 Mile	??? / ???	No / No
# 15 SR99 E Front & NB Ramps 8 Mile	??? / ???	Yes / No
# 20 SR99 W Front & SB Ramps Morada	??? / ???	No / No
# 21 SR99 E Front & NB Ramps Morada	??? / ???	Yes / Yes
# 51 Eight Mile & Commercial DW #1	??? / ???	No / No
# 52 Eight Mile & Commercial DW #2	??? / ???	No / No
# 54 West Lane & Commercial DW #3	??? / ???	No / No
# 55 West Lane & Commercial DW #4	??? / ???	No / No
# 56 West Lane & Road A	??? / ???	No / No
# 57 Eight Mile & Hi Dens Res DW #1	??? / ???	No / No
# 58 Eight Mile & Hi Dens Res DW #2	??? / ???	No / No
# 60 Eight Mile & Industrial DW #1	??? / ???	No / No
# 61 Eight Mile & Industrial DW #2	??? / ???	No / No

EPAP + Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #9 Eight Mile Road & Ham Lane

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	1	0	0	0	0	1	1	0
Initial Vol:	0	0	0	0	0	0	0	18			0	1107		0		0	1089			31
ApproachDel:	xxxxxx					13.6					xxxxxx					xxxxxx				

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=18]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2245]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #9 Eight Mile Road & Ham Lane

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	1	0	0	0	0	1	1	0
Initial Vol:	0	0	0	0	0	0	0	18			0	1107		0		0	1089			31

Major Street Volume: 2227
Minor Approach Volume: 18
Minor Approach Volume Threshold: 9 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
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EPAP + Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	112			7	382	143			0	0	0		0	26		0	335		
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					12.8				

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.3]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=361]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1005]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	112			7	382	143			0	0	0		0	26		0	335		

Major Street Volume: 644
Minor Approach Volume: 361
Minor Approach Volume Threshold: 431

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	60	234			0		0	204	188		395		0		50		0		0	0
ApproachDel:	xxxxxx					xxxxxx					62.0					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=7.7]
SUCCEED - Vehicle-hours >= 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=445]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1131]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	60	234			0		0	204	188		395		0		50		0		0	0

Major Street Volume: 686
Minor Approach Volume: 445
Minor Approach Volume Threshold: 536

SIGNAL WARRANT DISCLAIMER
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EPAP + Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #20 SR99 W Front & SB Ramps Morada

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0		73		312	30		101		0	0		0		0	372		0		16
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					24.2				

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=2.6]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=388]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=904]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #20 SR99 W Front & SB Ramps Morada

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0		73		312	30		101		0	0		0		0	372		0		16

Major Street Volume: 516
Minor Approach Volume: 388
Minor Approach Volume Threshold: 501

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #21 SR99 E Front & NB Ramps Morada

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0
Initial Vol:	190	223		0		0	262		13		120		0		585		0		0	
ApproachDel:	xxxxxx					xxxxxx					31.4					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=6.1]
SUCCEED - Vehicle-hours >= 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=705]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1393]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #21 SR99 E Front & NB Ramps Morada

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0
Initial Vol:	190	223		0		0	262		13		120		0		585		0		0	

Major Street Volume: 688
Minor Approach Volume: 705
Minor Approach Volume Threshold: 410

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #51 Eight Mile & Commercial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	2	0	1	0	0	2	0	0
Initial Vol:	0		0		36	0		0		0	0		969		53	0		1141		0
ApproachDel:	12.9					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=36]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2199]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #51 Eight Mile & Commercial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	2	0	1	0	0	2	0	0
Initial Vol:	0		0		36	0		0		0	0		969		53	0		1141		0

Major Street Volume: 2163
Minor Approach Volume: 36
Minor Approach Volume Threshold: 19 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #52 Eight Mile & Commercial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	2	1	0	0	0	2	0	0
Initial Vol:	0		0		70	0		0		0	0		951		53	0		1141		0
ApproachDel:	11.6					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=70]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2215]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #52 Eight Mile & Commercial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	2	1	0	0	0	2	0	0
Initial Vol:	0		0		70	0		0		0	0		951		53	0		1141		0

Major Street Volume: 2145
Minor Approach Volume: 70
Minor Approach Volume Threshold: 22 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
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EPAP + Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #54 West Lane & Commercial DW #3

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1049			67	0	981			0	0		0		0	0		0	0	45
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					11.7				

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=45]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2142]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #54 West Lane & Commercial DW #3

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1049			67	0	981			0	0		0		0	0		0	0	45

Major Street Volume: 2097
Minor Approach Volume: 45
Minor Approach Volume Threshold: 30 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #55 West Lane & Commercial DW #4

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1104			37	0	981			0	0		0	0		0	0		0	12
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					11.3				

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=12]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2134]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #55 West Lane & Commercial DW #4

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1104			37	0	981			0	0		0	0		0	0		0	12

Major Street Volume: 2122
Minor Approach Volume: 12
Minor Approach Volume Threshold: 26 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
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EPAP + Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #56 West Lane & Road A

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1112		103		0	981		0		0	0		0		0	0		0	29
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					12.0				

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=29]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2225]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #56 West Lane & Road A

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	1112		103		0	981		0		0	0		0		0	0		0	29

Major Street Volume: 2196
Minor Approach Volume: 29
Minor Approach Volume Threshold: 14 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
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EPAP + Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #57 Eight Mile & Hi Dens Res DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		82	0		0		0	0		1065		21	0		1162		0
ApproachDel:	14.9					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=82]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2330]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #57 Eight Mile & Hi Dens Res DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		82	0		0		0	0		1065		21	0		1162		0

Major Street Volume: 2248
Minor Approach Volume: 82
Minor Approach Volume Threshold: 6 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #58 Eight Mile & Hi Dens Res DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		82	0		0		0	0		1126		21	0		1162		0
ApproachDel:	15.6					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=82]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2391]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #58 Eight Mile & Hi Dens Res DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		82	0		0		0	0		1126		21	0		1162		0

Major Street Volume: 2309
Minor Approach Volume: 82
Minor Approach Volume Threshold: -3 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #60 Eight Mile & Industrial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		2	0		0		0	0		1101		1	0		1091		0
ApproachDel:	13.1					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=2]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2195]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #60 Eight Mile & Industrial DW #1

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		2	0		0		0	0		1101		1	0		1091		0

Major Street Volume: 2193
Minor Approach Volume: 2
Minor Approach Volume Threshold: 14 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + Project PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #61 Eight Mile & Industrial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		2	0		0		0	0		1102		1	0		1091		0
ApproachDel:	13.1					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=2]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2196]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + Project PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #61 Eight Mile & Industrial DW #2

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0
Initial Vol:	0		0		2	0		0		0	0		1102		1	0		1091		0

Major Street Volume: 2194
Minor Approach Volume: 2
Minor Approach Volume Threshold: 14 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec): 100 Critical Vol./Cap.(X): 0.943
Loss Time (sec): 12 Average Delay (sec/veh): 44.1
Optimal Cycle: 134 Level Of Service: D

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1	0	1	1	0	0	1	0	1	0	2	0	1	1	0	1	1	0
Volume Module:	PM Peak Hour											
Base Vol:	422	20	49	18	61	219	174	1454	583	73	1229	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	422	20	49	18	61	219	174	1454	583	73	1229	5
Added Vol:	0	0	8	0	0	0	0	50	0	7	44	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	422	20	57	18	61	219	174	1504	583	80	1273	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	459	22	62	20	66	238	189	1635	634	87	1384	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	459	22	62	20	66	238	189	1635	634	87	1384	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	459	22	62	20	66	238	189	1635	634	87	1384	5
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.87	0.87	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	2.00	1.00	1.00	1.00	0.22	0.78	1.00	2.00	1.00	1.00	1.99	0.01
Final Sat.:	3432	1862	1583	1769	358	1286	1769	3538	1583	1769	3520	14
Capacity Analysis Module:												
Vol/Sat:	0.13	0.01	0.04	0.01	0.19	0.19	0.11	0.46	0.40	0.05	0.39	0.39
Crit Moves:	****				****			****		****		
Green/Cycle:	0.14	0.26	0.26	0.07	0.20	0.20	0.12	0.49	0.49	0.05	0.43	0.43
Volume/Cap:	0.94	0.04	0.15	0.15	0.94	0.94	0.92	0.94	0.82	0.94	0.92	0.92
Delay/Veh:	69.6	27.5	28.4	43.8	75.0	75.0	85.4	35.2	28.5	122.2	36.9	36.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.6	27.5	28.4	43.8	75.0	75.0	85.4	35.2	28.5	122.2	36.9	36.9
LOS by Move:	E	C	C	D	E	E	F	D	C	F	D	D
HCM2k95thQ:	506	23	69	35	599	599	265	941	596	162	918	918

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L - T - R						L - T - R						L - T - R						L - T - R					
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	2	0	1	0	1	1	0	0	1	0	1	0	2	0	1	1	0	1	1	0				
Lane Group:	L	T	R			L	RT		RT		L	T	R			L	RT		RT					
#LnsInGrps:	2	1	1			1	1		1		1	2	1			1	2		2					
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12	12	12			12	12		12		12	12	12			12	12		12					
CrsswalkWid:	8					8					8					8								
% Hev Veh:	2					2					2					2								
Grade:	0%					0%					0%					0%								
Parking/Hr:	No					No					No					No								
Bus Stp/Hr:	0					0					0					0								
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:	0					0					0					0								
ExclusiveRT:	Include					Include					Include					Include								
% RT Prtct:	0					0					0					0								
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx						
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00	1.00			1.00	1.00		1.00		1.00	1.00	1.00			1.00	1.00		1.00					
Hev Veh Adj:	0.98	0.98	0.98			0.98	0.98		0.98		0.98	0.98	0.98			0.98	0.98		0.98					
Grade Adj:	1.00	1.00	1.00			1.00	1.00		1.00		1.00	1.00	1.00			1.00	1.00		1.00					
Parking Adj:	xxxx	xxxx	1.00			xxxx	1.00		1.00		xxxx	xxxx	1.00			xxxx	1.00		1.00					
Bus Stp Adj:	xxxx	xxxx	1.00			xxxx	1.00		1.00		xxxx	xxxx	1.00			xxxx	1.00		1.00					
Area Adj:	1.00	1.00	1.00			1.00	1.00		1.00		1.00	1.00	1.00			1.00	1.00		1.00					
RT Adj:	xxxx	xxxx	0.85			xxxx	0.88		0.88		xxxx	xxxx	0.85			xxxx	1.00		1.00					
LT Adj:	0.95	xxxx	xxxxx			0.95	xxxx		xxxxx		0.95	xxxx	xxxxx			0.95	xxxx		xxxxx					
PedBike Adj:	1.00	1.00	1.00			1.00	1.00		1.00		1.00	1.00	1.00			1.00	1.00		1.00					
HCM Sat Adj:	0.93	0.98	0.83			0.93	0.87		0.87		0.93	0.98	0.83			0.93	0.98		0.98					
Usr Sat Adj:	1.00	1.00	1.00			1.00	1.00		1.00		1.00	1.00	1.00			1.00	1.00		1.00					
MLF Sat Adj:	0.97	1.00	1.00			1.00	1.00		1.00		1.00	0.95	1.00			1.00	0.95		0.95					
Fnl Sat Adj:	0.90	0.98	0.83			0.93	0.87		0.87		0.93	0.93	0.83			0.93	0.93		0.93					
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00	1.00			1.00	1.00		1.00		1.00	1.00	1.00			1.00	1.00		1.00					

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.14	0.26	0.26	0.07	0.20	0.20	0.12	0.49	0.49	0.05	0.43	0.43
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.88	0.89	0.98	0.99	0.99	1.00	0.95	0.87	1.00	0.96	0.96
Q1:	6.5	0.4	1.2	0.5	8.3	8.3	5.2	21.6	13.1	2.4	18.4	18.4
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	1.01	1.01	1.01	0.69	0.69	0.69
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.09	0.09	0.66	0.66	0.66
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.03	0.06	0.06	0.12	0.42	0.42
Q2:	4.6	0.0	0.2	0.2	5.1	5.1	0.3	0.9	0.3	0.8	3.4	3.4
HCM2KQueue:	11.1	0.4	1.4	0.7	13.4	13.4	5.4	22.5	13.3	3.2	21.9	21.9
70th%Factor:	1.18	1.20	1.20	1.20	1.17	1.17	1.19	1.16	1.17	1.19	1.16	1.16
HCM2k70thQ:	13.1	0.5	1.6	0.8	15.7	15.7	6.5	26.0	15.6	3.9	25.3	25.3
85th%Factor:	1.51	1.60	1.59	1.59	1.49	1.49	1.55	1.44	1.49	1.57	1.44	1.44
HCM2k85thQ:	16.7	0.7	2.1	1.1	20.0	20.0	8.4	32.4	19.9	5.1	31.6	31.6
90th%Factor:	1.63	1.79	1.77	1.79	1.60	1.60	1.70	1.53	1.61	1.74	1.53	1.53
HCM2k90thQ:	18.1	0.8	2.4	1.2	21.5	21.5	9.3	34.4	21.4	5.6	33.6	33.6
95th%Factor:	1.82	2.09	2.06	2.08	1.78	1.78	1.94	1.67	1.79	2.00	1.68	1.68
HCM2k95thQ:	20.2	0.9	2.8	1.4	23.9	23.9	10.6	37.6	23.8	6.5	36.7	36.7
98th%Factor:	2.13	2.67	2.60	2.65	2.06	2.06	2.36	1.88	2.06	2.48	1.89	1.89
HCM2k98thQ:	23.6	1.2	3.5	1.8	27.6	27.6	12.8	42.2	27.5	8.0	41.3	41.3

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.847
Loss Time (sec):	12	Average Delay (sec/veh):	30.5
Optimal Cycle:	90	Level Of Service:	C

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	1 1	0	1 0	2 0	1
Volume Module:	PM Peak Hour											
Base Vol:	178	85	73	8	98	114	95	1081	265	72	1098	3
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	178	85	73	8	98	114	95	1081	265	72	1098	3
Added Vol:	0	0	25	0	0	0	0	58	0	22	51	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	178	85	98	8	98	114	95	1139	265	94	1149	3
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	193	92	107	9	107	124	103	1238	288	102	1249	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	193	92	107	9	107	124	103	1238	288	102	1249	3
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	193	92	107	9	107	124	103	1238	288	102	1249	3
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.90	0.90	0.93	0.90	0.90	0.93	0.93	0.83
Lanes:	1.00	1.00	1.00	1.00	0.46	0.54	1.00	1.62	0.38	1.00	2.00	1.00
Final Sat.:	1769	1862	1583	1769	791	920	1769	2790	649	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.11	0.05	0.07	0.00	0.13	0.13	0.06	0.44	0.44	0.06	0.35	0.00
Crit Moves:	****				****			****		****		
Green/Cycle:	0.13	0.27	0.27	0.02	0.16	0.16	0.08	0.52	0.52	0.07	0.51	0.51
Volume/Cap:	0.85	0.18	0.25	0.25	0.85	0.85	0.69	0.85	0.85	0.85	0.69	0.00
Delay/Veh:	67.0	28.3	29.0	52.1	62.1	62.1	57.9	24.3	24.3	85.7	19.9	12.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.0	28.3	29.0	52.1	62.1	62.1	57.9	24.3	24.3	85.7	19.9	12.1
LOS by Move:	E	C	C	D	E	E	E	C	C	F	B	B
HCM2k95thQ:	394	101	122	28	441	441	145	749	749	262	593	2

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        1  0  1  0  1    1  0  0  1  0    1  0  1  1  0    1  0  2  0  1
Lane Group:    L    T     R     L   RT     RT    L   RT     RT    L    T     R
#LnsInGrps:     1    1     1     1    1     1     1    2     2     1    2     1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:          8                8                8                8
% Hev Veh:            2                2                2                2
Grade:               0%               0%               0%               0%
Parking/Hr:          No               No               No               No
Bus Stp/Hr:           0                0                0                0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:          0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:           0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Hev Veh Adj: 0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
Grade Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Parking Adj: xxxx xxxx  1.00  xxxx 1.00  1.00  xxxx 1.00  1.00  xxxx xxxx  1.00
Bus Stp Adj: xxxx xxxx  1.00  xxxx 1.00  1.00  xxxx 1.00  1.00  xxxx xxxx  1.00
Area Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
RT Adj:      xxxx xxxx  0.85  xxxx 0.92  0.92  xxxx 0.97  0.97  xxxx xxxx  0.85
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.93 0.98  0.83  0.93 0.90  0.90  0.93 0.95  0.95  0.93 0.98  0.83
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 0.95  0.95  1.00 0.95  1.00
Fnl Sat Adj: 0.93 0.98  0.83  0.93 0.90  0.90  0.93 0.90  0.90  0.93 0.93  0.83
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
```


EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Green/Cycle: 0.13 0.27  0.27  0.02 0.16  0.16  0.08 0.52  0.52  0.07 0.51  0.51
ArrivalType:         4                4                4                4
ProgFactor:  0.99 0.89  0.90  0.99 0.99  0.99  0.99 0.86  0.86  1.00 0.80  0.66
Q1:           5.2  1.8   2.1   0.2  6.1   6.1   2.8 16.5  16.5   2.8 11.1   0.0
UpstreamVC:  0.00 0.00  0.00  0.00 0.00  0.00  0.94 0.94  0.94  0.00 0.00  0.00
UpstreamAdj: 0.00 0.00  0.00  0.00 0.00  0.00  0.22 0.22  0.22  0.00 0.00  0.00
EarlyArrAdj: 1.00 1.00  1.00  1.00 1.00  1.00  0.05 0.16  0.16  1.00 1.00  1.00
Q2:           3.2  0.2   0.3   0.3  3.4   3.4   0.1  0.8   0.8   2.6  2.2   0.0
HCM2KQueue:   8.4  2.0   2.4   0.5  9.5   9.5   2.9 17.3  17.3   5.4 13.3   0.0
------------|---------------||---------------||---------------||---------------|
70th%Factor: 1.18 1.20  1.19  1.20 1.18  1.18  1.19 1.16  1.16  1.19 1.17  1.20
HCM2k70thQ:   9.9  2.4   2.9   0.7 11.2  11.2   3.4 20.2  20.2   6.4 15.6   0.0
------------|---------------||---------------||---------------||---------------|
85th%Factor: 1.53 1.58  1.58  1.59 1.52  1.52  1.57 1.47  1.47  1.55 1.49  1.60
HCM2k85thQ:  12.8  3.1   3.8   0.9 14.4  14.4   4.5 25.4  25.4   8.4 19.8   0.1
------------|---------------||---------------||---------------||---------------|
90th%Factor: 1.66 1.76  1.75  1.79 1.65  1.65  1.75 1.57  1.57  1.71 1.61  1.80
HCM2k90thQ:  14.0  3.5   4.2   1.0 15.7  15.7   5.0 27.2  27.2   9.2 21.3   0.1
------------|---------------||---------------||---------------||---------------|
95th%Factor: 1.88 2.04  2.02  2.08 1.85  1.85  2.01 1.73  1.73  1.94 1.79  2.10
HCM2k95thQ:  15.8  4.1   4.9   1.1 17.6  17.6   5.8 30.0  30.0  10.5 23.7   0.1
------------|---------------||---------------||---------------||---------------|
98th%Factor: 2.22 2.56  2.53  2.66 2.18  2.18  2.50 1.96  1.96  2.36 2.06  2.70
HCM2k98thQ:  18.7  5.1   6.1   1.4 20.8  20.8   7.2 34.0  34.0  12.7 27.4   0.1
```

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.053
Loss Time (sec):	12	Average Delay (sec/veh):	57.7
Optimal Cycle:	180	Level Of Service:	E

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1 0 1	1	0	1 0 1	1	0	2 0 1	1	0	2 0 1
Volume Module:	PM Peak Hour											
Base Vol:	49	372	339	61	334	112	98	1001	22	375	1111	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	49	372	339	61	334	112	98	1001	22	375	1111	42
Added Vol:	0	0	67	17	0	0	0	83	0	59	73	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	49	372	406	78	334	112	98	1084	22	434	1184	57
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	53	404	441	85	363	122	107	1178	24	472	1287	62
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	53	404	441	85	363	122	107	1178	24	472	1287	62
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	53	404	441	85	363	122	107	1178	24	472	1287	62
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.98	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3432	1862	1583	1769	1862	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.02	0.22	0.28	0.05	0.19	0.08	0.06	0.33	0.02	0.27	0.36	0.04
Crit Moves:			****	****				****		****		
Green/Cycle:	0.02	0.26	0.26	0.05	0.29	0.29	0.08	0.32	0.32	0.25	0.49	0.49
Volume/Cap:	0.68	0.82	1.05	1.05	0.68	0.27	0.74	1.05	0.05	1.05	0.74	0.08
Delay/Veh:	69.8	45.0	95.3	163.2	35.0	27.8	63.9	76.1	23.8	94.4	22.3	13.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.8	45.0	95.3	163.2	35.0	27.8	63.9	76.1	23.8	94.4	22.3	13.6
LOS by Move:	E	D	F	F	D	C	E	E	C	F	C	B
HCM2k95thQ:	100	610	893	284	475	135	239	1145	23	937	676	37

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2	0	1 0 1	1	0	1 0 1	1	0	2 0 1	1	0	2 0 1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	1	1	1	1	1	1	2	1	1	2	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Fnl Sat Adj:	0.90	0.98	0.83	0.93	0.98	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.02	0.26	0.26	0.05	0.29	0.29	0.08	0.32	0.32	0.25	0.49	0.49
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.97	1.00	1.00	0.94	0.89	0.99	1.00	0.85	1.00	0.84	0.69
Q1:	0.8	10.2	12.3	2.4	8.4	2.3	2.9	17.2	0.4	13.1	12.7	0.6
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	1.2	3.5	8.9	3.5	1.9	0.4	2.0	11.0	0.1	9.3	2.7	0.1
HCM2KQueue:	2.0	13.7	21.2	5.9	10.3	2.7	4.9	28.2	0.4	22.4	15.4	0.7
70th%Factor:	1.20	1.17	1.16	1.19	1.18	1.19	1.19	1.15	1.20	1.16	1.17	1.20
HCM2k70thQ:	2.3	16.0	24.6	7.0	12.2	3.2	5.8	32.4	0.5	25.9	18.0	0.9
85th%Factor:	1.58	1.49	1.45	1.55	1.51	1.57	1.55	1.42	1.60	1.44	1.48	1.59
HCM2k85thQ:	3.1	20.4	30.7	9.1	15.6	4.2	7.6	39.9	0.7	32.3	22.8	1.1
90th%Factor:	1.76	1.60	1.54	1.70	1.64	1.75	1.71	1.50	1.79	1.53	1.59	1.79
HCM2k90thQ:	3.5	21.9	32.6	10.0	16.9	4.7	8.4	42.2	0.8	34.3	24.4	1.3
95th%Factor:	2.04	1.78	1.68	1.93	1.84	2.02	1.96	1.63	2.09	1.67	1.76	2.08
HCM2k95thQ:	4.0	24.4	35.7	11.4	19.0	5.4	9.6	45.8	0.9	37.5	27.0	1.5
98th%Factor:	2.56	2.05	1.90	2.34	2.15	2.51	2.39	1.81	2.67	1.88	2.01	2.65
HCM2k98thQ:	5.0	28.1	40.2	13.8	22.2	6.8	11.7	51.1	1.2	42.1	30.9	1.9

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.731
Loss Time (sec): 12 Average Delay (sec/veh): 33.1
Optimal Cycle: 64 Level Of Service: C

Street Name:	West Lane						Armstrong Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	0	1	1	0	0	0	1!	0	0	0	0	1!	0	0
Volume Module:	PM Peak Hour											
Base Vol:	3	582	41	132	476	35	29	60	4	78	202	208
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	582	41	132	476	35	29	60	4	78	202	208
Added Vol:	0	29	0	0	33	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	611	41	132	509	35	29	60	4	78	202	208
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	3	664	45	143	553	38	32	65	4	85	220	226
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	664	45	143	553	38	32	65	4	85	220	226
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	664	45	143	553	38	32	65	4	85	220	226
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.92	0.92	0.93	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92
Lanes:	1.00	1.87	0.13	1.00	1.87	0.13	0.31	0.65	0.04	0.16	0.41	0.43
Final Sat.:	1769	3285	220	1769	3277	225	568	1176	78	278	720	742
Capacity Analysis Module:												
Vol/Sat:	0.00	0.20	0.20	0.08	0.17	0.17	0.06	0.06	0.06	0.30	0.30	0.30
Crit Moves:		****		****					****	****		
Green/Cycle:	0.00	0.28	0.28	0.11	0.38	0.38	0.08	0.08	0.08	0.42	0.42	0.42
Volume/Cap:	0.44	0.73	0.73	0.73	0.44	0.44	0.73	0.73	0.73	0.73	0.73	0.73
Delay/Veh:	86.5	35.7	35.7	56.2	23.1	23.1	63.2	63.2	63.2	28.3	28.3	28.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	86.5	35.7	35.7	56.2	23.1	23.1	63.2	63.2	63.2	28.3	28.3	28.3
LOS by Move:	F	D	D	E	C	C	E	E	E	C	C	C
HCM2k95thQ:	27	516	516	284	300	300	228	228	228	602	602	602

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	1	1 0	1	0	1	1 0	0	0	1!	0 0	0	0	1!	0 0
Lane Group:	L		RT	RT	L		RT	RT	LTR		LTR	LTR	LTR		LTR	LTR
#LnsInGrps:	1		2	2	1		2	2	1		1	1	1		1	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		4		4	4	4		4	4
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.99	0.99		xxxx	0.99	0.99		0.99	0.99	0.99		0.94	0.94	0.94	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.99	0.99	0.99		0.99	0.99	0.99	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.97	0.97		0.93	0.97	0.97		0.96	0.96	0.96		0.92	0.92	0.92	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	0.95		1.00	0.95	0.95		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.92	0.92		0.93	0.92	0.92		0.96	0.96	0.96		0.92	0.92	0.92	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.00	0.28	0.28		0.11	0.38	0.38		0.08	0.08	0.08		0.42	0.42	0.42	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.95	0.95		0.99	0.85	0.85		0.99	0.99	0.99		0.89	0.89	0.89	
Q1:		0.1	9.0	9.0		3.8	5.5	5.5		2.7	2.7	2.7	11.0	11.0	11.0	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:		0.4	2.4	2.4		2.1	0.8	0.8		1.9	1.9	1.9	2.5	2.5	2.5	
HCM2KQueue:		0.5	11.3	11.3		5.9	6.2	6.2		4.6	4.6	4.6	13.5	13.5	13.5	
70th%Factor:	1.20	1.18	1.18		1.19	1.19	1.19		1.19	1.19	1.19		1.17	1.17	1.17	
HCM2k70thQ:		0.6	13.3	13.3		7.0	7.4	7.4		5.5	5.5	5.5	15.8	15.8	15.8	
85th%Factor:	1.59	1.51	1.51		1.55	1.54	1.54		1.56	1.56	1.56		1.49	1.49	1.49	
HCM2k85thQ:		0.8	17.1	17.1		9.1	9.6	9.6		7.2	7.2	7.2	20.1	20.1	20.1	
90th%Factor:	1.79	1.63	1.63		1.70	1.69	1.69		1.72	1.72	1.72		1.60	1.60	1.60	
HCM2k90thQ:		0.9	18.5	18.5		10.0	10.6	10.6		8.0	8.0	8.0	21.6	21.6	21.6	
95th%Factor:	2.08	1.82	1.82		1.93	1.92	1.92		1.96	1.96	1.96		1.78	1.78	1.78	
HCM2k95thQ:		1.1	20.6	20.6		11.4	12.0	12.0		9.1	9.1	9.1	24.1	24.1	24.1	
98th%Factor:	2.66	2.12	2.12		2.34	2.32	2.32		2.40	2.40	2.40		2.05	2.05	2.05	
HCM2k98thQ:		1.4	24.0	24.0		13.7	14.5	14.5		11.2	11.2	11.2	27.7	27.7	27.7	

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.271
Loss Time (sec): 9 Average Delay (sec/veh): 5.1
Optimal Cycle: 25 Level Of Service: A

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	0	0	1!	0	0	1	0
Volume Module:PM Peak Hour												
Base Vol:	0	2	21	18	0	1	5	669	0	16	545	45
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2	21	18	0	1	5	669	0	16	545	45
Added Vol:	0	0	11	0	0	0	0	19	0	5	29	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2	32	18	0	1	5	688	0	21	574	45
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	2	35	20	0	1	5	748	0	23	624	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2	35	20	0	1	5	748	0	23	624	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2	35	20	0	1	5	748	0	23	624	49
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.86	0.86	0.73	1.00	0.73	0.93	0.93	0.95	0.93	0.92	0.92
Lanes:	0.00	0.06	0.94	0.95	0.00	0.05	1.00	2.00	0.00	1.00	1.85	0.15
Final Sat.:	0	96	1530	1315	0	73	1769	3538	0	1769	3245	254
Capacity Analysis Module:												
Vol/Sat:	0.00	0.02	0.02	0.01	0.00	0.01	0.00	0.21	0.00	0.01	0.19	0.19
Crit Moves:		****						****		****		
Green/Cycle:	0.00	0.08	0.08	0.08	0.00	0.08	0.01	0.78	0.00	0.05	0.81	0.81
Volume/Cap:	0.00	0.27	0.27	0.18	0.00	0.18	0.24	0.27	0.00	0.27	0.24	0.24
Delay/Veh:	0.0	44.0	44.0	43.3	0.0	43.3	54.1	3.2	0.0	47.7	2.2	2.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	44.0	44.0	43.3	0.0	43.3	54.1	3.2	0.0	47.7	2.2	2.2
LOS by Move:	A	D	D	D	A	D	D	A	A	D	A	A
HCM2k95thQ:	0	67	67	38	0	38	22	19	0	50	16	16

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	0	0	0	1 0	0	0	0	1! 0	0	1	0	1 1 0	1	0	1	1 0
Lane Group:	xxxx	RT		RT	LTR	LTR	LTR		L	RT		RT	L	RT		RT
#LnsInGrps:	0	1		1	1	1	1		1	2		2	1	2		2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12	12		12	12		12	12	12		12
CrsswalkWid:		8			8					8				8		
% Hev Veh:		2			2					2				2		
Grade:		0%			0%					0%				0%		
Parking/Hr:		No			No					No				No		
Bus Stp/Hr:		0			0					0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0			0					0				0		
ExclusiveRT:		Include			Include					Include				Include		
% RT Prtct:		0			0					0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	xxxx	xxxx		xxxx	5	xxxx	5		1	xxxx		xxxx	1	xxxx		xxxx
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	xxxx	1.00		1.00	1.00	xxxx	1.00		1.00	1.00		xxxxx	1.00	1.00		1.00
Hev Veh Adj:	xxxx	0.98		0.98	0.98	xxxx	0.98		0.98	0.98		xxxxx	0.98	0.98		0.98
Grade Adj:	xxxx	1.00		1.00	1.00	xxxx	1.00		1.00	1.00		xxxxx	1.00	1.00		1.00
Parking Adj:	xxxx	1.00		1.00	1.00	xxxx	1.00		xxxx	1.00		xxxxx	xxxx	1.00		1.00
Bus Stp Adj:	xxxx	1.00		1.00	1.00	xxxx	1.00		xxxx	1.00		xxxxx	xxxx	1.00		1.00
Area Adj:	xxxx	1.00		1.00	1.00	xxxx	1.00		1.00	1.00		xxxxx	1.00	1.00		1.00
RT Adj:	xxxx	0.87		0.87	0.99	xxxx	0.99		xxxx	xxxx		xxxxx	xxxx	0.99		0.99
LT Adj:	xxxx	xxxx		xxxxx	0.75	xxxx	0.75		0.95	xxxx		xxxxx	0.95	xxxx		xxxxx
PedBike Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
HCM Sat Adj:	1.00	0.86		0.86	0.73	1.00	0.73		0.93	0.98		1.00	0.93	0.97		0.97
Usr Sat Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
MLF Sat Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	0.95		0.95	1.00	0.95		0.95
Fnl Sat Adj:	1.00	0.86		0.86	0.73	1.00	0.73		0.93	0.93		0.95	0.93	0.92		0.92
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	0.00	1.00		1.00	1.00	0.00	1.00		1.00	1.00		0.00	1.00	1.00		1.00

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	xxxxxx	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	xxxxxx	7.38	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	xxxxxx	8.38	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	xxxxxx	8.38	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	xxxxxx	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	xxxxxx	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	xxxxxx	20	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	xxxxxx	0.95	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	0.00	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	xxxxxx	0.54	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	xxxxxx	37	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	xxxxxx	1.03	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	xxxxxx	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	xxxxxx	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	xxxxxx	1.10	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	xxxxxx	0.89	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	xxxxxx	1.45	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	xxxxxx	6.93	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	xxxxxx	0.17	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	1.00	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	xxxxxx	1.46	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	xxxxxx	1.00	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	xxxxxx	0.46	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	xxxxxx	0.75	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	xxxxxx	0.75	xxxxxx	xxxxxx

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.00	0.08	0.08	0.08	0.00	0.08	0.01	0.78	0.00	0.05	0.81	0.81				
ArrivalType:	4				4			4				4				
ProgFactor:	1.00	0.98	0.98	0.97	1.00	0.97	1.00	0.00	1.00	0.99	0.00	0.00				
Q1:	0.0	0.9	0.9	0.5	0.0	0.5	0.1	0.0	0.0	0.6	0.0	0.0				
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
EarlyArrAdj:	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00				
Q2:	0.0	0.4	0.4	0.2	0.0	0.2	0.3	0.4	0.0	0.4	0.3	0.3				
HCM2KQueue:	0.0	1.3	1.3	0.7	0.0	0.7	0.4	0.4	0.0	1.0	0.3	0.3				
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20				
HCM2k70thQ:	0.0	1.6	1.6	0.9	0.0	0.9	0.5	0.4	0.0	1.2	0.4	0.4				
85th%Factor:	1.60	1.59	1.59	1.59	1.60	1.59	1.60	1.60	1.60	1.59	1.60	1.60				
HCM2k85thQ:	0.0	2.1	2.1	1.2	0.0	1.2	0.7	0.6	0.0	1.5	0.5	0.5				
90th%Factor:	1.80	1.77	1.77	1.79	1.80	1.79	1.79	1.79	1.80	1.78	1.79	1.79				
HCM2k90thQ:	0.0	2.3	2.3	1.3	0.0	1.3	0.8	0.7	0.0	1.7	0.6	0.6				
95th%Factor:	2.10	2.06	2.06	2.08	2.10	2.08	2.09	2.09	2.10	2.07	2.09	2.09				
HCM2k95thQ:	0.0	2.7	2.7	1.5	0.0	1.5	0.9	0.8	0.0	2.0	0.6	0.6				
98th%Factor:	2.70	2.60	2.60	2.65	2.70	2.65	2.67	2.67	2.70	2.63	2.68	2.68				
HCM2k98thQ:	0.0	3.4	3.4	1.9	0.0	1.9	1.1	1.0	0.0	2.5	0.8	0.8				

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	1.081
Loss Time (sec):	12	Average Delay (sec/veh):	72.3
Optimal Cycle:	180	Level Of Service:	E

Street Name:	West Lane								Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 2	0 1		1	0 2	0 1		1	0 2	0 1		1	0 2	0 1	
Volume Module:	PM Peak Hour															
Base Vol:	528	385	84		14	320	204		264	728	458		68	865	3	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	528	385	84		14	320	204		264	728	458		68	865	3	
Added Vol:	45	9	43		24	5	0		0	129	38		93	102	10	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	573	394	127		38	325	204		264	857	496		161	967	13	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	623	428	138		41	353	222		287	932	539		175	1051	14	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	623	428	138		41	353	222		287	932	539		175	1051	14	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	623	428	138		41	353	222		287	932	539		175	1051	14	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Lanes:	1.00	2.00	1.00		1.00	2.00	1.00		1.00	2.00	1.00		1.00	2.00	1.00	
Final Sat.:	1769	3538	1583		1769	3538	1583		1769	3538	1583		1769	3538	1583	
Capacity Analysis Module:																
Vol/Sat:	0.35	0.12	0.09		0.02	0.10	0.14		0.16	0.26	0.34		0.10	0.30	0.01	
Crit Moves:	****						****		****					****		
Green/Cycle:	0.33	0.38	0.38		0.07	0.13	0.13		0.15	0.33	0.33		0.10	0.27	0.27	
Volume/Cap:	1.08	0.32	0.23		0.32	0.77	1.08		1.08	0.80	1.03		1.03	1.08	0.03	
Delay/Veh:	95.1	21.9	21.1		45.3	49.9	129.7		121.1	34.6	82.2		123.9	89.7	26.6	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	95.1	21.9	21.1		45.3	49.9	129.7		121.1	34.6	82.2		123.9	89.7	26.6	
LOS by Move:	F	C	C		D	D	F		F	C	F		F	F	C	
HCM2k95thQ:	1091	193	115		78	351	565		678	663	1009		356	1000	14	

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 2	0 1		1	0 2	0 1		1	0 2	0 1		1	0 2	0 1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	2	1		1	2	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.33	0.38	0.38	0.07	0.13	0.13	0.15	0.33	0.33	0.10	0.27	0.27
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.83	0.82	0.98	0.99	1.00	1.00	0.95	1.00	1.00	1.00	0.88
Q1:	17.3	3.7	2.1	1.1	4.9	6.2	8.0	11.8	15.0	4.9	15.4	0.3
UpstreamVC:	0.57	0.57	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.40	0.40
UpstreamAdj:	0.80	0.80	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.92	0.92	0.92
EarlyArrAdj:	0.42	0.48	0.44	1.00	1.00	1.00	1.00	1.00	1.00	0.23	0.45	0.41
Q2:	9.4	0.2	0.1	0.4	2.5	6.4	7.5	3.3	9.4	2.7	8.8	0.0
HCM2KQueue:	26.7	3.9	2.3	1.5	7.4	12.6	15.5	15.1	24.4	7.5	24.1	0.3
70th%Factor:	1.15	1.19	1.19	1.20	1.18	1.17	1.17	1.17	1.15	1.18	1.15	1.20
HCM2k70thQ:	30.7	4.6	2.7	1.8	8.8	14.7	18.1	17.6	28.2	8.9	27.9	0.3
85th%Factor:	1.42	1.56	1.58	1.59	1.53	1.50	1.48	1.48	1.43	1.53	1.43	1.60
HCM2k85thQ:	38.0	6.1	3.6	2.4	11.4	18.8	22.9	22.3	35.0	11.5	34.6	0.4
90th%Factor:	1.51	1.73	1.76	1.77	1.68	1.61	1.58	1.59	1.52	1.67	1.52	1.79
HCM2k90thQ:	40.1	6.7	4.0	2.7	12.4	20.3	24.5	23.9	37.0	12.6	36.7	0.5
95th%Factor:	1.64	1.98	2.03	2.05	1.90	1.80	1.75	1.76	1.65	1.90	1.66	2.09
HCM2k95thQ:	43.6	7.7	4.6	3.1	14.0	22.6	27.1	26.5	40.4	14.3	40.0	0.6
98th%Factor:	1.83	2.44	2.54	2.59	2.27	2.08	2.00	2.01	1.85	2.26	1.86	2.68
HCM2k98thQ:	48.8	9.5	5.7	3.9	16.8	26.1	31.0	30.3	45.2	17.0	44.8	0.7

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[13.6]

Street Name:	Ham Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 1	1 0	0	0 0	1 1	0
Volume Module:PM Peak Hour												
Base Vol:	0	0	0	13	0	13	6	726	0	0	851	20
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	13	0	13	6	726	0	0	851	20
Added Vol:	0	0	0	0	0	5	0	375	0	0	238	11
HamLn No LT:	0	0	0	-13	0	0	-6	6	0	0	0	0
Initial Fut:	0	0	0	0	0	18	0	1107	0	0	1089	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	0	0	20	0	1203	0	0	1184	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	20	0	1203	0	0	1184	34
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	1802	2404	609	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	71	33	438	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	71	33	438	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.00	0.00	0.04	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	438	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	13.6	xxxxx	7.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	A	*	*	*	*	*
ApproachDel:	xxxxxx				13.6		xxxxxx			xxxxxx		
ApproachLOS:	*				B		*			*		

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			12 feet			12 feet			12 feet	
Time Period: 0.25 hour												

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St G

Cycle (sec):	100	Critical Vol./Cap.(X):	0.480
Loss Time (sec):	12	Average Delay (sec/veh):	12.6
Optimal Cycle:	39	Level Of Service:	B

Street Name:	Leach Road/Street G						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:PM Peak Hour												
Base Vol:	0	0	0	6	0	5	6	681	0	0	854	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	6	0	5	6	681	0	0	854	5
Added Vol:	41	0	51	0	0	0	69	246	71	88	200	0
HamLn No LT:	0	0	0	13	0	0	6	-13	0	0	0	0
Initial Fut:	41	0	51	19	0	5	81	914	71	88	1054	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	45	0	55	21	0	5	88	993	77	96	1146	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	0	55	21	0	5	88	993	77	96	1146	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	45	0	55	21	0	5	88	993	77	96	1146	5
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	0.93	1.00	0.83	0.93	0.92	0.92	0.93	0.93	0.93
Lanes:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.86	0.14	1.00	1.99	0.01
Final Sat.:	1769	0	1583	1769	0	1583	1769	3247	252	1769	3518	17
Capacity Analysis Module:												
Vol/Sat:	0.03	0.00	0.04	0.01	0.00	0.00	0.05	0.31	0.31	0.05	0.33	0.33
Crit Moves:			****	****			****				****	
Green/Cycle:	0.09	0.00	0.07	0.02	0.00	0.02	0.10	0.67	0.67	0.12	0.68	0.68
Volume/Cap:	0.29	0.00	0.48	0.48	0.00	0.14	0.48	0.46	0.46	0.46	0.48	0.48
Delay/Veh:	44.0	0.0	47.6	56.4	0.0	49.4	44.2	8.2	8.2	42.8	7.8	7.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.0	0.0	47.6	56.4	0.0	49.4	44.2	8.2	8.2	42.8	7.8	7.8
LOS by Move:	D	A	D	E	A	D	D	A	A	D	A	A
HCM2k95thQ:	79	0	116	67	0	16	156	191	191	161	186	186

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St G

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	1	0	1	0	0	1	0	1	1	0	1	0	1	1	0
Lane Group:	L	RT		RT	L	RT		RT	L	RT		RT	L	RT		RT
#LnsInGrps:	1	1		1	1	1		1	1	2		2	1	2		2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	xxxx	0.98		0.98	xxxx	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.99	0.99		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	1.00	0.83		0.93	1.00	0.83		0.93	0.97	0.97		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	0.95		1.00	0.95	0.95	
Fnl Sat Adj:	0.93	1.00	0.83		0.93	1.00	0.83		0.93	0.92	0.92		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	1.00		1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St G

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.09	0.00	0.07		0.02	0.00	0.02		0.10	0.67	0.67		0.12	0.68	0.68	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	1.00	0.99		1.00	1.00	0.99		0.98	0.40	0.40		0.97	0.35	0.35	
Q1:	1.1	0.0	1.5		0.6	0.0	0.1		2.3	3.0	3.0		2.4	2.8	2.8	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	0.00	1.00		1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.4	0.0	0.8		0.7	0.0	0.2		0.9	0.8	0.8		0.8	0.9	0.9	
HCM2KQueue:	1.5	0.0	2.3		1.3	0.0	0.3		3.1	3.8	3.8		3.2	3.7	3.7	
70th%Factor:	1.20	1.20	1.19		1.20	1.20	1.20		1.19	1.19	1.19		1.19	1.19	1.19	
HCM2k70thQ:	1.8	0.0	2.7		1.5	0.0	0.4		3.7	4.6	4.6		3.8	4.5	4.5	
85th%Factor:	1.58	1.60	1.58		1.59	1.60	1.60		1.57	1.56	1.56		1.57	1.56	1.56	
HCM2k85thQ:	2.4	0.0	3.6		2.1	0.0	0.5		4.9	6.0	6.0		5.1	5.8	5.8	
90th%Factor:	1.77	1.80	1.76		1.77	1.80	1.79		1.74	1.73	1.73		1.74	1.73	1.73	
HCM2k90thQ:	2.7	0.0	4.0		2.3	0.0	0.5		5.4	6.6	6.6		5.6	6.5	6.5	
95th%Factor:	2.05	2.10	2.03		2.06	2.10	2.09		2.00	1.98	1.98		2.00	1.99	1.99	
HCM2k95thQ:	3.2	0.0	4.6		2.7	0.0	0.6		6.2	7.6	7.6		6.4	7.4	7.4	
98th%Factor:	2.59	2.70	2.54		2.61	2.70	2.68		2.49	2.44	2.44		2.48	2.45	2.45	
HCM2k98thQ:	4.0	0.0	5.8		3.4	0.0	0.8		7.8	9.4	9.4		8.0	9.2	9.2	

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Cycle (sec):	100	Critical Vol./Cap.(X):	0.492
Loss Time (sec):	12	Average Delay (sec/veh):	10.9
Optimal Cycle:	40	Level Of Service:	B

Street Name:	Micke Grove Road/Holman Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:	PM Peak Hour											
Base Vol:	0	0	0	18	0	8	6	767	0	0	861	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	18	0	8	6	767	0	0	861	11
Added Vol:	58	0	0	0	0	58	51	161	84	0	171	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	58	0	0	18	0	66	57	928	84	0	1032	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	63	0	0	20	0	72	62	1009	91	0	1122	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	63	0	0	20	0	72	62	1009	91	0	1122	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	63	0	0	20	0	72	62	1009	91	0	1122	12
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	1.00	0.93	1.00	0.83	0.93	0.93	0.83	1.00	0.93	0.83
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1769	1900	1900	1769	1900	1583	1769	3538	1583	1900	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.00	0.01	0.00	0.05	0.04	0.29	0.06	0.00	0.32	0.01
Crit Moves:	****					****	****				****	
Green/Cycle:	0.07	0.00	0.00	0.16	0.00	0.09	0.07	0.72	0.72	0.00	0.64	0.64
Volume/Cap:	0.49	0.00	0.00	0.07	0.00	0.49	0.49	0.40	0.08	0.00	0.49	0.01
Delay/Veh:	47.6	0.0	0.0	35.4	0.0	45.8	47.7	5.8	4.3	0.0	9.4	6.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.6	0.0	0.0	35.4	0.0	45.8	47.7	5.8	4.3	0.0	9.4	6.4
LOS by Move:	D	A	A	D	A	D	D	A	A	A	A	A
HCM2k95thQ:	128	0	0	26	0	138	127	90	11	0	220	3

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	1 0	1		1 0	1 0	1		1 0	2 0	1		1 0	2 0	1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	1	1		1	1	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		xxxx	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	xxxxx		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
Hev Veh Adj:	0.98	xxxx	xxxxx		0.98	xxxx	0.98		0.98	0.98	0.98		xxxx	0.98	0.98	
Grade Adj:	1.00	xxxx	xxxxx		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
Parking Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	xxxx	xxxxx		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
RT Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		xxxx	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	1.00	1.00		0.93	1.00	0.83		0.93	0.98	0.83		1.00	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	1.00	1.00		0.93	1.00	0.83		0.93	0.93	0.83		1.00	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	0.00		1.00	0.00	1.00		1.00	1.00	1.00		0.00	1.00	1.00	

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.07	0.00	0.00	0.16	0.00	0.09	0.07	0.72	0.72	0.00	0.64	0.64				
ArrivalType:	4				4			4			4					
ProgFactor:	0.99	1.00	1.00	0.94	1.00	0.98	0.99	0.19	0.17	1.00	0.47	0.40				
Q1:	1.7	0.0	0.0	0.4	0.0	1.9	1.6	1.1	0.1	0.0	4.0	0.0				
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.75				
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.58				
EarlyArrAdj:	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.48	0.43				
Q2:	0.9	0.0	0.0	0.1	0.0	0.9	0.9	0.7	0.1	0.0	0.5	0.0				
HCM2KQueue:	2.5	0.0	0.0	0.5	0.0	2.7	2.5	1.8	0.2	0.0	4.5	0.1				
70th%Factor:	1.19	1.20	1.20	1.20	1.20	1.19	1.19	1.20	1.20	1.20	1.19	1.20				
HCM2k70thQ:	3.0	0.0	0.0	0.6	0.0	3.3	3.0	2.1	0.3	0.0	5.3	0.1				
85th%Factor:	1.58	1.60	1.60	1.60	1.60	1.57	1.58	1.58	1.60	1.60	1.56	1.60				
HCM2k85thQ:	4.0	0.0	0.0	0.8	0.0	4.3	4.0	2.8	0.3	0.0	7.0	0.1				
90th%Factor:	1.75	1.80	1.80	1.79	1.80	1.75	1.75	1.77	1.80	1.80	1.72	1.80				
HCM2k90thQ:	4.4	0.0	0.0	0.9	0.0	4.8	4.4	3.1	0.4	0.0	7.7	0.1				
95th%Factor:	2.02	2.10	2.10	2.08	2.10	2.02	2.02	2.04	2.09	2.10	1.97	2.10				
HCM2k95thQ:	5.1	0.0	0.0	1.0	0.0	5.5	5.1	3.6	0.4	0.0	8.8	0.1				
98th%Factor:	2.52	2.70	2.70	2.66	2.70	2.51	2.52	2.57	2.68	2.70	2.41	2.70				
HCM2k98thQ:	6.4	0.0	0.0	1.3	0.0	6.9	6.3	4.5	0.6	0.0	10.8	0.1				

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Average Delay (sec/veh): 7.8 Worst Case Level Of Service: B[12.8]

Street Name:	SR 99 West Frontage Rd								SR 99 SB Ramps (Eight Mile Rd)							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	1 0	0	1	0	0 0	0	0	0	0 0	1	0	0	0 1
Volume Module:	PM Peak Hour															
Base Vol:	0	112	7		257	143	0		0	0	0		26	0	318	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	112	7		257	143	0		0	0	0		26	0	318	
Added Vol:	0	0	0		125	0	0		0	0	0		0	0	17	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	112	7		382	143	0		0	0	0		26	0	335	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	0	122	8		415	155	0		0	0	0		28	0	364	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	122	8		415	155	0		0	0	0		28	0	364	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx		xxxxx	xxxx	xxxxx		6.4	xxxx	6.2	
FollowUpTim:	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx		xxxxx	xxxx	xxxxx		3.5	xxxx	3.3	
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx		129	xxxx	xxxxx		xxxx	xxxx	xxxxx		1111	xxxx	126	
Potent Cap.:	xxxx	xxxx	xxxxx		1456	xxxx	xxxxx		xxxx	xxxx	xxxxx		231	xxxx	925	
Move Cap.:	xxxx	xxxx	xxxxx		1456	xxxx	xxxxx		xxxx	xxxx	xxxxx		165	xxxx	925	
Volume/Cap:	xxxx	xxxx	xxxx		0.29	xxxx	xxxx		xxxx	xxxx	xxxx		0.17	xxxx	0.39	
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx		29.6	xxxx	xxxxx		xxxx	xxxx	xxxxx		15.0	xxxx	47.4	
Control Del:	xxxxx	xxxx	xxxxx		8.5	xxxx	xxxxx		xxxxx	xxxx	xxxxx		31.4	xxxx	11.4	
LOS by Move:	*	*	*		A	*	*		*	*	*		D	*	B	
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		1.2	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		8.5	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		A	*	*		*	*	*		*	*	*	
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				12.8			
ApproachLOS:	*				*				*				B			

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HevVeh:		2%				2%				2%				2%		
Grade:		0%				0%				0%				0%		
Peds/Hour:		0				0				0				0		
Pedestrian Walk Speed: 4.00 feet/sec																
LaneWidth:		12 feet				12 feet				12 feet				12 feet		
Time Period: 0.25 hour																
Upstream Signals:																
Link Index:		#218				#183										
Dist(miles):		0.250				0.250										
Speed (mph):		1.00				1.00										
SignalIndex:		#22				#12										
Cycle Time:		100 secs				100 secs										
InitVolume:	252	15			116	40										
Saturation:	1769	890			1769	999										
ArrivalType:	4	4			4	4										
G/C:	0.18	0.28			0.11	0.06										
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection																
P:	0.238	0.368			0.146	0.077										
gq1:	10.86	1.06			5.60	3.70										
gq2:	2.54	0.02			0.54	0.21										
gq:	13.40	1.09			6.14	3.90										
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons																
alpha:		0.550				0.550										
beta:		0.645				0.645										
ta (secs):		900.000				900.000										
F:		0.003				0.003										
f:	0.484	1.000			1.000	1.000										
vcmax:	35	3			34	12										
vcg:	37	4			35	12										
vcmin:	1000	1000			1000	1000										
tp:	0.0	0.0			0.0	0.0										
p:		0.000				0.000										
*** Computation 3: Platoon Event Periods																
pdom/psubo:		0.000/0.000/Unconstrained														
*** Computation 4: Conflicting Flows During Each Unblocked Period																
InitCnflVol:	0	xxxxx	xxxxx	129	xxxxx	xxxxx	1293	1115	155	1111	1111	126				
AdjCnflVol:	0	xxxxx	xxxxx	129	xxxxx	xxxxx	1293	1115	155	1111	1111	126				
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000				
ConflictVol:	0	xxxxx	xxxxx	129	xxxxx	xxxxx	1293	1115	155	1111	1111	126				
*** Computation 5: Capacity for Subject Movement During Unblocked Period																
InitPotCap:	1623	xxxxx	xxxxx	1456	xxxxx	xxxxx	140	208	890	231	209	925				
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000				
Potent Cap.:	1623	xxxxx	xxxxx	1456	xxxxx	xxxxx	140	208	890	231	209	925				

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Average Delay (sec/veh): 24.8 Worst Case Level Of Service: F[62.0]

Street Name:	SR 99 East Frontage Rd								SR 99 NB Ramps (Eight Mile Rd)							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Volume Module:PM Peak Hour																				
Base Vol:	60	234	0	0	204	173	266	0	50	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	60	234	0	0	204	173	266	0	50	0	0	0				
Added Vol:	0	0	0	0	0	15	129	0	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	60	234	0	0	204	188	395	0	50	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92				
PHF Volume:	65	254	0	0	222	204	429	0	54	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	65	254	0	0	222	204	429	0	54	0	0	0				
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx				
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	426	xxxx	xxxxx	xxxx	xxxx	xxxxx	607	xxxx	222	xxxx	xxxx	xxxxx				
Potent Cap.:	1133	xxxx	xxxxx	xxxx	xxxx	xxxxx	460	xxxx	818	xxxx	xxxx	xxxxx				
Move Cap.:	1133	xxxx	xxxxx	xxxx	xxxx	xxxxx	439	xxxx	818	xxxx	xxxx	xxxxx				
Volume/Cap:	0.06	xxxx	xxxx	xxxx	xxxx	xxxx	0.98	xxxx	0.07	xxxx	xxxx	xxxx				
Level Of Service Module:																
2Way95thQ:	4.6	xxxx	xxxxx	xxxx	xxxx	xxxxx	303	xxxx	5.3	xxxx	xxxx	xxxxx				
Control Del:	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	68.6	xxxx	9.7	xxxxx	xxxx	xxxxx				
LOS by Move:	A	*	*	*	*	*	F	*	A	*	*	*				
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT				
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*				
ApproachDel:	xxxxxx			xxxxxx			62.0			xxxxxx						
ApproachLOS:	*			*			F			*						

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

```
Intersection #15 SR99 E Front & NB Ramps 8 Mile
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------|----------------|----------------|----------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:       #222             #188
Dist(miles):      0.250            0.250
Speed (mph):       1.00             1.00
SignalIndex:      #23              #13
Cycle Time:         100 secs         100 secs
InitVolume:   327    48         41    22
Saturation:  1165   810       1769  1348
ArrivalType:    4     4          4     4
G/C:         0.31  0.22       0.03  0.06
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:          0.411 0.287      0.046 0.085
gq1:        16.54  4.23       2.21  1.49
gq2:         9.90  0.36       0.07  0.03
gq:         26.44  4.59       2.28  1.53
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:            0.550            0.550
beta:             0.645            0.645
ta (secs):       900.000          900.000
F:                0.003            0.003
f:          0.852 1.000      1.000 1.000
vcmax:         79    12         13     6
vcg:           83    14         13     7
vcmin:       1000  1000       1000  1000
tp:           0.0   0.0        0.0   0.0
p:                0.000            0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol: 426 xxxxx xxxxx    0 xxxxx xxxxx  607   607   222  736   811   254
AdjCnflVol:  426 xxxxx xxxxx    0 xxxxx xxxxx  607   607   222  736   811   254
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol: 426 xxxxx xxxxx    0 xxxxx xxxxx  607   607   222  736   811   254
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1133 xxxxx xxxxx 1623 xxxxx xxxxx  460   411   818  335   314   784
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1133 xxxxx xxxxx 1623 xxxxx xxxxx  460   411   818  335   314   784
```


EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

```
Intersection #16 West & L.C.MarkTaylor/Marlette
Cycle (sec):         100                Critical Vol./Cap.(X):         0.567
Loss Time (sec):       9                Average Delay (sec/veh):        11.2
Optimal Cycle:        38                Level Of Service:                  B
Street Name:            West Lane               Lt.Col.Mark Taylor/Marlette Rd
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------||---------------||---------------||---------------||---------------|
Control:        Protected        Protected       Split Phase      Split Phase
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        0  0  2  0  1    1  0  2  0  0    0  0  0  0  0    1  0  0  0  1
------------||---------------||---------------||---------------||---------------|
Volume Module:PM Peak Hour
Base Vol:       0  997     0     0  846     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  997     0     0  846     0     0    0     0     0    0     0
Added Vol:      0  212   135    55   81     0     0    0     0   180    0     6
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0 1209   135    55  927     0     0    0     0   180    0     6
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0 1314   147    60 1008     0     0    0     0   196    0     7
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0 1314   147    60 1008     0     0    0     0   196    0     7
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:    0 1314   147    60 1008     0     0    0     0   196    0     7
------------||---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 0.93  0.83  0.93 0.93  1.00  1.00 1.00  1.00  0.93 1.00  0.83
Lanes:       0.00 2.00  1.00  1.00 2.00  0.00  0.00 0.00  0.00  1.00 0.00  1.00
Final Sat.:     0 3538  1583  1769 3538     0     0    0     0  1769    0  1583
------------||---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.37  0.09  0.03 0.28  0.00  0.00 0.00  0.00  0.11 0.00  0.00
Crit Moves:        ****        ****                                ****
Green/Cycle: 0.00 0.66  0.66  0.06 0.71  0.00  0.00 0.00  0.00  0.20 0.00  0.20
Volume/Cap:  0.00 0.57  0.14  0.57 0.40  0.00  0.00 0.00  0.00  0.57 0.00  0.02
Delay/Veh:    0.0  9.8   6.6  52.8  5.8   0.0   0.0  0.0   0.0  38.6  0.0  32.6
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  9.8   6.6  52.8  5.8   0.0   0.0  0.0   0.0  38.6  0.0  32.6
LOS by Move:    A    A     A     D    A     A     A    A     A     D    A     C
HCM2k95thQ:     0  294    39    89   74     0     0    0     0   287    0     8
Note: Queue reported is the distance per lane in feet.
```

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #16 West & L.C.MarkTaylor/Marlette

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        0  0  2  0  1    1  0  2  0  0    0  0  0  0  0    1  0  0  0  1
Lane Group:  xxxx   T     R     L    T   xxxx  xxxx xxxx  xxxx    L  xxxx    R
#LnsInGrps:     0    2     1     1    2     0     0    0     0     1    0     1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:          8                8                8                8
% Hev Veh:            2                2                2                2
Grade:               0%               0%               0%               0%
Parking/Hr:          No               No               No               No
Bus Stp/Hr:           0                0                0                0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:          0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:           0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:  xxxx xxxx  xxxx     1 xxxx  xxxx  xxxx xxxx  xxxx     1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  xxxx 1.00  1.00  1.00 1.00 xxxxx  xxxx xxxx xxxxx  1.00 xxxx  1.00
Hev Veh Adj: xxxx 0.98  0.98  0.98 0.98 xxxxx  xxxx xxxx xxxxx  0.98 xxxx  0.98
Grade Adj:   xxxx 1.00  1.00  1.00 1.00 xxxxx  xxxx xxxx xxxxx  1.00 xxxx  1.00
Parking Adj: xxxx xxxx  1.00  xxxx 1.00 xxxxx  xxxx xxxx xxxxx  xxxx xxxx  1.00
Bus Stp Adj: xxxx xxxx  1.00  xxxx 1.00 xxxxx  xxxx xxxx xxxxx  xxxx xxxx  1.00
Area Adj:    xxxx 1.00  1.00  1.00 1.00 xxxxx  xxxx xxxx xxxxx  1.00 xxxx  1.00
RT Adj:      xxxx xxxx  0.85  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx  0.85
LT Adj:      xxxx xxxx xxxxx  0.95 xxxx xxxxx  xxxx xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 1.00 0.98  0.83  0.93 0.98  1.00  1.00 1.00  1.00  0.93 1.00  0.83
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 0.95  1.00  1.00 0.95  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Fnl Sat Adj: 1.00 0.93  0.83  0.93 0.93  1.00  1.00 1.00  1.00  0.93 1.00  0.83
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  0.00 1.00  1.00  1.00 1.00  0.00  0.00 0.00  0.00  1.00 0.00  1.00
```


EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #16 West & L.C.MarkTaylor/Marlette

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Green/Cycle: 0.00 0.66  0.66  0.06 0.71  0.00  0.00 0.00  0.00  0.20 0.00  0.20
ArrivalType:         4                4                4                4
ProgFactor:  1.00 0.46  0.38  0.99 0.19  1.00  1.00 1.00  1.00  0.96 1.00  0.92
Q1:           0.0  4.8   0.6   1.6  1.1   0.0   0.0  0.0   0.0   4.7  0.0   0.1
UpstreamVC:  0.00 0.00  0.00  0.77 0.77  0.00  0.00 0.00  0.00  0.00 0.00  0.00
UpstreamAdj: 0.00 0.00  0.00  0.55 0.55  0.00  0.00 0.00  0.00  0.00 0.00  0.00
EarlyArrAdj: 0.00 1.00  1.00  0.10 0.48  0.00  0.00 0.00  0.00  1.00 0.00  1.00
Q2:           0.0  1.3   0.2   0.1  0.3   0.0   0.0  0.0   0.0   1.2  0.0   0.0
HCM2KQueue:   0.0  6.1   0.8   1.7  1.4   0.0   0.0  0.0   0.0   5.9  0.0   0.2
------------|---------------||---------------||---------------||---------------|
70th%Factor: 1.20 1.19  1.20  1.20 1.20  1.20  1.20 1.20  1.20  1.19 1.20  1.20
HCM2k70thQ:   0.0  7.2   0.9   2.1  1.7   0.0   0.0  0.0   0.0   7.1  0.0   0.2
------------|---------------||---------------||---------------||---------------|
85th%Factor: 1.60 1.54  1.59  1.58 1.59  1.60  1.60 1.60  1.60  1.55 1.60  1.60
HCM2k85thQ:   0.0  9.4   1.2   2.7  2.3   0.0   0.0  0.0   0.0   9.2  0.0   0.2
------------|---------------||---------------||---------------||---------------|
90th%Factor: 1.80 1.69  1.79  1.77 1.77  1.80  1.80 1.80  1.80  1.70 1.80  1.80
HCM2k90thQ:   0.0 10.3   1.3   3.1  2.5   0.0   0.0  0.0   0.0  10.1  0.0   0.3
------------|---------------||---------------||---------------||---------------|
95th%Factor: 2.10 1.93  2.08  2.04 2.05  2.10  2.10 2.10  2.10  1.93 2.10  2.09
HCM2k95thQ:   0.0 11.8   1.6   3.5  2.9   0.0   0.0  0.0   0.0  11.5  0.0   0.3
------------|---------------||---------------||---------------||---------------|
98th%Factor: 2.70 2.33  2.64  2.58 2.60  2.70  2.70 2.70  2.70  2.33 2.70  2.69
HCM2k98thQ:   0.0 14.2   2.0   4.5  3.7   0.0   0.0  0.0   0.0  13.9  0.0   0.4
```

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

Cycle (sec):	100	Critical Vol./Cap.(X):	0.412
Loss Time (sec):	12	Average Delay (sec/veh):	29.5
Optimal Cycle:	36	Level Of Service:	C

Street Name:	Holman Road											Lt. Col. Mark Taylor Street											
Approach:	North Bound				South Bound				East Bound				West Bound										
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected							
Rights:	Include					Include					Include					Include							
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0					
Y+R:	4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0					
Lanes:	1	0	2	0	1	1	0	3	0	1	1	0	1	0	1	1	0	0	1	0			
Volume Module:	PM Peak Hour																						
Base Vol:	145	202	208			11	157	7			14	178	142			177	134	8					
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00					
Initial Bse:	145	202	208			11	157	7			14	178	142			177	134	8					
Added Vol:	0	16	0			0	48	0			0	0	0			0	0	0					
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0					
Initial Fut:	145	218	208			11	205	7			14	178	142			177	134	8					
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00					
PHF Adj:	0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92					
PHF Volume:	158	237	226			12	223	8			15	193	154			192	146	9					
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0					
Reduced Vol:	158	237	226			12	223	8			15	193	154			192	146	9					
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00					
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00					
FinalVolume:	158	237	226			12	223	8			15	193	154			192	146	9					
Saturation Flow Module:																							
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900					
Adjustment:	0.93	0.93	0.83			0.93	0.89	0.83			0.93	0.98	0.83			0.93	0.97	0.97					
Lanes:	1.00	2.00	1.00			1.00	3.00	1.00			1.00	1.00	1.00			1.00	0.94	0.06					
Final Sat.:	1769	3538	1583			1769	5083	1583			1769	1862	1583			1769	1743	104					
Capacity Analysis Module:																							
Vol/Sat:	0.09	0.07	0.14			0.01	0.04	0.00			0.01	0.10	0.10			0.11	0.08	0.08					
Crit Moves:			****			****						****				****							
Green/Cycle:	0.24	0.35	0.35			0.02	0.12	0.12			0.05	0.25	0.25			0.26	0.47	0.47					
Volume/Cap:	0.37	0.19	0.41			0.41	0.37	0.04			0.18	0.41	0.39			0.41	0.18	0.18					
Delay/Veh:	31.9	22.9	25.4			57.9	40.9	39.0			46.7	31.8	31.6			31.0	15.5	15.5					
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00					
AdjDel/Veh:	31.9	22.9	25.4			57.9	40.9	39.0			46.7	31.8	31.6			31.0	15.5	15.5					
LOS by Move:	C	C	C			E	D	D			D	C	C			C	B	B					
HCM2k95thQ:	180	111	222			46	130	12			23	220	176			232	103	103					

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																									
Lanes:	1	0	2	0	1	1	0	3	0	1	1	0	1	0	1	1	0	0	1	0					
Lane Group:	L		T		R	L		T		R	L		T		R	L		RT		RT					
#LnsInGrps:	1		2		1	1		3		1	1		1		1	1		1		1					
HCM Ops Input Saturation Adj Module:																									
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12					
CrsswalkWid:			8					8					8					8							
% Hev Veh:			2					2					2					2							
Grade:			0%					0%					0%					0%							
Parking/Hr:			No					No					No					No							
Bus Stp/Hr:			0					0					0					0							
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																								
Cnft Ped/Hr:			0					0					0					0							
ExclusiveRT:			Include					Include					Include					Include							
% RT Prtct:			0					0					0					0							
HCM Ops f(lt) Adj Case Module:																									
f(lt) Case:	1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx							
HCM Ops Saturation Adj Module:																									
Ln Wid Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00							
Hev Veh Adj:	0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98							
Grade Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00							
Parking Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00							
Bus Stp Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00							
Area Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00							
RT Adj:	xxxx	xxxx	0.85			xxxx	xxxx	0.85			xxxx	xxxx	0.85			xxxx	0.99	0.99							
LT Adj:	0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx							
PedBike Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00							
HCM Sat Adj:	0.93	0.98	0.83			0.93	0.98	0.83			0.93	0.98	0.83			0.93	0.97	0.97							
Usr Sat Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00							
MLF Sat Adj:	1.00	0.95	1.00			1.00	0.91	1.00			1.00	1.00	1.00			1.00	1.00	1.00							
Fnl Sat Adj:	0.93	0.93	0.83			0.93	0.89	0.83			0.93	0.98	0.83			0.93	0.97	0.97							
Delay Adjustment Factor Module:																									
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																								
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																								
DelAdjFctr:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00							

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.24	0.35	0.35	0.02	0.12	0.12	0.05	0.25	0.25	0.26	0.47	0.47
ArrivalType:		4			4			4			4	
ProgFactor:	0.92	0.84	0.87	1.00	0.97	0.96	0.99	0.92	0.92	0.92	0.73	0.73
Q1:	3.4	2.0	4.2	0.3	2.0	0.2	0.4	4.1	3.3	4.0	1.8	1.8
UpstreamVC:	0.16	0.16	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.99	0.99	0.99	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
EarlyArrAdj:	0.44	0.56	0.51	1.00	1.00	1.00	0.17	0.47	0.42	1.00	1.00	1.00
Q2:	0.3	0.1	0.4	0.6	0.6	0.0	0.0	0.3	0.3	0.7	0.2	0.2
HCM2KQueue:	3.6	2.2	4.5	0.9	2.6	0.2	0.4	4.5	3.5	4.7	2.0	2.0
70th%Factor:	1.19	1.19	1.19	1.20	1.19	1.20	1.20	1.19	1.19	1.19	1.20	1.20
HCM2k70thQ:	4.3	2.6	5.4	1.1	3.1	0.3	0.5	5.3	4.2	5.6	2.4	2.4
85th%Factor:	1.57	1.58	1.56	1.59	1.58	1.60	1.60	1.56	1.57	1.56	1.58	1.58
HCM2k85thQ:	5.6	3.4	7.0	1.4	4.1	0.4	0.7	7.0	5.5	7.4	3.2	3.2
90th%Factor:	1.73	1.76	1.72	1.78	1.75	1.80	1.79	1.72	1.74	1.72	1.76	1.76
HCM2k90thQ:	6.3	3.8	7.8	1.6	4.5	0.4	0.8	7.7	6.1	8.1	3.6	3.6
95th%Factor:	1.99	2.03	1.97	2.07	2.02	2.09	2.09	1.97	1.99	1.96	2.04	2.04
HCM2k95thQ:	7.2	4.4	8.9	1.8	5.2	0.5	0.9	8.8	7.0	9.3	4.1	4.1
98th%Factor:	2.46	2.55	2.41	2.63	2.52	2.68	2.67	2.41	2.46	2.39	2.56	2.56
HCM2k98thQ:	8.9	5.5	10.9	2.3	6.5	0.6	1.2	10.8	8.7	11.3	5.2	5.2

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.663
Loss Time (sec): 12 Average Delay (sec/veh): 27.2
Optimal Cycle: 55 Level Of Service: C

Street Name:	West Lane						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 2	0 1	2	0 2	0 1	2	0 3	0 1	2	0 3	0 1
Volume Module:	PM Peak Hour											
Base Vol:	82	674	250	266	580	30	41	54	56	296	55	198
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	82	674	250	266	580	30	41	54	56	296	55	198
Added Vol:	0	267	0	39	208	13	17	0	0	27	2	63
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	82	941	250	305	788	43	58	54	56	323	57	261
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	89	1023	272	332	857	47	63	59	61	351	62	284
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	1023	272	332	857	47	63	59	61	351	62	284
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	1023	272	332	857	47	63	59	61	351	62	284
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	5083	1583	3432	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.29	0.17	0.10	0.24	0.03	0.02	0.01	0.04	0.10	0.01	0.18
Crit Moves:		****		****			****					****
Green/Cycle:	0.06	0.44	0.44	0.15	0.53	0.53	0.03	0.08	0.08	0.22	0.27	0.27
Volume/Cap:	0.46	0.66	0.39	0.66	0.46	0.06	0.66	0.14	0.47	0.47	0.05	0.66
Delay/Veh:	47.4	23.5	19.6	43.7	15.0	11.6	64.3	42.8	46.6	34.7	27.0	36.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.4	23.5	19.6	43.7	15.0	11.6	64.3	42.8	46.6	34.7	27.0	36.3
LOS by Move:	D	C	B	D	B	B	E	D	D	C	C	D
HCM2k95thQ:	101	544	232	294	306	24	108	37	122	245	24	394

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0 1	2	0	2	0 1	2	0	3	0 1	2	0	3	0 1
Lane Group:	L		T	R	L		T	R	L		T	R	L		T	R
#LnsInGrps:	2		2	1	2		2	1	2		3	1	2		3	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.06	0.44	0.44		0.15	0.53	0.53		0.03	0.08	0.08		0.22	0.27	0.27	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.86	0.80		0.98	0.71	0.64		1.00	0.97	0.98		0.94	0.88	0.95	
Q1:	1.2	10.2	4.1		4.4	5.5	0.4		0.9	0.5	1.6		4.1	0.4	6.6	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.8	1.9	0.6		1.7	0.8	0.1		1.2	0.2	0.8		0.9	0.0	1.8	
HCM2KQueue:	2.0	12.0	4.7		6.1	6.4	0.5		2.1	0.7	2.4		5.0	0.5	8.4	
70th%Factor:	1.20	1.17	1.19		1.19	1.19	1.20		1.19	1.20	1.19		1.19	1.20	1.18	
HCM2k70thQ:	2.4	14.1	5.6		7.2	7.6	0.6		2.5	0.8	2.9		5.9	0.5	9.9	
85th%Factor:	1.58	1.50	1.56		1.54	1.54	1.60		1.58	1.59	1.58		1.55	1.60	1.53	
HCM2k85thQ:	3.1	18.1	7.4		9.4	9.8	0.7		3.4	1.1	3.8		7.8	0.7	12.8	
90th%Factor:	1.76	1.62	1.72		1.69	1.69	1.79		1.76	1.79	1.75		1.71	1.79	1.66	
HCM2k90thQ:	3.5	19.5	8.1		10.3	10.8	0.8		3.7	1.3	4.2		8.6	0.8	14.0	
95th%Factor:	2.04	1.81	1.96		1.93	1.92	2.08		2.03	2.08	2.02		1.95	2.08	1.88	
HCM2k95thQ:	4.1	21.8	9.3		11.7	12.3	1.0		4.3	1.5	4.9		9.8	1.0	15.8	
98th%Factor:	2.56	2.10	2.39		2.33	2.31	2.66		2.55	2.65	2.53		2.38	2.67	2.22	
HCM2k98thQ:	5.1	25.3	11.3		14.2	14.8	1.2		5.4	1.9	6.1		11.9	1.2	18.7	

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.524
Loss Time (sec):	12	Average Delay (sec/veh):	32.4
Optimal Cycle:	42	Level Of Service:	C

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:	PM Peak Hour											
Base Vol:	193	192	202	100	139	91	122	355	161	231	501	200
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	193	192	202	100	139	91	122	355	161	231	501	200
Added Vol:	4	13	0	0	12	35	3	22	2	0	38	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	197	205	202	100	151	126	125	377	163	231	539	200
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	214	223	220	109	164	137	136	410	177	251	586	217
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	214	223	220	109	164	137	136	410	177	251	586	217
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	214	223	220	109	164	137	136	410	177	251	586	217
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.12	0.04	0.14	0.06	0.03	0.09	0.08	0.08	0.11	0.14	0.12	0.14
Crit Moves:	****					****			****	****		
Green/Cycle:	0.23	0.27	0.27	0.12	0.17	0.17	0.17	0.21	0.21	0.27	0.31	0.31
Volume/Cap:	0.52	0.16	0.51	0.51	0.20	0.52	0.44	0.38	0.52	0.52	0.37	0.44
Delay/Veh:	34.9	27.6	31.5	43.1	36.1	40.1	38.0	33.9	36.3	32.1	27.0	28.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.9	27.6	31.5	43.1	36.1	40.1	38.0	33.9	36.3	32.1	27.0	28.2
LOS by Move:	C	C	C	D	D	D	D	C	D	C	C	C
HCM2k95thQ:	254	81	246	152	74	183	198	195	253	276	210	220

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	3 0	1	1	1 0	3 0	1	1	1 0	3 0	1	1	1 0	3 0	1	1
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	3	1		1	3	1		1	3	1		1	3	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.23	0.27	0.27		0.12	0.17	0.17		0.17	0.21	0.21		0.27	0.31	0.31	
ArrivalType:		4				4				4				4		
ProgFactor:	0.94	0.89	0.92		0.98	0.94	0.96		0.96	0.94	0.95		0.93	0.89	0.90	
Q1:	4.9	1.5	4.7		2.8	1.4	3.4		3.2	3.3	4.1		5.5	4.1	4.3	
UpstreamVC:	0.69	0.69	0.69		0.37	0.37	0.37		0.00	0.00	0.00		0.87	0.87	0.87	
UpstreamAdj:	0.66	0.66	0.66		0.94	0.94	0.94		0.00	0.00	0.00		0.38	0.38	0.38	
EarlyArrAdj:	0.29	0.33	0.30		0.27	0.34	0.31		1.00	1.00	1.00		0.18	0.20	0.18	
Q2:	0.3	0.1	0.3		0.3	0.1	0.3		0.8	0.6	1.0		0.2	0.1	0.1	
HCM2KQueue:	5.2	1.6	5.0		3.0	1.4	3.7		4.0	3.9	5.2		5.7	4.2	4.5	
70th%Factor:	1.19	1.20	1.19		1.19	1.20	1.19		1.19	1.19	1.19		1.19	1.19	1.19	
HCM2k70thQ:	6.2	1.9	6.0		3.6	1.7	4.4		4.8	4.7	6.2		6.8	5.1	5.3	
85th%Factor:	1.55	1.58	1.55		1.57	1.59	1.57		1.56	1.56	1.55		1.55	1.56	1.56	
HCM2k85thQ:	8.1	2.5	7.8		4.8	2.3	5.8		6.2	6.2	8.1		8.8	6.6	7.0	
90th%Factor:	1.71	1.77	1.71		1.74	1.77	1.73		1.73	1.73	1.71		1.70	1.72	1.72	
HCM2k90thQ:	8.9	2.8	8.6		5.3	2.6	6.4		6.9	6.8	8.9		9.7	7.3	7.7	
95th%Factor:	1.95	2.05	1.95		2.01	2.05	1.99		1.98	1.98	1.95		1.94	1.97	1.97	
HCM2k95thQ:	10.2	3.3	9.9		6.1	3.0	7.3		7.9	7.8	10.1		11.0	8.4	8.8	
98th%Factor:	2.37	2.58	2.38		2.49	2.59	2.45		2.44	2.44	2.37		2.35	2.42	2.41	
HCM2k98thQ:	12.4	4.1	12.0		7.6	3.7	9.0		9.7	9.6	12.3		13.4	10.3	10.8	

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 SR99 W Front & SB Ramps Morada

Average Delay (sec/veh): 10.7 Worst Case Level Of Service: C[24.2]

Street Name:	SR 99 West Frontage Rd								SR 99 SB Ramps (Morada Lane)							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	1 0	0	1	0	0 0	0	0	0	0 0	1	0	0	0 1
Volume Module:	PM Peak Hour															
Base Vol:	0	73	290		30	101	0		0	0	0		372	0	16	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	73	290		30	101	0		0	0	0		372	0	16	
Added Vol:	0	0	22		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	73	312		30	101	0		0	0	0		372	0	16	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	0	79	339		33	110	0		0	0	0		404	0	17	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	79	339		33	110	0		0	0	0		404	0	17	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx		xxxxx	xxxx	xxxxx		6.4	xxxx	6.2	
FollowUpTim:	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx		xxxxx	xxxx	xxxxx		3.5	xxxx	3.3	
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx		418	xxxx	xxxxx		xxxx	xxxx	xxxxx		424	xxxx	249	
Potent Cap.:	xxxx	xxxx	xxxxx		1141	xxxx	xxxxx		xxxx	xxxx	xxxxx		587	xxxx	790	
Move Cap.:	xxxx	xxxx	xxxxx		1141	xxxx	xxxxx		xxxx	xxxx	xxxxx		574	xxxx	790	
Volume/Cap:	xxxx	xxxx	xxxx		0.03	xxxx	xxxx		xxxx	xxxx	xxxx		0.70	xxxx	0.02	
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx		2.2	xxxx	xxxxx		xxxx	xxxx	xxxxx		141	xxxx	1.7	
Control Del:	xxxxx	xxxx	xxxxx		8.2	xxxx	xxxxx		xxxxx	xxxx	xxxxx		24.9	xxxx	9.7	
LOS by Move:	*	*	*		A	*	*		*	*	*		C	*	A	
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		0.1	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		8.2	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		A	*	*		*	*	*		*	*	*	
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				24.2			
ApproachLOS:	*				*				*				C			

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #20 SR99 W Front & SB Ramps Morada

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HevVeh:	2%				2%				2%				2%			
Grade:	0%				0%				0%				0%			
Peds/Hour:	0				0				0				0			
Pedestrian Walk Speed: 4.00 feet/sec																
LaneWidth:	12 feet				12 feet				12 feet				12 feet			
Time Period: 0.25 hour																
Upstream Signals:																
Link Index:	#218				#183											
Dist(miles):	0.250				0.250											
Speed (mph):	1.00				1.00											
SignalIndex:	#22				#12											
Cycle Time:	100 secs				100 secs											
InitVolume:	252	15			116	40										
Saturation:	1769	890			1769	999										
ArrivalType:	4	4			4	4										
G/C:	0.18	0.28			0.11	0.06										
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection																
P:	0.238	0.368			0.146	0.077										
gq1:	10.86	1.06			5.60	3.70										
gq2:	2.54	0.02			0.54	0.21										
gq:	13.40	1.09			6.14	3.90										
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons																
alpha:	0.550				0.550											
beta:	0.645				0.645											
ta (secs):	900.000				900.000											
F:	0.003				0.003											
f:	1.000	1.000			0.913	1.000										
vcmax:	73	3			31	12										
vcg:	76	4			32	12										
vcmin:	1000	1000			1000	1000										
tp:	0.0	0.0			0.0	0.0										
p:	0.000				0.000											
*** Computation 3: Platoon Event Periods																
pdom/psubo:	0.000/0.000/Unconstrained															
*** Computation 4: Conflicting Flows During Each Unblocked Period																
InitCnflVol:	0	xxxxx	xxxxx	418	xxxxx	xxxxx	433	593	110	424	424	249				
AdjCnflVol:	0	xxxxx	xxxxx	418	xxxxx	xxxxx	433	593	110	424	424	249				
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000				
ConflictVol:	0	xxxxx	xxxxx	418	xxxxx	xxxxx	433	593	110	424	424	249				
*** Computation 5: Capacity for Subject Movement During Unblocked Period																
InitPotCap:	1623	xxxxx	xxxxx	1141	xxxxx	xxxxx	533	418	944	587	522	790				
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000				
Potent Cap.:	1623	xxxxx	xxxxx	1141	xxxxx	xxxxx	533	418	944	587	522	790				

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #21 SR99 E Front & NB Ramps Morada

Average Delay (sec/veh): 17.0 Worst Case Level Of Service: D[31.4]

Street Name:	SR 99 East Frontage Rd								SR 99 NB Ramps (Morada Lane)							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	1	0	0	0	0	0	0	1	0	1	0	0	1	0	0
Volume Module:PM Peak Hour																
Base Vol:	190	223	0	0	262	13	120	0	547	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	190	223	0	0	262	13	120	0	547	0	0	0				
Added Vol:	0	0	0	0	0	0	0	0	38	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	190	223	0	0	262	13	120	0	585	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92				
PHF Volume:	207	242	0	0	285	14	130	0	636	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	207	242	0	0	285	14	130	0	636	0	0	0				
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx				
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	299	xxxx	xxxxx	xxxx	xxxx	xxxxx	947	xxxx	292	xxxx	xxxx	xxxxx				
Potent Cap.:	1262	xxxx	xxxxx	xxxx	xxxx	xxxxx	290	xxxx	747	xxxx	xxxx	xxxxx				
Move Cap.:	1262	xxxx	xxxxx	xxxx	xxxx	xxxxx	249	xxxx	747	xxxx	xxxx	xxxxx				
Volume/Cap:	0.16	xxxx	xxxx	xxxx	xxxx	xxxx	0.52	xxxx	0.85	xxxx	xxxx	xxxx				
Level Of Service Module:																
2Way95thQ:	14.6	xxxx	xxxxx	xxxx	xxxx	xxxxx	69.7	xxxx	249.3	xxxx	xxxx	xxxxx				
Control Del:	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	34.4	xxxx	30.8	xxxxx	xxxx	xxxxx				
LOS by Move:	A	*	*	*	*	*	D	*	D	*	*	*				
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT				
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	0.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*				
ApproachDel:	xxxxxx			xxxxxx			31.4			xxxxxx						
ApproachLOS:	*			*			D			*						

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #21 SR99 E Front & NB Ramps Morada

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:	#222			#188								
Dist(miles):	0.250			0.250								
Speed (mph):	1.00			1.00								
SignalIndex:	#23			#13								
Cycle Time:	100 secs			100 secs								
InitVolume:	327	48		41	22							
Saturation:	1165	810		1769	1348							
ArrivalType:	4	4		4	4							
G/C:	0.31	0.22		0.03	0.06							
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:	0.411	0.287		0.046	0.085							
gq1:	16.54	4.23		2.21	1.49							
gq2:	9.90	0.36		0.07	0.03							
gq:	26.44	4.59		2.28	1.53							
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:	0.550			0.550								
beta:	0.645			0.645								
ta (secs):	900.000			900.000								
F:	0.003			0.003								
f:	1.000	1.000		1.000	1.000							
vcmax:	92	12		13	6							
vcg:	97	14		13	7							
vcmin:	1000	1000		1000	1000							
tp:	0.0	0.0		0.0	0.0							
p:	0.000			0.000								
*** Computation 3: Platoon Event Periods												
pdom/psubo:	0.000/0.000/Unconstrained											
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	299	xxxxx	xxxxx	0	xxxxx	xxxxx	947	947	292	1265	954	242
AdjCnflVol:	299	xxxxx	xxxxx	0	xxxxx	xxxxx	947	947	292	1265	954	242
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	299	xxxxx	xxxxx	0	xxxxx	xxxxx	947	947	292	1265	954	242
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	1262	xxxxx	xxxxx	1623	xxxxx	xxxxx	290	261	747	146	259	796
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
Potent Cap.:	1262	xxxxx	xxxxx	1623	xxxxx	xxxxx	290	261	747	146	259	796

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 West Ln & West Ln Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.627
Loss Time (sec):	9	Average Delay (sec/veh):	18.9
Optimal Cycle:	43	Level Of Service:	B

Street Name:	West Lane						West Lane Frontage Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	0	1	1	0	0	1	0	0	1	1	0	0
Volume Module: PM Peak Hour												
Base Vol:	196	912	148	38	742	63	82	9	107	141	16	9
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	196	912	148	38	742	63	82	9	107	141	16	9
Added Vol:	0	267	0	0	235	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	196	1179	148	38	977	63	82	9	107	141	16	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	213	1282	161	41	1062	68	89	10	116	153	17	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	213	1282	161	41	1062	68	89	10	116	153	17	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	213	1282	161	41	1062	68	89	10	116	153	17	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.92	0.92	0.93	0.92	0.92	0.71	0.71	0.83	0.63	0.93	0.93
Lanes:	1.00	1.78	0.22	1.00	1.88	0.12	0.90	0.10	1.00	1.00	0.64	0.36
Final Sat.:	1769	3090	388	1769	3294	212	1215	133	1583	1201	1127	634
Capacity Analysis Module:												
Vol/Sat:	0.12	0.41	0.41	0.02	0.32	0.32	0.07	0.07	0.07	0.13	0.02	0.02
Crit Moves:	****				****					****		
Green/Cycle:	0.19	0.67	0.67	0.04	0.51	0.51	0.20	0.20	0.20	0.20	0.20	0.20
Volume/Cap:	0.63	0.62	0.62	0.62	0.63	0.63	0.36	0.36	0.36	0.63	0.08	0.08
Delay/Veh:	40.8	9.9	9.9	64.0	18.1	18.1	35.0	35.0	34.9	41.4	32.3	32.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.8	9.9	9.9	64.0	18.1	18.1	35.0	35.0	34.9	41.4	32.3	32.3
LOS by Move:	D	A	A	E	B	B	D	D	C	D	C	C
HCM2k95thQ:	277	295	295	117	491	491	139	139	158	255	33	33

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	1	1	0	1	0	1	1	0	0	1	0	1	0	0
Lane Group:	L	RT		RT	L	RT		RT	LT	LT		R	L	RT		RT
#LnsInGrps:	1	2		2	1	2		2	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		5	5	xxxx		2	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.98	0.98		xxxx	0.99	0.99		xxxx	xxxx	0.85		xxxx	0.95	0.95	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.72	0.72	xxxxx		0.65	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.96	0.96		0.93	0.97	0.97		0.71	0.71	0.83		0.63	0.93	0.93	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	0.95		1.00	0.95	0.95		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.92	0.92		0.93	0.92	0.92		0.71	0.71	0.83		0.63	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North	South	East	West
Cycle Length, C:	xxxxxx	xxxxxx	100	100
Actual Green Time Per Lane Group, G:	xxxxxx	xxxxxx	19.35	19.35
Effective Green Time Per Lane Group, g:	xxxxxx	xxxxxx	20.35	20.35
Opposing Effective Green Time, go:	xxxxxx	xxxxxx	20.35	20.35
Number Of Opposing Lanes, No:	xxxxxx	xxxxxx	1	1
Number Of Lanes In Lane Group, N:	xxxxxx	xxxxxx	1	1
Adjusted Left-Turn Flow Rate, Vlt:	xxxxxx	xxxxxx	89	153
Proportion of Left Turns in Lane Group, Plt:	xxxxxx	xxxxxx	0.90	1.00
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	xxxxxx	xxxxxx	2.48	4.26
Adjusted Opposing Flow Rate, Vo:	xxxxxx	xxxxxx	27	99
Opposing Flow Per Lane Per Cycle, Volc:	xxxxxx	xxxxxx	0.75	2.75
Opposing Platoon Ratio, Rpo:	xxxxxx	xxxxxx	1.33	1.33
Lost Time Per Phase, tl:	xxxxxx	xxxxxx	3.00	3.00
Eff grn until arrival of left-turn car, gf:	xxxxxx	xxxxxx	0.57	0.00
Opposing Queue Ratio, qro:	xxxxxx	xxxxxx	0.73	0.73
Eff grn blocked by opposing queue, gq:	xxxxxx	xxxxxx	0.00	1.33
Eff grn while left turns filter thru, gu:	xxxxxx	xxxxxx	19.78	19.02
Max opposing cars arriving during gq-gf, n:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	0.86	0.81
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	0.90	1.00
Through-car Equivalents, el1:	xxxxxx	xxxxxx	1.44	1.45
Single Lane Through-car Equivalents, el2:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	xxxxxx	xxxxxx	0.19	0.20
Single Lane Left Turn Adjustment Factor, fm:	xxxxxx	xxxxxx	0.72	0.65
Left Turn Adjustment Factor, flt:	xxxxxx	xxxxxx	0.72	0.65

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.19	0.67	0.67	0.04	0.51	0.51	0.20	0.20	0.20	0.20	0.20	0.20
ArrivalType:		4			4			4			4	
ProgFactor:	0.96	0.43	0.43	0.99	0.77	0.77	0.94	0.94	0.94	0.96	0.92	0.92
Q1:	5.2	5.1	5.1	1.1	9.1	9.1	2.2	2.2	2.6	3.7	0.6	0.6
UpstreamVC:	0.61	0.61	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.76	0.76	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.29	0.63	0.63	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.5	1.0	1.0	1.2	1.6	1.6	0.5	0.5	0.6	1.5	0.1	0.1
HCM2KQueue:	5.7	6.1	6.1	2.3	10.7	10.7	2.8	2.8	3.2	5.2	0.6	0.6
70th%Factor:	1.19	1.19	1.19	1.19	1.18	1.18	1.19	1.19	1.19	1.19	1.20	1.20
HCM2k70thQ:	6.8	7.3	7.3	2.8	12.6	12.6	3.3	3.3	3.8	6.2	0.8	0.8
85th%Factor:	1.55	1.54	1.54	1.58	1.51	1.51	1.57	1.57	1.57	1.55	1.59	1.59
HCM2k85thQ:	8.9	9.5	9.5	3.6	16.2	16.2	4.4	4.4	5.0	8.1	1.0	1.0
90th%Factor:	1.70	1.69	1.69	1.76	1.63	1.63	1.75	1.75	1.74	1.71	1.79	1.79
HCM2k90thQ:	9.7	10.4	10.4	4.1	17.5	17.5	4.8	4.8	5.5	8.9	1.1	1.1
95th%Factor:	1.94	1.93	1.93	2.03	1.83	1.83	2.01	2.01	2.00	1.95	2.08	2.08
HCM2k95thQ:	11.1	11.8	11.8	4.7	19.6	19.6	5.6	5.6	6.3	10.2	1.3	1.3
98th%Factor:	2.34	2.32	2.32	2.54	2.14	2.14	2.51	2.51	2.48	2.37	2.65	2.65
HCM2k98thQ:	13.4	14.3	14.3	5.9	22.9	22.9	6.9	6.9	7.9	12.4	1.7	1.7

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 West Lane & Knickerbocker Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.605
Loss Time (sec): 12 Average Delay (sec/veh): 23.2
Optimal Cycle: 49 Level Of Service: C

Street Name:	West Lane						Knickerbocker Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:	PM Peak Hour											
Base Vol:	72	1115	86	112	824	58	99	95	44	135	74	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	72	1115	86	112	824	58	99	95	44	135	74	58
Added Vol:	0	267	0	0	235	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	72	1382	86	112	1059	58	99	95	44	135	74	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	78	1502	93	122	1151	63	108	103	48	147	80	63
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	78	1502	93	122	1151	63	108	103	48	147	80	63
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	78	1502	93	122	1151	63	108	103	48	147	80	63
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.88	0.88	0.93	0.93	0.93	0.93	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	2.84	0.16	1.00	0.68	0.32	1.00	0.56	0.44
Final Sat.:	1769	5083	1583	1769	4781	262	1769	1212	561	1769	975	764
Capacity Analysis Module:												
Vol/Sat:	0.04	0.30	0.06	0.07	0.24	0.24	0.06	0.09	0.09	0.08	0.08	0.08
Crit Moves:		****		****				****		****		
Green/Cycle:	0.09	0.49	0.49	0.11	0.51	0.51	0.12	0.14	0.14	0.14	0.16	0.16
Volume/Cap:	0.47	0.61	0.12	0.61	0.47	0.47	0.52	0.61	0.61	0.61	0.52	0.52
Delay/Veh:	45.1	19.0	14.0	47.3	16.0	16.0	43.6	44.5	44.5	44.9	40.1	40.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.1	19.0	14.0	47.3	16.0	16.0	43.6	44.5	44.5	44.9	40.1	40.1
LOS by Move:	D	B	B	D	B	B	D	D	D	D	D	D
HCM2k95thQ:	111	445	54	173	304	304	185	255	255	250	223	223

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 3	0 1		1	0 2	1 0		1	0 0	1 0		1	0 0	1 0	
Lane Group:	L	T	R		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	3	1		1	3	3		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.99	0.99		xxxx	0.95	0.95		xxxx	0.93	0.93	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.97	0.97		0.93	0.93	0.93		0.93	0.92	0.92	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.88	0.88		0.93	0.93	0.93		0.93	0.92	0.92	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.09	0.49	0.49		0.11	0.51	0.51		0.12	0.14	0.14		0.14	0.16	0.16	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.79	0.70		0.98	0.73	0.73		0.98	0.98	0.98		0.98	0.97	0.97	
Q1:		2.0	8.8	1.0		3.2	5.9	5.9		2.7	3.8	3.8		3.7	3.5	3.5
UpstreamVC:	0.60	0.60	0.60		0.63	0.63	0.63		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.77	0.77	0.77		0.74	0.74	0.74		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	0.19	0.54	0.49		0.21	0.52	0.52		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:		0.2	0.8	0.1		0.3	0.5	0.5		1.0	1.4	1.4		1.4	1.0	1.0
HCM2KQueue:		2.2	9.6	1.1		3.5	6.3	6.3		3.7	5.2	5.2		5.1	4.5	4.5
70th%Factor:	1.19	1.18	1.20		1.19	1.19	1.19		1.19	1.19	1.19		1.19	1.19	1.19	
HCM2k70thQ:		2.6	11.3	1.3		4.1	7.5	7.5		4.4	6.2	6.2		6.1	5.4	5.4
85th%Factor:	1.58	1.52	1.59		1.57	1.54	1.54		1.56	1.55	1.55		1.55	1.56	1.56	
HCM2k85thQ:		3.5	14.6	1.7		5.4	9.8	9.8		5.8	8.1	8.1		8.0	7.1	7.1
90th%Factor:	1.76	1.65	1.78		1.74	1.69	1.69		1.73	1.71	1.71		1.71	1.72	1.72	
HCM2k90thQ:		3.9	15.8	1.9		6.0	10.7	10.7		6.5	8.9	8.9		8.8	7.8	7.8
95th%Factor:	2.03	1.85	2.07		1.99	1.92	1.92		1.99	1.95	1.95		1.95	1.97	1.97	
HCM2k95thQ:		4.5	17.8	2.2		6.9	12.2	12.2		7.4	10.2	10.2		10.0	8.9	8.9
98th%Factor:	2.54	2.18	2.62		2.47	2.31	2.31		2.45	2.37	2.37		2.37	2.41	2.41	
HCM2k98thQ:		5.6	20.9	2.8		8.6	14.6	14.6		9.1	12.4	12.4		12.2	10.9	10.9

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.728
Loss Time (sec): 12 Average Delay (sec/veh): 35.7
Optimal Cycle: 63 Level Of Service: D

Street Name:	West Lane						Hammer Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4 0 1	2	0	4 0 1	2	0	4 0 1	2	0	4 0 1
Volume Module:	PM Peak Hour											
Base Vol:	485	876	189	247	637	242	450	1224	181	368	1112	122
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	485	876	189	247	637	242	450	1224	181	368	1112	122
Added Vol:	0	267	0	0	235	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	485	1143	189	247	872	242	450	1224	181	368	1112	122
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	527	1242	205	268	948	263	489	1330	197	400	1209	133
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	527	1242	205	268	948	263	489	1330	197	400	1209	133
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	527	1242	205	268	948	263	489	1330	197	400	1209	133
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.15	0.18	0.13	0.08	0.14	0.17	0.14	0.20	0.12	0.12	0.18	0.08
Crit Moves:	****					****	****				****	
Green/Cycle:	0.21	0.31	0.31	0.13	0.23	0.23	0.20	0.28	0.28	0.16	0.24	0.24
Volume/Cap:	0.73	0.60	0.42	0.60	0.61	0.73	0.73	0.71	0.45	0.71	0.73	0.34
Delay/Veh:	40.5	29.8	28.1	43.1	35.4	43.0	41.7	33.9	30.6	43.7	36.4	31.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.5	29.8	28.1	43.1	35.4	43.0	41.7	33.9	30.6	43.7	36.4	31.6
LOS by Move:	D	C	C	D	D	D	D	C	C	D	D	C
HCM2k95thQ:	423	411	234	194	324	351	404	497	241	284	419	148

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Lanes:	2	0	4 0 1	2	0	4 0 1	2	0	4 0 1	2	0	4 0 1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	4	1	2	4	1	2	4	1	2	4	1
HCM Ops Adjusted Lane Utilization Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Fnl Sat Adj:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.21	0.31	0.31	0.13	0.23	0.23	0.20	0.28	0.28	0.16	0.24	0.24
ArrivalType:		4			4			4			4	
ProgFactor:	0.97	0.92	0.90	0.98	0.95	0.97	0.97	0.95	0.92	0.98	0.96	0.92
Q1:	6.8	7.4	4.1	3.5	6.2	6.5	6.4	8.7	4.1	5.3	8.1	2.8
UpstreamVC:	0.00	0.00	0.00	0.47	0.47	0.47	0.00	0.00	0.00	0.65	0.65	0.65
UpstreamAdj:	0.00	0.00	0.00	0.88	0.88	0.88	0.00	0.00	0.00	0.71	0.71	0.71
EarlyArrAdj:	1.00	1.00	1.00	0.27	0.39	0.35	1.00	1.00	1.00	0.25	0.33	0.30
Q2:	2.3	1.4	0.7	0.4	0.6	0.9	2.2	2.2	0.8	0.6	0.8	0.2
HCM2KQueue:	9.1	8.8	4.8	3.9	6.8	7.4	8.6	10.9	4.9	5.9	9.0	2.9
70th%Factor:	1.18	1.18	1.19	1.19	1.18	1.18	1.18	1.18	1.19	1.19	1.18	1.19
HCM2k70thQ:	10.7	10.4	5.7	4.7	8.0	8.8	10.2	12.8	5.9	7.0	10.6	3.5
85th%Factor:	1.52	1.52	1.56	1.56	1.54	1.53	1.52	1.51	1.55	1.55	1.52	1.57
HCM2k85thQ:	13.8	13.4	7.4	6.1	10.4	11.4	13.2	16.4	7.7	9.1	13.7	4.6
90th%Factor:	1.65	1.66	1.71	1.73	1.69	1.68	1.66	1.63	1.71	1.70	1.66	1.75
HCM2k90thQ:	15.0	14.6	8.2	6.8	11.4	12.4	14.3	17.7	8.4	10.0	14.9	5.1
95th%Factor:	1.86	1.87	1.96	1.98	1.91	1.90	1.87	1.83	1.96	1.93	1.86	2.01
HCM2k95thQ:	16.9	16.4	9.4	7.8	13.0	14.1	16.2	19.9	9.6	11.4	16.7	5.9
98th%Factor:	2.20	2.21	2.39	2.44	2.29	2.27	2.21	2.13	2.38	2.34	2.20	2.50
HCM2k98thQ:	20.0	19.4	11.4	9.6	15.5	16.8	19.1	23.2	11.8	13.7	19.8	7.4

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.903
Loss Time (sec): 12 Average Delay (sec/veh): 39.8
Optimal Cycle: 111 Level Of Service: D

Street Name:	Hammer Lane						Holman Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 2	1 0	2	0 3	0 1	2	0 3	1 0	2	0 3	1 0
Volume Module:	PM Peak Hour											
Base Vol:	558	764	512	198	508	119	338	1081	324	473	963	75
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	558	764	512	198	508	119	338	1081	324	473	963	75
Added Vol:	0	17	0	0	15	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	558	781	512	198	523	119	338	1081	324	473	963	75
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	607	849	557	215	568	129	367	1175	352	514	1047	82
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	607	849	557	215	568	129	367	1175	352	514	1047	82
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	607	849	557	215	568	129	367	1175	352	514	1047	82
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.84	0.84	0.90	0.89	0.83	0.90	0.86	0.86	0.90	0.88	0.88
Lanes:	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.08	0.92	2.00	3.71	0.29
Final Sat.:	3432	3189	1594	3432	5083	1583	3432	5032	1508	3432	6219	484
Capacity Analysis Module:												
Vol/Sat:	0.18	0.27	0.35	0.06	0.11	0.08	0.11	0.23	0.23	0.15	0.17	0.17
Crit Moves:			****	****				****		****		
Green/Cycle:	0.28	0.39	0.39	0.07	0.18	0.18	0.16	0.26	0.26	0.17	0.26	0.26
Volume/Cap:	0.63	0.69	0.90	0.90	0.63	0.46	0.65	0.90	0.90	0.90	0.65	0.65
Delay/Veh:	33.0	26.7	36.7	79.9	39.7	38.1	41.7	43.1	43.1	58.7	33.9	33.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.0	26.7	36.7	79.9	39.7	38.1	41.7	43.1	43.1	58.7	33.9	33.9
LOS by Move:	C	C	D	E	D	D	D	D	D	E	C	C
HCM2k95thQ:	409	534	885	205	281	168	253	587	587	519	418	418

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	1	0	2	0 3	0	1	2	0 3	1	0	2	0 3	1	0
Lane Group:	L	RT		RT	L	T		R	L	RT		RT	L	RT		RT
#LnsInGrps:	2	3		3	2	3		1	2	4		4	2	4		4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.94	0.94		xxxx	xxxx	0.85		xxxx	0.97	0.97		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.92	0.92		0.93	0.98	0.83		0.93	0.95	0.95		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	0.91		0.97	0.91	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.84	0.84		0.90	0.89	0.83		0.90	0.86	0.86		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.28	0.39	0.39		0.07	0.18	0.18		0.16	0.26	0.26		0.17	0.26	0.26	
ArrivalType:		4				4				4				4		
ProgFactor:	0.94	0.90	0.96		1.00	0.97	0.96		0.97	0.98	0.98		0.99	0.95	0.95	
Q1:	7.1	9.7	15.4		3.1	5.2	3.1		4.8	11.1	11.1		7.2	7.3	7.3	
UpstreamVC:	0.00	0.00	0.00		0.20	0.20	0.20		0.71	0.71	0.71		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.99	0.99	0.99		0.64	0.64	0.64		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		0.21	0.37	0.34		0.22	0.30	0.30		1.00	1.00	1.00	
Q2:	1.6	2.1	5.6		1.1	0.6	0.3		0.4	2.0	2.0		4.3	1.7	1.7	
HCM2KQueue:	8.7	11.8	21.0		4.2	5.8	3.4		5.2	13.1	13.1		11.4	9.0	9.0	
70th%Factor:	1.18	1.17	1.16		1.19	1.19	1.19		1.19	1.17	1.17		1.18	1.18	1.18	
HCM2k70thQ:	10.3	13.9	24.3		4.9	6.9	4.0		6.2	15.4	15.4		13.4	10.6	10.6	
85th%Factor:	1.52	1.50	1.45		1.56	1.55	1.57		1.55	1.49	1.49		1.51	1.52	1.52	
HCM2k85thQ:	13.3	17.7	30.4		6.5	9.0	5.3		8.1	19.6	19.6		17.2	13.7	13.7	
90th%Factor:	1.66	1.62	1.54		1.72	1.70	1.74		1.71	1.61	1.61		1.63	1.66	1.66	
HCM2k90thQ:	14.5	19.1	32.3		7.2	9.9	5.9		8.9	21.1	21.1		18.6	14.9	14.9	
95th%Factor:	1.87	1.81	1.69		1.98	1.93	2.00		1.95	1.79	1.79		1.82	1.86	1.86	
HCM2k95thQ:	16.3	21.4	35.4		8.2	11.2	6.7		10.1	23.5	23.5		20.8	16.7	16.7	
98th%Factor:	2.21	2.10	1.90		2.43	2.34	2.47		2.37	2.06	2.06		2.12	2.20	2.20	
HCM2k98thQ:	19.3	24.8	39.8		10.1	13.6	8.3		12.3	27.1	27.1		24.2	19.8	19.8	

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #51 Eight Mile & Commercial DW #1

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[12.9]

Street Name:	Commercial Site Driveway #1						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 1			0 0 0 0 0			0 0 2 0 1			0 0 2 0 0		
Volume Module:PM Peak Hour												
Base Vol:	0	0	0	0	0	0	0	826	0	0	936	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	826	0	0	936	0
Added Vol:	0	0	5	0	0	0	0	173	23	0	205	0
Pass-By Vol:	0	0	31	0	0	0	0	-30	30	0	0	0
Initial Fut:	0	0	36	0	0	0	0	969	53	0	1141	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	39	0	0	0	0	1053	58	0	1240	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	39	0	0	0	0	1053	58	0	1240	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	527	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	496	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	496	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.08	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	6.4	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	12.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	12.9			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #51 Eight Mile & Commercial DW #1

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:							#17			#22		
Dist(miles):							0.250			0.250		
Speed (mph):							1.00			1.00		
SignalIndex:							#8			#53		
Cycle Time:							100 secs			100 secs		
InitVolume:							38	857	94	1047		
Saturation:							1769	3538	1769	3538		
ArrivalType:							4	4	4	4		
G/C:							0.07	0.33	0.13	0.81		
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:							0.098	0.439	0.171	1.082		
gq1:							1.94	13.59	4.40	-2.42		
gq2:							0.06	6.48	0.34	-1.58		
gq:							1.99	20.08	4.74	-4.00		
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:							0.400			0.400		
beta:							0.714			0.714		
ta (secs):							900.000			900.000		
F:							0.004			0.004		
f:							1.000	1.000	1.000	1.000		
vcmax:							14	265	32	-55		
vcg:							14	308	35	353		
vcmin:							2000	2000	2000	2000		
tp:							0.0	0.0	0.0	0.0		
p:							0.000			0.000		
*** Computation 3: Platoon Event Periods												
pdom/psubo:							0.000/0.000/Unconstrained					
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	1673	2293	527	1767	2351	620	0	xxxxx	xxxxx	0	xxxxx	xxxxx
AdjCnflVol:	1673	2293	527	1767	2351	620	0	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
ConflictVol:	1673	2293	527	1767	2351	620	0	xxxxx	xxxxx	0	xxxxx	xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	86	39	496	53	35	431	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
Potent Cap.:	86	39	496	53	35	431	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #52 Eight Mile & Commercial DW #2

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B[11.6]

Street Name:	Commercial Site Driveway #2							Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L - T - R			L - T - R			L - T - R			L - T - R			
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled			
Rights:	Include			Include			Include			Include			
Lanes:	0 0 0 0 1			0 0 0 0 0			0 0 2 1 0			0 0 2 0 0			
Volume Module:	PM Peak Hour												
Base Vol:	0	0	0	0	0	0	0	826	0	0	936	0	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Initial Bse:	0	0	0	0	0	0	0	826	0	0	936	0	
Added Vol:	0	0	39	0	0	0	0	155	23	0	205	0	
Pass-By Vol:	0	0	31	0	0	0	0	-30	30	0	0	0	
Initial Fut:	0	0	70	0	0	0	0	951	53	0	1141	0	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
PHF Volume:	0	0	76	0	0	0	0	1034	58	0	1240	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
FinalVolume:	0	0	76	0	0	0	0	1034	58	0	1240	0	
Critical Gap Module:													
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Capacity Module:													
Cnflict Vol:	xxxx	xxxx	373	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	624	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	624	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	0.12	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	
Level Of Service Module:													
2Way95thQ:	xxxx	xxxx	10.4	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	11.6	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*	
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*	
ApproachDel:	11.6			xxxxxx			xxxxxx			xxxxxx			
ApproachLOS:	B			*			*			*			

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #52 Eight Mile & Commercial DW #2

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:							#17			#22		
Dist(miles):							0.250			0.250		
Speed (mph):							1.00			1.00		
SignalIndex:							#8			#53		
Cycle Time:							100 secs			100 secs		
InitVolume:							38	857	94	1047		
Saturation:							1769	3538	1769	3538		
ArrivalType:							4	4	4	4		
G/C:							0.07	0.33	0.13	0.81		
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:							0.098	0.439	0.171	1.082		
gq1:							1.94	13.59	4.40	-2.42		
gq2:							0.06	6.48	0.34	-1.58		
gq:							1.99	20.08	4.74	-4.00		
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:							0.400			0.400		
beta:							0.714			0.714		
ta (secs):							900.000			900.000		
F:							0.004			0.004		
f:							1.000	1.000	1.000	1.000		
vcmax:							14	265	32	-55		
vcg:							14	308	35	353		
vcmin:							2000	2000	2000	2000		
tp:							0.0	0.0	0.0	0.0		
p:							0.000			0.000		
*** Computation 3: Platoon Event Periods												
pdom/psubo:							0.000/0.000/Unconstrained					
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	1683	2303	373	1585	2332	620	0	xxxxx	xxxxx	0	xxxxx	xxxxx
AdjCnflVol:	1683	2303	373	1585	2332	620	0	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
ConflictVol:	1683	2303	373	1585	2332	620	0	xxxxx	xxxxx	0	xxxxx	xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	85	38	624	73	36	431	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
Potent Cap.:	85	38	624	73	36	431	1622	xxxxx	xxxxx	1622	xxxxx	xxxxx

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #53 Eight Mile Road & Road C

Cycle (sec):	100	Critical Vol./Cap.(X):	0.513
Loss Time (sec):	6	Average Delay (sec/veh):	12.4
Optimal Cycle:	28	Level Of Service:	B

Street Name:	Road C						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	0 0	0	0 0	0 0	2	0 1	1 0	2	0 0
Volume Module:PM Peak Hour												
Base Vol:	0	0	0	0	0	0	0	826	0	0	936	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	826	0	0	936	0
Added Vol:	94	0	96	0	0	0	0	148	46	191	111	0
Pass-By:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	94	0	96	0	0	0	0	974	46	191	1047	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	102	0	104	0	0	0	0	1059	50	208	1138	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	102	0	104	0	0	0	0	1059	50	208	1138	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	102	0	104	0	0	0	0	1059	50	208	1138	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.93	0.83	0.93	0.93	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	1769	0	1583	0	0	0	0	3538	1583	1769	3538	0
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.07	0.00	0.00	0.00	0.00	0.30	0.03	0.12	0.32	0.00
Crit Moves:			****					****		****		
Green/Cycle:	0.13	0.00	0.13	0.00	0.00	0.00	0.00	0.58	0.58	0.23	0.81	0.00
Volume/Cap:	0.45	0.00	0.51	0.00	0.00	0.00	0.00	0.51	0.05	0.51	0.40	0.00
Delay/Veh:	41.7	0.0	42.9	0.0	0.0	0.0	0.0	12.6	9.0	34.8	2.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.7	0.0	42.9	0.0	0.0	0.0	0.0	12.6	9.0	34.8	2.7	0.0
LOS by Move:	D	A	D	A	A	A	A	B	A	C	A	A
HCM2k95thQ:	166	0	180	0	0	0	0	296	18	279	34	0

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #53 Eight Mile Road & Road C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	0	0	1	0 0	0	0	0	0 0	0	2	0 1	1 0	2	0	0
Lane Group:	L	xxxx		R	xxxx	xxxx	xxxx	xxxx	T			R	L		T	xxxx
#LnsInGrps:	1	0		1	0	0	0	0	2			1	1		2	0
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12				
CrsswalkWid:	8				8				8							
% Hev Veh:	2				2				2							
Grade:	0%				0%				0%							
Parking/Hr:	No				No				No							
Bus Stp/Hr:	0				0				0							
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0							
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0							
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx				1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	1.00	1.00	1.00	1.00	xxxxx				
Hev Veh Adj:	0.98	xxxx	0.98	xxxx	xxxx	xxxxx	xxxx	0.98	0.98	0.98	0.98	xxxxx				
Grade Adj:	1.00	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	1.00	1.00	1.00	1.00	xxxxx				
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	1.00	xxxxx				
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	1.00	xxxxx				
Area Adj:	1.00	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	1.00	1.00	1.00	1.00	xxxxx				
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	xxxxx	xxxx	xxxx	0.85	xxxx	xxxx	xxxxx				
LT Adj:	0.95	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.95	xxxx	xxxxx				
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
HCM Sat Adj:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.98	0.83	0.93	0.98	1.00				
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00				
Fnl Sat Adj:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.93	0.83	0.93	0.93	1.00				
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00				

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #53 Eight Mile Road & Road C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.13	0.00	0.13	0.00	0.00	0.00	0.00	0.58	0.58	0.23	0.81	0.00
ArrivalType:		4			4			4			4	
ProgFactor:	0.97	1.00	0.97	1.00	1.00	1.00	1.00	0.62	0.54	0.94	0.00	1.00
Q1:	2.5	0.0	2.6	0.0	0.0	0.0	0.0	5.7	0.3	4.8	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.80	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.50	0.00	0.00	0.00
EarlyArrAdj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.39	0.35	1.00	1.00	0.00
Q2:	0.8	0.0	1.0	0.0	0.0	0.0	0.0	0.4	0.0	1.0	0.7	0.0
HCM2KQueue:	3.3	0.0	3.6	0.0	0.0	0.0	0.0	6.1	0.3	5.8	0.7	0.0
70th%Factor:	1.19	1.20	1.19	1.20	1.20	1.20	1.20	1.19	1.20	1.19	1.20	1.20
HCM2k70thQ:	4.0	0.0	4.3	0.0	0.0	0.0	0.0	7.3	0.4	6.8	0.8	0.0
85th%Factor:	1.57	1.60	1.57	1.60	1.60	1.60	1.60	1.54	1.60	1.55	1.59	1.60
HCM2k85thQ:	5.2	0.0	5.7	0.0	0.0	0.0	0.0	9.5	0.5	8.9	1.0	0.0
90th%Factor:	1.74	1.80	1.73	1.80	1.80	1.80	1.80	1.69	1.79	1.70	1.79	1.80
HCM2k90thQ:	5.8	0.0	6.3	0.0	0.0	0.0	0.0	10.4	0.6	9.8	1.2	0.0
95th%Factor:	2.00	2.10	1.99	2.10	2.10	2.10	2.10	1.93	2.09	1.94	2.08	2.10
HCM2k95thQ:	6.6	0.0	7.2	0.0	0.0	0.0	0.0	11.8	0.7	11.2	1.4	0.0
98th%Factor:	2.47	2.70	2.46	2.70	2.70	2.70	2.70	2.32	2.67	2.34	2.65	2.70
HCM2k98thQ:	8.2	0.0	8.9	0.0	0.0	0.0	0.0	14.3	0.9	13.5	1.7	0.0

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #54 West Lane & Commercial DW #3

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[11.7]

Street Name:	West Lane						Commercial Site Driveway #3					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	1
Volume Module:	PM Peak Hour											
Base Vol:	0	997	0	0	846	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	997	0	0	846	0	0	0	0	0	0	0
Added Vol:	0	82	37	0	135	0	0	0	0	0	0	14
Pass-By Vol:	0	-30	30	0	0	0	0	0	0	0	0	31
Initial Fut:	0	1049	67	0	981	0	0	0	0	0	0	45
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	1140	73	0	1066	0	0	0	0	0	0	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	1140	73	0	1066	0	0	0	0	0	0	49
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	416
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	585
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	585
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.08
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	6.8
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.7
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	B
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			11.7		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

```
*******************************************************************************
Intersection #54 West Lane & Commercial DW #3
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
-----------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                        #99
Dist(miles):                       0.250
Speed (mph):                        1.00
SignalIndex:                       #8
Cycle Time:                          100 secs
InitVolume:                    161   325
Saturation:                   1769  3538
ArrivalType:                     4     4
G/C:                           0.10  0.13
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                            0.127 0.173
gq1:                           7.94  7.60
gq2:                           1.10  1.06
gq:                            9.04  8.66
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                             0.350
beta:                              0.741
ta (secs):                        900.000
F:                                  0.004
f:                            1.000 1.000
vcmax:                           67   129
vcg:                             67   134
vcmin:                         3000  3000
tp:                             0.0   0.0
p:                                 0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1446  2279   355 1532  2243   416
AdjCnflVol:    0 xxxxx xxxxx    0 xxxxx xxxxx 1446  2279   355 1532  2243   416
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1446  2279   355 1532  2243   416
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1622 xxxxx xxxxx 1622 xxxxx xxxxx   92    39   641  107    42   585
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1622 xxxxx xxxxx 1622 xxxxx xxxxx   92    39   641  107    42   585
```


EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

```
*******************************************************************************
Intersection #55 West Lane & Commercial DW #4
*******************************************************************************
Average Delay (sec/veh):      0.1       Worst Case Level Of Service: B[ 11.3]
*******************************************************************************
Street Name:            West Lane                Commercial Site Driveway #4
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
-----------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  2  1  0    0  0  3  0  0    0  0  0  0  0    0  0  0  0  1
-----------|---------------||---------------||---------------||---------------|
Volume Module:PM Peak Hour
Base Vol:       0  997     0     0  846     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  997     0     0  846     0     0    0     0     0    0     0
Added Vol:      0  107    37     0  135     0     0    0     0     0    0    12
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0 1104    37     0  981     0     0    0     0     0    0    12
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0 1200    40     0 1066     0     0    0     0     0    0    13
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0 1200    40     0 1066     0     0    0     0     0    0    13
-----------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.9
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3
-----------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   420
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   582
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   582
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.02
-----------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   1.7
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  11.3
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     B
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             11.3
ApproachLOS:         *                *                *                B
*******************************************************************************
Note: Queue reported is the distance per lane in feet.
*******************************************************************************
```

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #55 West Lane & Commercial DW #4

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	2%	2%	2%	2%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0
Pedestrian Walk Speed: 4.00 feet/sec				
LaneWidth:	12 feet	12 feet	12 feet	12 feet
Time Period: 0.25 hour				

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #56 West Lane & Road A

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[12.0]

Street Name:	West Lane												Road A											
Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Rights:	Include						Include						Include						Include					
Lanes:	0	0	2	1	0		0	0	2	0	0		0	0	0	0	0		0	0	0	0	1	
Volume Module:PM Peak Hour																								
Base Vol:	0	997		0			0	846		0			0		0				0		0		0	
Growth Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00		1.00				1.00		1.00		1.00	
Initial Bse:	0	997		0			0	846		0			0		0				0		0		0	
Added Vol:	0	115		103			0	135		0			0		0				0		0		29	
PasserByVol:	0	0		0			0	0		0			0		0				0		0		0	
Initial Fut:	0	1112		103			0	981		0			0		0				0		0		29	
User Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00		1.00				1.00		1.00		1.00	
PHF Adj:	0.92	0.92		0.92			0.92	0.92		0.92			0.92		0.92				0.92		0.92		0.92	
PHF Volume:	0	1209		112			0	1066		0			0		0				0		0		32	
Reduct Vol:	0	0		0			0	0		0			0		0				0		0		0	
FinalVolume:	0	1209		112			0	1066		0			0		0				0		0		32	
Critical Gap Module:																								
Critical Gp:	xxxxx	xxxx		xxxxx			xxxxx	xxxx		xxxxx			xxxxx		xxxx				xxxxx		xxxx		6.9	
FollowUpTim:	xxxxx	xxxx		xxxxx			xxxxx	xxxx		xxxxx			xxxxx		xxxx				xxxxx		xxxx		3.3	
Capacity Module:																								
Cnflict Vol:	xxxx	xxxx		xxxxx			xxxx	xxxx		xxxxx			xxxx		xxxx				xxxxx		xxxx		459	
Potent Cap.:	xxxx	xxxx		xxxxx			xxxx	xxxx		xxxxx			xxxx		xxxx				xxxxx		xxxx		549	
Move Cap.:	xxxx	xxxx		xxxxx			xxxx	xxxx		xxxxx			xxxx		xxxx				xxxxx		xxxx		549	
Volume/Cap:	xxxx	xxxx		xxxx			xxxx	xxxx		xxxx			xxxx		xxxx				xxxx		xxxx		0.06	
Level Of Service Module:																								
2Way95thQ:	xxxx	xxxx		xxxxx			xxxx	xxxx		xxxxx			xxxx		xxxx				xxxxx		xxxx		4.6	
Control Del:	xxxxx	xxxx		xxxxx			xxxxx	xxxx		xxxxx			xxxxx		xxxx				xxxxx		xxxx		12.0	
LOS by Move:	*	*		*			*	*		*			*		*				*		*		B	
Movement:	LT - LTR - RT						LT - LTR - RT						LT - LTR - RT						LT - LTR - RT					
Shared Cap.:	xxxx	xxxx		xxxxx			xxxx	xxxx		xxxxx			xxxx		xxxx				xxxxx		xxxx		xxxxx	
SharedQueue:	xxxxx	xxxx		xxxxx			xxxxx	xxxx		xxxxx			xxxxx		xxxx				xxxxx		xxxx		xxxxx	
Shrd ConDel:	xxxxx	xxxx		xxxxx			xxxxx	xxxx		xxxxx			xxxxx		xxxx				xxxxx		xxxx		xxxxx	
Shared LOS:	*	*		*			*	*		*			*		*				*		*		*	
ApproachDel:	xxxxxx						xxxxxx						xxxxxx						12.0					
ApproachLOS:	*						*						*						B					

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

```
Intersection #56 West Lane & Road A
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:       #106             #99
Dist(miles):      0.250            0.250
Speed (mph):       1.00             1.00
SignalIndex:      #16              #8
Cycle Time:         100 secs         100 secs
InitVolume:     0  1209        161   325
Saturation:     0  3538       1769  3538
ArrivalType:    0     4          4     4
G/C:         0.00  0.66       0.10  0.13
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:          0.000 0.873      0.127 0.173
gq1:         0.00  4.32       7.94  7.60
gq2:         0.00  3.62       1.10  1.06
gq:          0.00  7.94       9.04  8.66
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:            0.400            0.400
beta:             0.714            0.714
ta (secs):       900.000           900.000
F:                0.004            0.004
f:          1.000 1.000      1.000 1.000
vcmax:          0   107         61   117
vcg:            0   409         61   122
vcmin:       2000  2000       2000  2000
tp:           0.0   0.0        0.0   0.0
p:                0.000            0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1469  2387   533 1798  2331   459
AdjCnflVol:    0 xxxxx xxxxx    0 xxxxx xxxxx 1469  2387   533 1798  2331   459
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx    0 xxxxx xxxxx 1469  2387   533 1798  2331   459
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1622 xxxxx xxxxx 1622 xxxxx xxxxx   89    34   491   71    36   549
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1622 xxxxx xxxxx 1622 xxxxx xxxxx   89    34   491   71    36   549
```


EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

```
Intersection #57 Eight Mile & Hi Dens Res DW #1
Average Delay (sec/veh):      0.5       Worst Case Level Of Service: B[ 14.9]
Street Name:  High Density Resid Driveway #1           Eight Mile Road
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  0    0  0  1  1  0    0  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:PM Peak Hour
Base Vol:       0    0     0     0    0     0     0  826     0     0  936     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0     0    0     0     0  826     0     0  936     0
Added Vol:      0    0    82     0    0     0     0  239    21     0  226     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0    82     0    0     0     0 1065    21     0 1162     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0    89     0    0     0     0 1158    23     0 1263     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0    89     0    0     0     0 1158    23     0 1263     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   590  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx   451  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx   451  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.20  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx  18.2  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx  14.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     B     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      14.9           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
Note: Queue reported is the distance per lane in feet.
```

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #57 Eight Mile & Hi Dens Res DW #1

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #58 Eight Mile & Hi Dens Res DW #2

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: C[15.6]

Street Name:	High Density Resid Driveway #2									Eight Mile Road								
Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	T	R				L	T	R				L	T	R				L	T	R			
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Rights:	Include						Include						Include						Include					
Lanes:	0	0	0	0	1		0	0	0	0	0		0	0	1	1	0		0	0	2	0	0	
Volume Module:	PM Peak Hour																							
Base Vol:	0	0	0		0	0		0	0		0	0		0	826		0		0	936		0		
Growth Adj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Initial Bse:	0	0	0		0	0		0	0		0	0		0	826		0		0	936		0		
Added Vol:	0	0	82		0	0		0	0		0	0		0	300		21		0	226		0		
PasserByVol:	0	0	0		0	0		0	0		0	0		0	0		0		0	0		0		
Initial Fut:	0	0	82		0	0		0	0		0	0		0	1126		21		0	1162		0		
User Adj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92		0.92	0.92		0.92	0.92		0.92	0.92		0.92		0.92	0.92		0.92	0.92	
PHF Volume:	0	0	89		0	0		0	0		0	0		0	1224		23		0	1263		0		
Reduct Vol:	0	0	0		0	0		0	0		0	0		0	0		0		0	0		0		
FinalVolume:	0	0	89		0	0		0	0		0	0		0	1224		23		0	1263		0		
Critical Gap Module:																								
Critical Gp:	xxxxx	xxxx	6.9		xxxxx	xxxx		xxxxx	xxxxx		xxxx	xxxxx		xxxxx	xxxxx		xxxx	xxxxx		xxxxx	xxxxx		xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3		xxxxx	xxxx		xxxxx	xxxxx		xxxx	xxxxx		xxxxx	xxxxx		xxxx	xxxxx		xxxxx	xxxxx		xxxx	xxxxx
Capacity Module:																								
Cnflict Vol:	xxxx	xxxx	623		xxxx	xxxx		xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		
Potent Cap.:	xxxx	xxxx	429		xxxx	xxxx		xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		
Move Cap.:	xxxx	xxxx	429		xxxx	xxxx		xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		
Volume/Cap:	xxxx	xxxx	0.21		xxxx	xxxx		xxxx		xxxx	xxxx	xxxx		xxxx	xxxx		xxxx		xxxx	xxxx		xxxx		
Level Of Service Module:																								
2Way95thQ:	xxxx	xxxx	19.3		xxxx	xxxx		xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		
Control Del:	xxxxx	xxxx	15.6		xxxxx	xxxx		xxxxx	xxxxx		xxxx	xxxxx		xxxxx	xxxxx		xxxx	xxxxx		xxxxx	xxxxx		xxxx	xxxxx
LOS by Move:	*	*	C		*	*		*	*		*	*		*	*		*	*		*	*		*	*
Movement:	LT -	LTR -	RT		LT -	LTR -		RT			LT -	LTR -		RT			LT -	LTR -		RT			LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx		xxxxx			xxxx	xxxx		xxxxx			xxxx	xxxx		xxxxx			xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx		xxxxx	xxxxx		xxxx	xxxxx		xxxxx	xxxxx		xxxx	xxxxx		xxxxx	xxxxx		xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx		xxxxx	xxxxx		xxxx	xxxxx		xxxxx	xxxxx		xxxx	xxxxx		xxxxx	xxxxx		xxxx	xxxxx
Shared LOS:	*	*	*		*	*		*	*		*	*		*	*		*	*		*	*		*	*
ApproachDel:	15.6				xxxxxx				xxxxxx					xxxxxx										
ApproachLOS:	C				*				*					*										

Note: Queue reported is the distance per lane in feet.

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Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #58 Eight Mile & Hi Dens Res DW #2

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			12 feet			12 feet			12 feet	
Time Period: 0.25 hour												

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #60 Eight Mile & Industrial DW #1

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[13.1]

Street Name:	Industrial Site Driveway #2						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 1			0 0 0 0 0			0 0 1 1 0			0 0 2 0 0		
Volume Module:PM Peak Hour												
Base Vol:	0	0	0	0	0	0	0	726	0	0	851	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	726	0	0	851	0
Added Vol:	0	0	2	0	0	0	0	382	1	0	240	0
HamLn No LT:	0	0	0	0	0	0	0	-7	0	0	0	0
Initial Fut:	0	0	2	0	0	0	0	1101	1	0	1091	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	2	0	0	0	0	1197	1	0	1186	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	2	0	0	0	0	1197	1	0	1186	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	599	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	445	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	445	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.4	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	13.1	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	13.1			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #60 Eight Mile & Industrial DW #1

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			12 feet			12 feet			12 feet	
Time Period: 0.25 hour												

EPAP + Project PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #61 Eight Mile & Industrial DW #2

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[13.1]

Street Name:	Industrial Site Driveway #2						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 1			0 0 0 0 0			0 0 1 1 0			0 0 2 0 0		
Volume Module:PM Peak Hour												
Base Vol:	0	0	0	0	0	0	0	726	0	0	851	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	726	0	0	851	0
Added Vol:	0	0	2	0	0	0	0	383	1	0	240	0
HamLn No LT:	0	0	0	0	0	0	0	-7	0	0	0	0
Initial Fut:	0	0	2	0	0	0	0	1102	1	0	1091	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	2	0	0	0	0	1198	1	0	1186	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	2	0	0	0	0	1198	1	0	1186	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	599	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	444	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	444	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.4	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	13.1	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	13.1			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the distance per lane in feet.

EPAP + Project PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #61 Eight Mile & Industrial DW #2

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	2%	2%	2%	2%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0
LaneWidth:	12 feet	12 feet	12 feet	12 feet

Pedestrian Walk Speed: 4.00 feet/sec
Time Period: 0.25 hour

EPAP + Project PM Pk Hr

Future Queue Length Report (feet)

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
#3	[HCM2k95thQ]:	506	23	69	35	599	599	265	941	596	162	918	918
#4	[HCM2k95thQ]:	394	101	122	28	441	441	145	749	749	262	593	2
#5	[HCM2k95thQ]:	100	610	893	284	475	135	239	1145	23	937	676	37
#6	[HCM2k95thQ]:	27	516	516	284	300	300	228	228	228	602	602	602
#7	[HCM2k95thQ]:	0	67	67	38	0	38	22	19	0	50	16	16
#8	[HCM2k95thQ]:	1091	193	115	78	351	565	678	663	1009	356	1000	14
#9	[2Way95thQ]:	xxxx	xxxx	xxxx	3.5	3.5	3.5	0.0	0.0	xxxx	xxxx	xxxx	xxxx
#10	[HCM2k95thQ]:	79	0	116	67	0	16	156	191	191	161	186	186
#11	[HCM2k95thQ]:	128	0	0	26	0	138	127	90	11	0	220	3
#14	[2Way95thQ]:	xxxx	xxxx	xxxx	29.6	29.6	xxxx	xxxx	xxxx	xxxx	15.0	xxxx	47.4
#15	[2Way95thQ]:	4.6	4.6	xxxx	xxxx	xxxx	xxxx	303	xxxx	5.3	xxxx	xxxx	xxxx
#16	[HCM2k95thQ]:	0	294	39	89	74	0	0	0	0	287	0	8
#17	[HCM2k95thQ]:	180	111	222	46	130	12	23	220	176	232	103	103
#18	[HCM2k95thQ]:	101	544	232	294	306	24	108	37	122	245	24	394
#19	[HCM2k95thQ]:	254	81	246	152	74	183	198	195	253	276	210	220
#20	[2Way95thQ]:	xxxx	xxxx	xxxx	2.2	2.2	xxxx	xxxx	xxxx	xxxx	141	xxxx	1.7
#21	[2Way95thQ]:	14.6	14.6	xxxx	xxxx	xxxx	xxxx	69.7	xxxx	249	xxxx	xxxx	xxxx
#24	[HCM2k95thQ]:	277	295	295	117	491	491	139	139	158	255	33	33
#25	[HCM2k95thQ]:	111	445	54	173	304	304	185	255	255	250	223	223
#26	[HCM2k95thQ]:	423	411	234	194	324	351	404	497	241	284	419	148
#27	[HCM2k95thQ]:	409	534	885	205	281	168	253	587	587	519	418	418
#51	[2Way95thQ]:	xxxx	xxxx	6.4	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#52	[2Way95thQ]:	xxxx	xxxx	10.4	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#53	[HCM2k95thQ]:	166	0	180	0	0	0	0	296	18	279	34	0
#54	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	6.8
#55	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	1.7
#56	[2Way95thQ]:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	4.6
#57	[2Way95thQ]:	xxxx	xxxx	18.2	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#58	[2Way95thQ]:	xxxx	xxxx	19.3	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#60	[2Way95thQ]:	xxxx	xxxx	0.4	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
#61	[2Way95thQ]:	xxxx	xxxx	0.4	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

EPAP + Reduce Dens Alt AM Pk Hr

Scenario Report

Scenario:	EPAP + Red Dens Alt AM
Command:	EPAP + Red Dens Alt AM
Volume:	EPAP AM
Geometry:	EPAP Proj
Impact Fee:	Default Impact Fee
Trip Generation:	AM Pk Hr
Trip Distribution:	EPAP AM
Paths:	EPAP Proj
Routes:	Default Route
Configuration:	Default Configuration

EPAP + Reduce Dens Alt AM Pk Hr

Trip Generation Report

Forecast for AM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	725.00	ElemSchStudent	0.25	0.20	181	145	326	29.5
1	Village West	0.00	Tra Vigne SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	0.60	0.36	0	0	0	0.0
1	Village West	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
1	Village West	701.00	Red Dens SFDU	0.18	0.53	126	372	498	45.1
1	Village West	0.00	GP Alt MFDU	0.10	0.41	0	0	0	0.0
1	Village West	0.00	Tra V Internal	-6.00	-6.00	0	0	0	0.0
1	Village West	0.00	GP Alt Interna	-7.00	-7.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-11.00	-7.00	0	0	0	0.0
	Zone 1 Subtotal					307	517	824	74.6
2	Village East	0.00	Tra Vigne SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	Red Proj SFDU	0.18	0.53	0	0	0	0.0
2	Village East	396.00	Red Dens SFDU	0.18	0.53	71	210	281	25.4
	Zone 2 Subtotal					71	210	281	25.4
TOTAL						378	727	1105	100.0

EPAP + Reduce Dens Alt AM Pk Hr

Trip Distribution Report

Percent Of Trips EPAP AM

To Gates

Zone	1	2	5	6	8	9	10	11	14	15	16
1	2.0	1.0	2.0	4.0	7.0	2.0	3.0	1.0	1.0	3.0	8.0
2	2.0	1.0	2.0	4.0	7.0	2.0	3.0	1.0	1.0	3.0	8.0

To Gates

Zone	17	18	19	20	22	23	24	25	26
1	1.0	3.0	29.0	5.0	2.0	18.0	4.0	2.0	2.0
2	1.0	3.0	29.0	5.0	2.0	18.0	4.0	2.0	2.0

EPAP + Reduce Dens Alt AM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	E	57.2	1.021	E	59.8	1.036	+ 2.657 D/V
# 4 Eight Mile Rd & Davis Rd	C	34.4	0.828	D	35.6	0.852	+ 1.251 D/V
# 5 Eight Mile & Lower Sacto Rd	D	40.9	0.920	D	50.8	1.003	+ 9.856 D/V
# 6 West Lane & Armstrong Road	C	32.3	0.636	C	32.3	0.646	-0.045 D/V
# 7 West Lane & Ham Lane	A	8.7	0.273	A	8.6	0.278	-0.152 D/V
# 8 Eight Mile Rd & West Ln	D	43.2	0.915	E	59.0	1.041	+15.745 D/V
# 9 Eight Mile Road & Ham Lane	C	21.5	0.112	D	30.1	0.164	+ 8.571 D/V
# 10 Eight Mile & Leach Rd/St J	A	1.3	0.317	A	9.5	0.461	+ 8.253 D/V
# 11 Eight Mile & MickeGrove/Holman	A	1.3	0.277	A	7.6	0.360	+ 6.241 D/V
# 14 SR99 W Front & SB Ramps 8 Mile	B	11.3	0.332	B	11.8	0.341	+ 0.496 D/V
# 15 SR99 E Front & NB Ramps 8 Mile	C	20.5	0.377	D	27.8	0.555	+ 7.369 D/V
# 17 Holman & Lt Col Mark Taylor	C	30.0	0.338	C	30.1	0.341	+ 0.082 D/V
# 18 Morada Lane & West Lane	C	28.2	0.506	C	29.0	0.574	+ 0.871 D/V
# 19 Morada Lane & Holman Road	D	35.0	0.583	D	35.0	0.594	-0.025 D/V
# 20 SR99 W Front & SB Ramps Morada	D	29.2	0.701	D	31.8	0.727	+ 2.601 D/V
# 21 SR99 E Front & NB Ramps Morada	F	69.2	1.054	F	65.7	1.054	-3.401 D/V
# 24 West Ln & West Ln Frontage Rd	C	21.0	0.593	C	20.5	0.669	-0.465 D/V
# 25 West Lane & Knickerbocker Dr	C	25.3	0.473	C	23.7	0.525	-1.626 D/V
# 26 West Lane & Hammer Lane	C	32.8	0.554	C	32.7	0.592	-0.094 D/V
# 27 Hammer Lane & Holman Road	D	37.9	0.876	D	38.1	0.880	+ 0.197 D/V

EPAP + Reduce Dens Alt AM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 9 Eight Mile Road & Ham Lane	??? / ???	No / No
# 14 SR99 W Front & SB Ramps 8 Mile	??? / ???	No / No
# 15 SR99 E Front & NB Ramps 8 Mile	??? / ???	No / No
# 20 SR99 W Front & SB Ramps Morada	??? / ???	No / Yes
# 21 SR99 E Front & NB Ramps Morada	??? / ???	Yes / Yes

EPAP + Reduce Dens Alt AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #9 Eight Mile Road & Ham Lane

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0	1	0	0	0	1	0	2	0	0	0	1	1	0
Initial Vol:	0	0	0		20	0	8		7	935	0		0	785	25		
ApproachDel:	xxxxxx				30.1				xxxxxx				xxxxxx				

Approach[southbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=28]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1780]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + Reduce Dens Alt AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #9 Eight Mile Road & Ham Lane

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	1	0	0	0	1	1	0	2	0	0	0	0	1	1	0
Initial Vol:	0		0		0	20		0		8	7		935		0	0		785		25

Major Street Volume: 1752
Minor Approach Volume: 28
Minor Approach Volume Threshold: 133 [less than minimum of 150]

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + Reduce Dens Alt AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	103		1		434	106		0		0		0		0	14		0		295
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					11.8				

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.0]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=309]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=953]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + Reduce Dens Alt AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	103			1	434	106			0	0		0		0	14		0		295

Major Street Volume: 644
Minor Approach Volume: 309
Minor Approach Volume Threshold: 431

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + Reduce Dens Alt AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	152	205			0	0	316		229		136		0		50	0		0		0
ApproachDel:	xxxxxx					xxxxxx					27.8					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.4]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=186]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1088]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + Reduce Dens Alt AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	152	205		0		0	316		229		136		0		50	0		0		0

Major Street Volume: 902
Minor Approach Volume: 186
Minor Approach Volume Threshold: 418

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Reduce Dens Alt AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #20 SR99 W Front & SB Ramps Morada

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	62	835		31	50		0		0	0		0		282	0		19		
ApproachDel:	xxxxxx				xxxxxx				xxxxxx					31.8						

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=2.7]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=301]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1279]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + Reduce Dens Alt AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #20 SR99 W Front & SB Ramps Morada

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	62	835			31	50		0		0	0		0		282	0		19	

Major Street Volume: 978
Minor Approach Volume: 301
Minor Approach Volume Threshold: 299

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + Reduce Dens Alt AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #21 SR99 E Front & NB Ramps Morada

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0
Initial Vol:	230	451		0		0	511		2		95		0	242		0		0		0
ApproachDel:	xxxxxx					xxxxxx					65.7					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=6.2]
   SUCCEED - Vehicle-hours >= 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=337]
   SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1531]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Reduce Dens Alt AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #21 SR99 E Front & NB Ramps Morada

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0 0	0	0 0	0 1	0	1 0	0 0	1	0 0	0 0	0
Initial Vol:	230	451	0	0	511	2	95	0	242	0	0	0

Major Street Volume: 1194
Minor Approach Volume: 337
Minor Approach Volume Threshold: 237

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.036
Loss Time (sec):	12	Average Delay (sec/veh):	59.8
Optimal Cycle:	180	Level Of Service:	E

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T	- R		L - T	- R		L - T	- R		L - T	- R	
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	0 1	0	1 0	2 0	1	1 0	1 1	0
Volume Module:AM Peak Hour												
Base Vol:	836	46	103	5	26	229	169	983	326	80	1148	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	836	46	103	5	26	229	169	983	326	80	1148	14
Added Vol:	0	0	4	0	0	0	0	23	0	7	44	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	836	46	107	5	26	229	169	1006	326	87	1192	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	909	50	116	5	28	249	184	1093	354	95	1296	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	909	50	116	5	28	249	184	1093	354	95	1296	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	909	50	116	5	28	249	184	1093	354	95	1296	15
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.85	0.85	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	2.00	1.00	1.00	1.00	0.10	0.90	1.00	2.00	1.00	1.00	1.98	0.02
Final Sat.:	3432	1862	1583	1769	164	1446	1769	3538	1583	1769	3490	41
Capacity Analysis Module:												
Vol/Sat:	0.26	0.03	0.07	0.00	0.17	0.17	0.10	0.31	0.22	0.05	0.37	0.37
Crit Moves:	****				****		****				****	
Green/Cycle:	0.26	0.40	0.40	0.02	0.17	0.17	0.10	0.39	0.39	0.07	0.36	0.36
Volume/Cap:	1.04	0.07	0.18	0.18	1.04	1.04	1.04	0.79	0.57	0.79	1.04	1.04
Delay/Veh:	77.4	18.2	19.3	51.4	107	106.5	122.5	30.0	25.2	74.9	67.3	67.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	77.4	18.2	19.3	51.4	107	106.5	122.5	30.0	25.2	74.9	67.3	67.3
LOS by Move:	E	B	B	D	F	F	F	C	C	E	E	E
HCM2k95thQ:	913	38	95	19	630	630	369	654	349	155	1103	1103

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	1	0 1	1	0	0	1 0	1	0	2	0 1	1	0	1	1 0
Lane Group:	L		T	R	L		RT	RT	L		T	R	L		RT	RT
#LnsInGrps:	2		1	1	1		1	1	1		2	1	1		2	2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.87	0.87		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.85	0.85		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	0.95	
Fnl Sat Adj:	0.90	0.98	0.83		0.93	0.85	0.85		0.93	0.93	0.83		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.26	0.40	0.40		0.02	0.17	0.17		0.10	0.39	0.39		0.07	0.36	0.36	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.78	0.79		1.00	1.00	1.00		1.00	0.92	0.87		0.99	1.00	1.00	
Q1:	13.0	0.7	1.6		0.1	7.7	7.7		5.1	13.0	6.7		2.6	19.2	19.2	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.48	0.48	0.48		0.61	0.61	0.61	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.87	0.87	0.87		0.76	0.76	0.76	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.23	0.53	0.48		0.16	0.44	0.44	
Q2:	8.7	0.1	0.2		0.2	6.5	6.5		2.7	1.8	0.6		0.5	7.9	7.9	
HCM2KQueue:	21.8	0.7	1.9		0.4	14.2	14.2		7.8	14.8	7.4		3.1	27.0	27.0	
70th%Factor:	1.16	1.20	1.20		1.20	1.17	1.17		1.18	1.17	1.18		1.19	1.15	1.15	
HCM2k70thQ:	25.2	0.9	2.2		0.4	16.6	16.6		9.2	17.4	8.7		3.7	31.1	31.1	
85th%Factor:	1.45	1.59	1.58		1.60	1.49	1.49		1.53	1.48	1.53		1.57	1.42	1.42	
HCM2k85thQ:	31.4	1.2	3.0		0.6	21.1	21.1		12.0	22.0	11.3		4.8	38.4	38.4	
90th%Factor:	1.53	1.79	1.76		1.79	1.60	1.60		1.67	1.59	1.68		1.74	1.50	1.50	
HCM2k90thQ:	33.4	1.3	3.3		0.6	22.7	22.7		13.1	23.6	12.3		5.4	40.6	40.6	
95th%Factor:	1.68	2.08	2.04		2.09	1.77	1.77		1.89	1.76	1.90		2.01	1.63	1.63	
HCM2k95thQ:	36.5	1.5	3.8		0.7	25.2	25.2		14.8	26.2	14.0		6.2	44.1	44.1	
98th%Factor:	1.89	2.65	2.57		2.67	2.03	2.03		2.25	2.02	2.27		2.49	1.83	1.83	
HCM2k98thQ:	41.1	1.9	4.8		1.0	28.9	28.9		17.6	30.0	16.7		7.7	49.3	49.3	

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.852
Loss Time (sec):	12	Average Delay (sec/veh):	35.6
Optimal Cycle:	91	Level Of Service:	D

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	1	0	0	1	0	1	0	1	1	0	1	0	2	0	1
Volume Module:	AM Peak Hour											
Base Vol:	251	120	150	6	161	68	111	957	163	134	780	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	251	120	150	6	161	68	111	957	163	134	780	6
Added Vol:	0	0	11	0	0	0	0	26	0	22	51	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	251	120	161	6	161	68	111	983	163	156	831	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	273	130	175	7	175	74	121	1068	177	170	903	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	273	130	175	7	175	74	121	1068	177	170	903	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	273	130	175	7	175	74	121	1068	177	170	903	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.94	0.94	0.93	0.91	0.91	0.93	0.93	0.83
Lanes:	1.00	1.00	1.00	1.00	0.70	0.30	1.00	1.72	0.28	1.00	2.00	1.00
Final Sat.:	1769	1862	1583	1769	1250	528	1769	2971	493	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.15	0.07	0.11	0.00	0.14	0.14	0.07	0.36	0.36	0.10	0.26	0.00
Crit Moves:	****				****			****		****		
Green/Cycle:	0.18	0.33	0.33	0.01	0.16	0.16	0.11	0.42	0.42	0.11	0.42	0.42
Volume/Cap:	0.85	0.21	0.33	0.33	0.85	0.85	0.61	0.85	0.85	0.85	0.61	0.01
Delay/Veh:	58.8	24.0	25.3	58.7	61.3	61.3	47.5	31.1	31.1	71.5	23.2	16.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	58.8	24.0	25.3	58.7	61.3	61.3	47.5	31.1	31.1	71.5	23.2	16.8
LOS by Move:	E	C	C	E	E	E	D	C	C	E	C	B
HCM2k95thQ:	495	125	182	30	467	467	167	735	735	364	471	5

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	1	0	1	0	1		1	0	0	1	0		1	0	1	1	0		1	0	2	0	1	
Lane Group:	L		T		R		L		RT		RT		L		RT		RT		L		T		R	
#LnsInGrps:	1		1		1		1		1		1		1		2		2		1		2		1	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:	8						8						8						8					
% Hev Veh:	2						2						2						2					
Grade:	0%						0%						0%						0%					
Parking/Hr:	No						No						No						No					
Bus Stp/Hr:	0						0						0						0					
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:	0						0						0						0					
ExclusiveRT:	Include						Include						Include						Include					
% RT Prtct:	0						0						0						0					
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx		
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
Hev Veh Adj:	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98
Grade Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
Parking Adj:	xxxx	xxxx		1.00		xxxx	1.00	1.00		xxxx		1.00	xxxx	1.00		1.00		xxxx	xxxx	xxxx		xxxx		1.00
Bus Stp Adj:	xxxx	xxxx		1.00		xxxx	1.00	1.00		xxxx		1.00	xxxx	1.00		1.00		xxxx	xxxx	xxxx		xxxx		1.00
Area Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
RT Adj:	xxxx	xxxx		0.85		xxxx	0.96	0.96		xxxx		0.98	0.98	xxxx		xxxx		0.85	xxxx	xxxx		xxxx		0.85
LT Adj:	0.95	xxxx		xxxxx		0.95	xxxx	xxxxx		0.95		xxxx	xxxxx			0.95		xxxx	xxxxx			xxxx		xxxxx
PedBike Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
HCM Sat Adj:	0.93	0.98		0.83		0.93	0.94	0.94		0.93		0.96	0.96	0.93		0.98		0.83						
Usr Sat Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00						
MLF Sat Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	0.95		0.95		1.00	0.95	1.00				
Fnl Sat Adj:	0.93	0.98		0.83		0.93	0.94	0.94		0.93		0.91	0.91	0.93		0.93		0.83						
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00				

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.18	0.33	0.33	0.01	0.16	0.16	0.11	0.42	0.42	0.11	0.42	0.42
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.85	0.87	1.00	0.99	0.99	0.98	0.93	0.93	0.99	0.85	0.76
Q1:	7.2	2.2	3.2	0.2	6.6	6.6	3.1	15.3	15.3	4.6	8.8	0.1
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.79	0.79	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.14	0.32	0.32	1.00	1.00	1.00
Q2:	3.6	0.3	0.5	0.4	3.5	3.5	0.2	1.7	1.7	3.1	1.5	0.0
HCM2KQueue:	10.8	2.5	3.7	0.6	10.1	10.1	3.3	17.0	17.0	7.7	10.2	0.1
70th%Factor:	1.18	1.19	1.19	1.20	1.18	1.18	1.19	1.17	1.17	1.18	1.18	1.20
HCM2k70thQ:	12.7	3.0	4.3	0.7	11.9	11.9	4.0	19.8	19.8	9.1	12.1	0.1
85th%Factor:	1.51	1.58	1.57	1.59	1.51	1.51	1.57	1.47	1.47	1.53	1.51	1.60
HCM2k85thQ:	16.3	3.9	5.7	0.9	15.3	15.3	5.3	24.9	24.9	11.8	15.5	0.1
90th%Factor:	1.63	1.75	1.73	1.79	1.64	1.64	1.74	1.57	1.57	1.67	1.64	1.80
HCM2k90thQ:	17.7	4.3	6.3	1.0	16.6	16.6	5.8	26.7	26.7	12.9	16.8	0.2
95th%Factor:	1.83	2.02	1.99	2.08	1.84	1.84	2.00	1.73	1.73	1.89	1.84	2.10
HCM2k95thQ:	19.8	5.0	7.3	1.2	18.7	18.7	6.7	29.4	29.4	14.6	18.8	0.2
98th%Factor:	2.13	2.53	2.46	2.66	2.16	2.16	2.47	1.97	1.97	2.25	2.16	2.69
HCM2k98thQ:	23.1	6.3	9.0	1.5	21.9	21.9	8.3	33.4	33.4	17.4	22.1	0.2

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.003
Loss Time (sec):	12	Average Delay (sec/veh):	50.8
Optimal Cycle:	180	Level Of Service:	D

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:	AM Peak Hour											
Base Vol:	44	268	393	57	412	103	86	1020	21	311	814	61
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	268	393	57	412	103	86	1020	21	311	814	61
Added Vol:	0	0	30	8	0	0	0	38	0	58	73	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	44	268	423	65	412	103	86	1058	21	369	887	76
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	48	291	460	71	448	112	93	1150	23	401	964	83
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	48	291	460	71	448	112	93	1150	23	401	964	83
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	48	291	460	71	448	112	93	1150	23	401	964	83
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.98	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3432	1862	1583	1769	1862	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.01	0.16	0.29	0.04	0.24	0.07	0.05	0.33	0.01	0.23	0.27	0.05
Crit Moves:			****	****				****		****		
Green/Cycle:	0.02	0.29	0.29	0.04	0.31	0.31	0.09	0.32	0.32	0.23	0.46	0.46
Volume/Cap:	0.77	0.54	1.00	1.00	0.77	0.23	0.59	1.00	0.04	1.00	0.59	0.11
Delay/Veh:	93.0	31.0	78.2	155.9	37.5	25.7	49.6	61.0	23.2	84.3	20.5	15.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	93.0	31.0	78.2	155.9	37.5	25.7	49.6	61.0	23.2	84.3	20.5	15.4
LOS by Move:	F	C	E	F	D	C	D	E	C	F	C	B
HCM2k95thQ:	104	351	864	242	605	117	185	1053	22	785	458	56

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	1	0	1	0	1	0	1	0	2	0	1	0	2	0
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	1	1		1	1	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.90	0.98	0.83		0.93	0.98	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.02	0.29	0.29		0.04	0.31	0.31		0.09	0.32	0.32		0.23	0.46	0.46	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.92	1.00		1.00	0.95	0.87		0.99	1.00	0.84		1.00	0.82	0.73	
Q1:	0.7	6.3	12.8		2.0	10.7	2.0		2.5	16.8	0.4		11.1	8.5	1.0	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	1.4	1.1	7.7		3.0	2.9	0.3		1.3	8.8	0.0		7.1	1.4	0.1	
HCM2KQueue:	2.0	7.4	20.4		4.9	13.6	2.3		3.7	25.6	0.4		18.3	9.9	1.1	
70th%Factor:	1.20	1.18	1.16		1.19	1.17	1.19		1.19	1.15	1.20		1.16	1.18	1.20	
HCM2k70thQ:	2.4	8.8	23.7		5.9	15.9	2.7		4.4	29.5	0.5		21.3	11.7	1.3	
85th%Factor:	1.58	1.53	1.45		1.55	1.49	1.58		1.57	1.43	1.60		1.46	1.52	1.59	
HCM2k85thQ:	3.2	11.4	29.7		7.7	20.3	3.6		5.8	36.6	0.7		26.8	15.1	1.7	
90th%Factor:	1.76	1.68	1.54		1.71	1.60	1.76		1.73	1.51	1.79		1.56	1.64	1.78	
HCM2k90thQ:	3.6	12.4	31.5		8.5	21.8	4.0		6.4	38.7	0.7		28.5	16.3	1.9	
95th%Factor:	2.04	1.90	1.69		1.96	1.78	2.03		1.99	1.64	2.09		1.72	1.85	2.07	
HCM2k95thQ:	4.2	14.1	34.6		9.7	24.2	4.7		7.4	42.1	0.9		31.4	18.3	2.2	
98th%Factor:	2.55	2.27	1.91		2.38	2.05	2.54		2.45	1.84	2.67		1.94	2.17	2.62	
HCM2k98thQ:	5.2	16.8	39.0		11.8	27.9	5.8		9.1	47.1	1.1		35.6	21.5	2.8	

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.646
Loss Time (sec):	12	Average Delay (sec/veh):	32.3
Optimal Cycle:	53	Level Of Service:	C

Street Name:	West Lane						Armstrong Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	0 0	1!	0 0	0 0	1!	0 0
Volume Module:AM Peak Hour												
Base Vol:	4	387	76	203	525	33	45	172	5	60	97	96
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	387	76	203	525	33	45	172	5	60	97	96
Added Vol:	0	29	0	0	15	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	416	76	203	540	33	45	172	5	60	97	96
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	4	452	83	221	587	36	49	187	5	65	105	104
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	452	83	221	587	36	49	187	5	65	105	104
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	452	83	221	587	36	49	187	5	65	105	104
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.91	0.91	0.93	0.92	0.92	0.97	0.97	0.97	0.92	0.92	0.92
Lanes:	1.00	1.69	0.31	1.00	1.88	0.12	0.20	0.78	0.02	0.24	0.38	0.38
Final Sat.:	1769	2923	534	1769	3304	202	373	1424	41	414	669	662
Capacity Analysis Module:												
Vol/Sat:	0.00	0.15	0.15	0.12	0.18	0.18	0.13	0.13	0.13	0.16	0.16	0.16
Crit Moves:		****		****				****			****	
Green/Cycle:	0.01	0.24	0.24	0.19	0.43	0.43	0.20	0.20	0.20	0.24	0.24	0.24
Volume/Cap:	0.42	0.65	0.65	0.65	0.42	0.42	0.65	0.65	0.65	0.65	0.65	0.65
Delay/Veh:	74.2	36.0	36.0	41.4	20.2	20.2	40.4	40.4	40.4	37.3	37.3	37.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	74.2	36.0	36.0	41.4	20.2	20.2	40.4	40.4	40.4	37.3	37.3	37.3
LOS by Move:	E	D	D	D	C	C	D	D	D	D	D	D
HCM2k95thQ:	30	393	393	338	283	283	359	359	359	385	385	385

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	1	1	0	1 0	1	1	0	0 0	1!	0	0	0 0	1!	0	0
Lane Group:	L	RT		RT	L	RT		RT	LTR	LTR		LTR	LTR	LTR		LTR
#LnsInGrps:	1	2		2	1	2		2	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		4	4		4	4	4		4
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98		0.98	0.98	0.98		0.98
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
RT Adj:	xxxx	0.98	0.98		xxxx	0.99	0.99		1.00	1.00		1.00	0.95	0.95		0.95
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.99	0.99		0.99	0.99	0.99		0.99
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
HCM Sat Adj:	0.93	0.96	0.96		0.93	0.97	0.97		0.97	0.97		0.97	0.92	0.92		0.92
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
MLF Sat Adj:	1.00	0.95	0.95		1.00	0.95	0.95		1.00	1.00		1.00	1.00	1.00		1.00
Fnl Sat Adj:	0.93	0.91	0.91		0.93	0.92	0.92		0.97	0.97		0.97	0.92	0.92		0.92
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.01	0.24	0.24	0.19	0.43	0.43	0.20	0.20	0.20	0.24	0.24	0.24
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.95	0.95	0.97	0.81	0.81	0.96	0.96	0.96	0.95	0.95	0.95
Q1:	0.1	6.7	6.7	5.5	5.1	5.1	5.9	5.9	5.9	6.5	6.5	6.5
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.4	1.7	1.7	1.6	0.7	0.7	1.7	1.7	1.7	1.7	1.7	1.7
HCM2KQueue:	0.6	8.4	8.4	7.1	5.8	5.8	7.6	7.6	7.6	8.2	8.2	8.2
70th%Factor:	1.20	1.18	1.18	1.18	1.19	1.19	1.18	1.18	1.18	1.18	1.18	1.18
HCM2k70thQ:	0.7	9.9	9.9	8.4	6.9	6.9	9.0	9.0	9.0	9.7	9.7	9.7
85th%Factor:	1.59	1.53	1.53	1.54	1.55	1.55	1.53	1.53	1.53	1.53	1.53	1.53
HCM2k85thQ:	0.9	12.8	12.8	10.9	9.0	9.0	11.6	11.6	11.6	12.5	12.5	12.5
90th%Factor:	1.79	1.66	1.66	1.68	1.70	1.70	1.67	1.67	1.67	1.67	1.67	1.67
HCM2k90thQ:	1.0	13.9	13.9	11.9	9.9	9.9	12.7	12.7	12.7	13.7	13.7	13.7
95th%Factor:	2.08	1.88	1.88	1.90	1.93	1.93	1.89	1.89	1.89	1.88	1.88	1.88
HCM2k95thQ:	1.2	15.7	15.7	13.5	11.3	11.3	14.4	14.4	14.4	15.4	15.4	15.4
98th%Factor:	2.66	2.22	2.22	2.28	2.34	2.34	2.26	2.26	2.26	2.23	2.23	2.23
HCM2k98thQ:	1.5	18.6	18.6	16.2	13.7	13.7	17.1	17.1	17.1	18.3	18.3	18.3

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.278
Loss Time (sec): 9 Average Delay (sec/veh): 8.6
Optimal Cycle: 25 Level Of Service: A

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Volume Module:	AM Peak Hour											
Base Vol:	1	2	30	34	6	32	4	461	0	14	612	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	2	30	34	6	32	4	461	0	14	612	18
Added Vol:	0	0	1	0	0	0	0	28	0	0	15	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	2	31	34	6	32	4	489	0	14	627	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	1	2	34	37	7	35	4	532	0	15	682	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	2	34	37	7	35	4	532	0	15	682	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	2	34	37	7	35	4	532	0	15	682	20
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.86	0.86	0.86	0.80	0.80	0.80	0.93	0.93	0.95	0.93	0.93	0.93
Lanes:	0.03	0.06	0.91	0.48	0.08	0.44	1.00	2.00	0.00	1.00	1.94	0.06
Final Sat.:	48	96	1483	714	126	672	1769	3538	0	1769	3425	98
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.05	0.05	0.05	0.00	0.15	0.00	0.01	0.20	0.20
Crit Moves:					****		****				****	
Green/Cycle:	0.19	0.19	0.19	0.19	0.19	0.19	0.01	0.68	0.00	0.04	0.72	0.72
Volume/Cap:	0.12	0.12	0.12	0.28	0.28	0.28	0.28	0.22	0.00	0.22	0.28	0.28
Delay/Veh:	34.1	34.1	34.1	35.5	35.5	35.5	58.7	5.9	0.0	48.2	5.1	5.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.1	34.1	34.1	35.5	35.5	35.5	58.7	5.9	0.0	48.2	5.1	5.1
LOS by Move:	C	C	C	D	D	D	E	A	A	D	A	A
HCM2k95thQ:	48	48	48	109	109	109	23	58	0	35	54	54

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	1	1 0	1	0	1	1 0
Lane Group:	LTR	LTR	LTR	LTR	LTR	LTR	L	RT	RT	L	RT	RT				
#LnsInGrps:	1	1	1	1	1	1	1	2	2	1	2	2				
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12				
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	5	5	5	5	5	5	1	xxxx	xxxx	1	xxxx	xxxx				
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	xxxxx	1.00	1.00	1.00				
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	xxxxx	0.98	0.98	0.98				
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	xxxxx	1.00	1.00	1.00				
Parking Adj:	1.00	1.00	1.00	1.00	1.00	1.00	xxxx	1.00	xxxxx	xxxx	1.00	1.00				
Bus Stp Adj:	1.00	1.00	1.00	1.00	1.00	1.00	xxxx	1.00	xxxxx	xxxx	1.00	1.00				
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	xxxxx	1.00	1.00	1.00				
RT Adj:	0.88	0.88	0.88	0.94	0.94	0.94	xxxx	xxxx	xxxxx	xxxx	1.00	1.00				
LT Adj:	1.00	1.00	1.00	0.86	0.86	0.86	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx				
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
HCM Sat Adj:	0.86	0.86	0.86	0.80	0.80	0.80	0.93	0.98	1.00	0.93	0.98	0.98				
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95				
Fnl Sat Adj:	0.86	0.86	0.86	0.80	0.80	0.80	0.93	0.93	0.95	0.93	0.93	0.93				
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00				

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	100	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	17.59	17.59	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	18.59	18.59	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	18.59	18.59	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	1	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	1	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	1	37	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	0.03	0.47	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	0.47	0.03	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	0.03	1.03	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	78	37	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	2.17	1.03	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	1.33	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	3.00	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	13.00	4.34	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	0.75	0.75	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	3.59	0.73	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	5.59	14.25	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	0.00	0.00	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	0.53	0.97	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	1.52	1.46	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	1.00	1.00	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	0.11	0.16	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	1.00	0.86	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	1.00	0.86	xxxxxx	xxxxxx

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.19	0.19	0.19	0.19	0.19	0.19	0.01	0.68	0.00	0.04	0.72	0.72
ArrivalType:		4			4			4			4	
ProgFactor:	0.93	0.93	0.93	0.94	0.94	0.94	1.00	0.29	1.00	0.99	0.18	0.18
Q1:	0.8	0.8	0.8	1.8	1.8	1.8	0.1	0.8	0.0	0.4	0.7	0.7
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Q2:	0.1	0.1	0.1	0.4	0.4	0.4	0.3	0.3	0.0	0.3	0.4	0.4
HCM2KQueue:	0.9	0.9	0.9	2.1	2.1	2.1	0.4	1.1	0.0	0.7	1.0	1.0
70th%Factor:	1.20	1.20	1.20	1.19	1.19	1.19	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	1.1	1.1	1.1	2.6	2.6	2.6	0.5	1.4	0.0	0.8	1.2	1.2
85th%Factor:	1.59	1.59	1.59	1.58	1.58	1.58	1.60	1.59	1.60	1.59	1.59	1.59
HCM2k85thQ:	1.5	1.5	1.5	3.4	3.4	3.4	0.7	1.8	0.0	1.1	1.6	1.6
90th%Factor:	1.78	1.78	1.78	1.76	1.76	1.76	1.79	1.78	1.80	1.79	1.78	1.78
HCM2k90thQ:	1.7	1.7	1.7	3.8	3.8	3.8	0.8	2.0	0.0	1.2	1.8	1.8
95th%Factor:	2.07	2.07	2.07	2.03	2.03	2.03	2.09	2.06	2.10	2.08	2.07	2.07
HCM2k95thQ:	1.9	1.9	1.9	4.3	4.3	4.3	0.9	2.3	0.0	1.4	2.1	2.1
98th%Factor:	2.63	2.63	2.63	2.55	2.55	2.55	2.67	2.62	2.70	2.65	2.62	2.62
HCM2k98thQ:	2.5	2.5	2.5	5.4	5.4	5.4	1.2	3.0	0.0	1.8	2.7	2.7

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	1.041
Loss Time (sec):	12	Average Delay (sec/veh):	59.0
Optimal Cycle:	180	Level Of Service:	E

Street Name:	West Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:	AM Peak Hour											
Base Vol:	398	273	64	31	445	185	194	735	522	106	584	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	398	273	64	31	445	185	194	735	522	106	584	8
Added Vol:	62	12	52	8	7	0	0	41	34	78	83	16
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	460	285	116	39	452	185	194	776	556	184	667	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	500	310	126	42	491	201	211	843	604	200	725	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	500	310	126	42	491	201	211	843	604	200	725	26
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	500	310	126	42	491	201	211	843	604	200	725	26
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.28	0.09	0.08	0.02	0.14	0.13	0.12	0.24	0.38	0.11	0.20	0.02
Crit Moves:	****				****				****	****		
Green/Cycle:	0.27	0.32	0.32	0.09	0.13	0.13	0.17	0.37	0.37	0.11	0.30	0.30
Volume/Cap:	1.04	0.28	0.25	0.28	1.04	0.95	0.68	0.65	1.04	1.04	0.68	0.05
Delay/Veh:	88.7	25.6	25.5	43.7	96.0	91.5	44.8	27.5	80.2	120.8	32.6	24.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.7	25.6	25.5	43.7	96.0	91.5	44.8	27.5	80.2	120.8	32.6	24.9
LOS by Move:	F	C	C	D	F	F	D	C	F	F	C	C
HCM2k95thQ:	868	158	122	74	604	459	343	502	1107	405	451	25

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	2	0	1	1	0	2	0	1	1	0	2	0	1	1
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	2	1		1	2	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.27	0.32	0.32		0.09	0.13	0.13		0.17	0.37	0.37		0.11	0.30	0.30	
ArrivalType:	4				4				4				4			
ProgFactor:	1.00	0.87	0.87		0.98	1.00	1.00		0.97	0.90	1.00		1.00	0.94	0.86	
Q1:	13.9	3.0	2.3		1.1	7.2	5.5		5.3	9.2	16.8		5.6	8.7	0.4	
UpstreamVC:	0.39	0.39	0.39		0.00	0.00	0.00		0.00	0.00	0.00		0.32	0.32	0.32	
UpstreamAdj:	0.93	0.93	0.93		0.00	0.00	0.00		0.00	0.00	0.00		0.96	0.96	0.96	
EarlyArrAdj:	0.44	0.50	0.45		1.00	1.00	1.00		1.00	1.00	1.00		0.26	0.50	0.45	
Q2:	6.6	0.2	0.2		0.4	6.4	4.4		1.9	1.8	10.3		3.1	1.0	0.0	
HCM2KQueue:	20.5	3.1	2.4		1.4	13.5	10.0		7.2	11.0	27.1		8.7	9.8	0.5	
70th%Factor:	1.16	1.19	1.19		1.20	1.17	1.18		1.18	1.18	1.15		1.18	1.18	1.20	
HCM2k70thQ:	23.8	3.7	2.9		1.7	15.9	11.7		8.5	12.9	31.2		10.2	11.5	0.6	
85th%Factor:	1.45	1.57	1.58		1.59	1.49	1.52		1.54	1.51	1.42		1.52	1.52	1.60	
HCM2k85thQ:	29.8	4.9	3.8		2.3	20.2	15.1		11.1	16.6	38.5		13.2	14.8	0.8	
90th%Factor:	1.54	1.74	1.75		1.77	1.60	1.64		1.68	1.63	1.50		1.66	1.65	1.79	
HCM2k90thQ:	31.7	5.5	4.2		2.6	21.7	16.4		12.1	17.9	40.7		14.4	16.1	0.8	
95th%Factor:	1.69	2.00	2.02		2.05	1.78	1.85		1.90	1.83	1.63		1.87	1.85	2.08	
HCM2k95thQ:	34.7	6.3	4.9		3.0	24.2	18.4		13.7	20.1	44.3		16.2	18.0	1.0	
98th%Factor:	1.91	2.49	2.53		2.59	2.05	2.16		2.27	2.13	1.82		2.21	2.17	2.66	
HCM2k98thQ:	39.1	7.8	6.1		3.8	27.8	21.6		16.4	23.4	49.5		19.2	21.2	1.3	

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: D[30.1]

Street Name:	Ham Lane							Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R	
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled			
Rights:	Include			Include			Include			Include			
Lanes:	0 0 0 0 0			1 0 0 0 1			1 0 2 0 0			0 0 1 1 0			
Volume Module:AM Peak Hour													
Base Vol:	0	0	0	20	0	8	7	772	0	0	632	24	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Initial Bse:	0	0	0	20	0	8	7	772	0	0	632	24	
Added Vol:	0	0	0	0	0	0	0	163	0	0	153	1	
Pass-By:	0	0	0	0	0	0	0	0	0	0	0	0	
Initial Fut:	0	0	0	20	0	8	7	935	0	0	785	25	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
PHF Volume:	0	0	0	22	0	9	8	1016	0	0	853	27	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
FinalVolume:	0	0	0	22	0	9	8	1016	0	0	853	27	
Critical Gap Module:													
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Capacity Module:													
Cnflict Vol:	xxxx	xxxx	xxxxx	1390	xxxx	440	880	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	xxxxx	133	xxxx	565	763	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	xxxxx	132	xxxx	565	763	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	xxxx	0.16	xxxx	0.02	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	
Level Of Service Module:													
2Way95thQ:	xxxx	xxxx	xxxxx	14.2	xxxx	1.2	0.8	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx	37.5	xxxx	11.5	9.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*	E	*	B	A	*	*	*	*	*	
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*	
ApproachDel:	xxxxxx			30.1			xxxxxx			xxxxxx			
ApproachLOS:	*			D			*			*			

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R	
HevVeh:	2%			2%			2%			2%			
Grade:	0%			0%			0%			0%			
Peds/Hour:	0			0			0			0			
Pedestrian Walk Speed: 4.00 feet/sec													
LaneWidth:	12 feet			12 feet			12 feet			12 feet			
Time Period: 0.25 hour													
Upstream Signals:													
Link Index:							#23			#26			
Dist(miles):							0.250			0.250			
Speed (mph):							1.00			1.00			
SignalIndex:							#53			#10			
Cycle Time:							100 secs			100 secs			
InitVolume:							0	876		71	733		
Saturation:							0	3538		1769	3506		
ArrivalType:							0	4		4	4		
G/C:							0.00	0.64		0.12	0.74		
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection													
P:							0.000	0.854		0.155	0.990		
gq1:							0.00	3.62		3.39	0.21		
gq2:							0.00	1.78		0.19	0.08		
gq:							0.00	5.41		3.58	0.29		
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons													
alpha:							0.500			0.500			
beta:							0.667			0.667			
ta (secs):							900.000			900.000			
F:							0.003			0.003			
f:							1.000	1.000		1.000	1.000		
vcmax:							0	63		21	3		
vcg:							0	259		23	216		
vcmin:							2000	2000		2000	2000		
tp:							0.0	0.0		0.0	0.0		
p:							0.000			0.000			
*** Computation 3: Platoon Event Periods													
pdom/psubo:							0.000/0.000/Unconstrained						
*** Computation 4: Conflicting Flows During Each Unblocked Period													
InitCnflVol:	1458	1912	508	1390	1898	440	880	xxxxx	xxxxx	0	xxxxx	xxxxx	
AdjCnflVol:	1458	1912	508	1390	1898	440	880	xxxxx	xxxxx	0	xxxxx	xxxxx	
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	
ConflictVol:	1458	1912	508	1390	1898	440	880	xxxxx	xxxxx	0	xxxxx	xxxxx	
*** Computation 5: Capacity for Subject Movement During Unblocked Period													
InitPotCap:	91	67	510	133	69	565	763	xxxxx	xxxxx	1622	xxxxx	xxxxx	
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	
Potent Cap.:	91	67	510	133	69	565	763	xxxxx	xxxxx	1622	xxxxx	xxxxx	

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St J

Cycle (sec):	100	Critical Vol./Cap.(X):	0.461
Loss Time (sec):	12	Average Delay (sec/veh):	9.5
Optimal Cycle:	38	Level Of Service:	A

Street Name:	Leach Road/Street J						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	5	0	6	5	908	0	0	650	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	5	0	6	5	908	0	0	650	6
Added Vol:	71	0	81	0	0	0	0	140	24	27	83	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	71	0	81	5	0	6	5	1048	24	27	733	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	77	0	88	5	0	7	5	1139	26	29	797	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	77	0	88	5	0	7	5	1139	26	29	797	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	77	0	88	5	0	7	5	1139	26	29	797	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	0.93	1.00	0.83	0.93	0.93	0.93	0.93	0.93	0.93
Lanes:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.96	0.04	1.00	1.98	0.02
Final Sat.:	1769	0	1583	1769	0	1583	1769	3448	79	1769	3506	29
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.06	0.00	0.00	0.00	0.00	0.33	0.33	0.02	0.23	0.23
Crit Moves:			****	****				****		****		
Green/Cycle:	0.12	0.00	0.12	0.01	0.00	0.01	0.01	0.72	0.72	0.04	0.74	0.74
Volume/Cap:	0.37	0.00	0.46	0.46	0.00	0.62	0.31	0.46	0.46	0.46	0.31	0.31
Delay/Veh:	42.0	0.0	42.7	75.4	0.0	127.4	58.7	6.1	6.1	52.5	4.4	4.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.0	0.0	42.7	75.4	0.0	127.4	58.7	6.1	6.1	52.5	4.4	4.4
LOS by Move:	D	A	D	E	A	F	E	A	A	D	A	A
HCM2k95thQ:	126	0	152	35	0	45	9	104	104	78	32	32

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	0 1	0	1	0	0 1	0	1	0	1 1	0	1	0	1 1	0	1
Lane Group:	L	RT	RT		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	2	2		1	2	2	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	xxxx	0.98		0.98	xxxx	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	1.00	1.00		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	1.00	0.83		0.93	1.00	0.83		0.93	0.98	0.98		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	0.95		1.00	0.95	0.95	
Fnl Sat Adj:	0.93	1.00	0.83		0.93	1.00	0.83		0.93	0.93	0.93		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	1.00		1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.12	0.00	0.12	0.01	0.00	0.01	0.01	0.72	0.72	0.04	0.74	0.74
ArrivalType:		4			4			4			4	
ProgFactor:	0.97	1.00	0.97	1.00	1.00	1.00	1.00	0.19	0.19	0.99	0.04	0.04
Q1:	1.9	0.0	2.2	0.2	0.0	0.2	0.1	1.4	1.4	0.8	0.2	0.2
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.42	0.42	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.91	0.91	0.91	0.00	0.00	0.00
EarlyArrAdj:	1.00	0.00	1.00	1.00	0.00	1.00	0.06	0.79	0.79	1.00	1.00	1.00
Q2:	0.6	0.0	0.8	0.5	0.0	0.7	0.0	0.7	0.7	0.7	0.4	0.4
HCM2KQueue:	2.5	0.0	3.0	0.7	0.0	0.9	0.2	2.0	2.0	1.5	0.6	0.6
70th%Factor:	1.19	1.20	1.19	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	3.0	0.0	3.6	0.8	0.0	1.0	0.2	2.4	2.4	1.8	0.7	0.7
85th%Factor:	1.58	1.60	1.57	1.59	1.60	1.59	1.60	1.58	1.58	1.59	1.59	1.59
HCM2k85thQ:	3.9	0.0	4.7	1.1	0.0	1.4	0.3	3.2	3.2	2.4	1.0	1.0
90th%Factor:	1.75	1.80	1.74	1.79	1.80	1.78	1.80	1.76	1.76	1.77	1.79	1.79
HCM2k90thQ:	4.4	0.0	5.3	1.2	0.0	1.5	0.3	3.6	3.6	2.7	1.1	1.1
95th%Factor:	2.02	2.10	2.01	2.08	2.10	2.07	2.09	2.04	2.04	2.05	2.08	2.08
HCM2k95thQ:	5.1	0.0	6.1	1.4	0.0	1.8	0.4	4.1	4.1	3.1	1.3	1.3
98th%Factor:	2.52	2.70	2.49	2.65	2.70	2.64	2.69	2.56	2.56	2.59	2.65	2.65
HCM2k98thQ:	6.3	0.0	7.5	1.8	0.0	2.3	0.5	5.2	5.2	3.9	1.6	1.6

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Cycle (sec): 100 Critical Vol./Cap.(X): 0.360
Loss Time (sec): 12 Average Delay (sec/veh): 7.6
Optimal Cycle: 33 Level Of Service: A

Street Name:	Micke Grove Road/Holman Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	0 1	1	0 1	0 1	1	0 2	0 1	1	0 2	0 1
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	6	0	5	7	792	0	0	666	7
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	6	0	5	7	792	0	0	666	7
Added Vol:	24	0	0	0	0	26	51	121	49	0	59	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	24	0	0	6	0	31	58	913	49	0	725	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	26	0	0	7	0	34	63	992	53	0	788	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	0	0	7	0	34	63	992	53	0	788	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	26	0	0	7	0	34	63	992	53	0	788	8
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	1.00	0.93	1.00	0.83	0.93	0.93	0.83	1.00	0.93	0.83
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1769	1900	1900	1769	1900	1583	1769	3538	1583	1900	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.00	0.00	0.00	0.02	0.04	0.28	0.03	0.00	0.22	0.00
Crit Moves:	****					****		****		****		
Green/Cycle:	0.04	0.00	0.00	0.10	0.00	0.06	0.11	0.78	0.78	0.00	0.67	0.67
Volume/Cap:	0.36	0.00	0.00	0.04	0.00	0.36	0.33	0.36	0.04	0.00	0.33	0.01
Delay/Veh:	49.7	0.0	0.0	40.7	0.0	47.6	42.3	3.4	2.5	0.0	7.0	5.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.7	0.0	0.0	40.7	0.0	47.6	42.3	3.4	2.5	0.0	7.0	5.4
LOS by Move:	D	A	A	D	A	D	D	A	A	A	A	A
HCM2k95thQ:	63	0	0	10	0	73	105	29	2	0	105	1

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	1	0	1	0	1	0	1	0	2	0	1	0	2	0
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	1	1		1	1	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		xxxx	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	xxxxx		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
Hev Veh Adj:	0.98	xxxx	xxxxx		0.98	xxxx	0.98		0.98	0.98	0.98		xxxx	0.98	0.98	
Grade Adj:	1.00	xxxx	xxxxx		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
Parking Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	xxxx	xxxxx		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
RT Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		xxxx	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	1.00	1.00		0.93	1.00	0.83		0.93	0.98	0.83		1.00	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	1.00	1.00		0.93	1.00	0.83		0.93	0.93	0.83		1.00	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	0.00		1.00	0.00	1.00		1.00	1.00	1.00		0.00	1.00	1.00	

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.04	0.00	0.00		0.10	0.00	0.06		0.11	0.78	0.78		0.00	0.67	0.67	
ArrivalType:	4				4				4				4			
ProgFactor:	0.99	1.00	1.00		0.96	1.00	0.99		0.97	0.00	0.00		1.00	0.35	0.32	
Q1:	0.7	0.0	0.0		0.2	0.0	0.9		1.6	0.0	0.0		0.0	1.7	0.0	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.50	0.50	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.85	0.85	
EarlyArrAdj:	1.00	0.00	0.00		1.00	0.00	1.00		1.00	1.00	1.00		0.00	0.72	0.65	
Q2:	0.5	0.0	0.0		0.0	0.0	0.5		0.5	0.6	0.0		0.0	0.4	0.0	
HCM2KQueue:	1.2	0.0	0.0		0.2	0.0	1.4		2.1	0.6	0.0		0.0	2.1	0.0	
70th%Factor:	1.20	1.20	1.20		1.20	1.20	1.20		1.19	1.20	1.20		1.20	1.19	1.20	
HCM2k70thQ:	1.5	0.0	0.0		0.2	0.0	1.7		2.5	0.7	0.1		0.0	2.5	0.0	
85th%Factor:	1.59	1.60	1.60		1.60	1.60	1.59		1.58	1.59	1.60		1.60	1.58	1.60	
HCM2k85thQ:	1.9	0.0	0.0		0.3	0.0	2.2		3.2	0.9	0.1		0.0	3.3	0.0	
90th%Factor:	1.78	1.80	1.80		1.80	1.80	1.77		1.76	1.79	1.80		1.80	1.76	1.80	
HCM2k90thQ:	2.2	0.0	0.0		0.4	0.0	2.5		3.6	1.0	0.1		0.0	3.6	0.0	
95th%Factor:	2.06	2.10	2.10		2.09	2.10	2.05		2.04	2.08	2.10		2.10	2.04	2.10	
HCM2k95thQ:	2.5	0.0	0.0		0.4	0.0	2.9		4.2	1.2	0.1		0.0	4.2	0.1	
98th%Factor:	2.61	2.70	2.70		2.69	2.70	2.60		2.55	2.66	2.70		2.70	2.55	2.70	
HCM2k98thQ:	3.2	0.0	0.0		0.5	0.0	3.7		5.3	1.5	0.1		0.0	5.3	0.1	

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Average Delay (sec/veh): 7.7 Worst Case Level Of Service: B[11.8]

Street Name:	SR 99 West Frontage Rd						SR 99 SB Ramps (Eight Mile Rd)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 1 0 0 0			0 0 0 0 0			1 0 0 0 1		
Volume Module:AM Peak Hour												
Base Vol:	0	103	1	350	106	0	0	0	0	14	0	287
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	103	1	350	106	0	0	0	0	14	0	287
Added Vol:	0	0	0	84	0	0	0	0	0	0	0	8
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	103	1	434	106	0	0	0	0	14	0	295
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	112	1	472	115	0	0	0	0	15	0	321
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	112	1	472	115	0	0	0	0	15	0	321
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	113	xxxx	xxxxx	xxxx	xxxx	xxxxx	1171	xxxx	112
Potent Cap.:	xxxx	xxxx	xxxxx	1476	xxxx	xxxxx	xxxx	xxxx	xxxxx	213	xxxx	940
Move Cap.:	xxxx	xxxx	xxxxx	1476	xxxx	xxxxx	xxxx	xxxx	xxxxx	141	xxxx	940
Volume/Cap:	xxxx	xxxx	xxxx	0.32	xxxx	xxxx	xxxx	xxxx	xxxx	0.11	xxxx	0.34
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	34.8	xxxx	xxxxx	xxxx	xxxx	xxxxx	8.9	xxxx	38.1
Control Del:	xxxxx	xxxx	xxxxx	8.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	33.7	xxxx	10.8
LOS by Move:	*	*	*	A	*	*	*	*	*	D	*	B
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	1.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	8.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			11.8		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:	#218			#183								
Dist(miles):	0.250			0.250								
Speed (mph):	1.00			1.00								
SignalIndex:	#22			#12								
Cycle Time:	100 secs			100 secs								
InitVolume:	543	15		149	20							
Saturation:	1769	1334		1769	871							
ArrivalType:	4	4		4	4							
G/C:	0.37	0.19		0.15	0.04							
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:	0.489	0.255		0.196	0.053							
gq1:	15.68	0.84		6.77	2.17							
gq2:	10.86	0.01		0.86	0.07							
gq:	26.54	0.85		7.63	2.24							
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:	0.550			0.550								
beta:	0.645			0.645								
ta (secs):	900.000			900.000								
F:	0.003			0.003								
f:	0.203	1.000		1.000	1.000							
vcmax:	29	4		42	6							
vcg:	32	4		45	6							
vcmin:	1000	1000		1000	1000							
tp:	0.0	0.0		0.0	0.0							
p:	0.000			0.000								
*** Computation 3: Platoon Event Periods												
pdom/psubo:	0.000/0.000/Unconstrained											
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	0	xxxxx	xxxxx	113	xxxxx	xxxxx	1332	1172	115	1171	1171	112
AdjCnflVol:	0	xxxxx	xxxxx	113	xxxxx	xxxxx	1332	1172	115	1171	1171	112
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	0	xxxxx	xxxxx	113	xxxxx	xxxxx	1332	1172	115	1171	1171	112
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	1623	xxxxx	xxxxx	1476	xxxxx	xxxxx	131	192	937	213	193	940
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
Potent Cap.:	1623	xxxxx	xxxxx	1476	xxxxx	xxxxx	131	192	937	213	193	940

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Average Delay (sec/veh): 6.1 Worst Case Level Of Service: D[27.8]

Street Name:	SR 99 East Frontage Rd								SR 99 NB Ramps (Eight Mile Rd)							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Volume Module: AM Peak Hour																				
Base Vol:	152	197	0	0	301	214	96	0	50	0	0	0								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	152	197	0	0	301	214	96	0	50	0	0	0								
Added Vol:	0	8	0	0	15	15	40	0	0	0	0	0								
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0								
Initial Fut:	152	205	0	0	316	229	136	0	50	0	0	0								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92								
PHF Volume:	165	223	0	0	343	249	148	0	54	0	0	0								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	165	223	0	0	343	249	148	0	54	0	0	0								
Critical Gap Module:																				
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx								
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	592	xxxx	xxxxx	xxxx	xxxx	xxxxx	897	xxxx	343	xxxx	xxxx	xxxxx								
Potent Cap.:	983	xxxx	xxxxx	xxxx	xxxx	xxxxx	310	xxxx	699	xxxx	xxxx	xxxxx								
Move Cap.:	983	xxxx	xxxxx	xxxx	xxxx	xxxxx	266	xxxx	699	xxxx	xxxx	xxxxx								
Volume/Cap:	0.17	xxxx	xxxx	xxxx	xxxx	xxxx	0.56	xxxx	0.08	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	15.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	77.4	xxxx	6.3	xxxx	xxxx	xxxxx								
Control Del:	9.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	34.2	xxxx	10.6	xxxxx	xxxx	xxxxx								
LOS by Move:	A	*	*	*	*	*	D	*	B	*	*	*								
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	0.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	9.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx			xxxxxx			27.8			xxxxxx										
ApproachLOS:	*			*			D			*										

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HevVeh:	2%				2%				2%				2%			
Grade:	0%				0%				0%				0%			
Peds/Hour:	0				0				0				0			
Pedestrian Walk Speed: 4.00 feet/sec																
LaneWidth:	12 feet				12 feet				12 feet				12 feet			
Time Period: 0.25 hour																
Upstream Signals:																
Link Index:	#222				#188											
Dist(miles):	0.250				0.250											
Speed (mph):	1.00				1.00											
SignalIndex:	#23				#13											
Cycle Time:	100 secs				100 secs											
InitVolume:	535	84			50	19										
Saturation:	1410	1040			1769	1597										
ArrivalType:	4	4			4	4										
G/C:	0.35	0.23			0.05	0.07										
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection																
P:	0.464	0.311			0.063	0.097										
gq1:	20.32	5.56			2.65	1.07										
gq2:	20.80	0.67			0.10	0.02										
gq:	34.84	6.23			2.75	1.09										
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons																
alpha:	0.550				0.550											
beta:	0.645				0.645											
ta (secs):	900.000				900.000											
F:	0.003				0.003											
f:	0.627	1.000			1.000	1.000										
vcmax:	91	20			15	5										
vcg:	91	25			15	6										
vcmin:	1000	1000			1000	1000										
tp:	0.0	0.0			0.0	0.0										
p:	0.000				0.000											
*** Computation 3: Platoon Event Periods																
pdom/psubo:	0.000/0.000/Unconstrained															
*** Computation 4: Conflicting Flows During Each Unblocked Period																
InitCnflVol:	592	xxxxx	xxxxx	0	xxxxx	xxxxx	897	897	343	1048	1146	223				
AdjCnflVol:	592	xxxxx	xxxxx	0	xxxxx	xxxxx	897	897	343	1048	1146	223				
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000				
ConflictVol:	592	xxxxx	xxxxx	0	xxxxx	xxxxx	897	897	343	1048	1146	223				
*** Computation 5: Capacity for Subject Movement During Unblocked Period																
InitPotCap:	983	xxxxx	xxxxx	1623	xxxxx	xxxxx	310	279	699	206	199	817				
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000				
Potent Cap.:	983	xxxxx	xxxxx	1623	xxxxx	xxxxx	310	279	699	206	199	817				

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

Cycle (sec):	100	Critical Vol./Cap.(X):	0.341
Loss Time (sec):	12	Average Delay (sec/veh):	30.1
Optimal Cycle:	33	Level Of Service:	C

Street Name:	Holman Road								Lt. Col. Mark Taylor Street								
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Y+R:	4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0		
Lanes:	1	0	2	0	1	1	0	3	0	1	1	0	1	0	1	1	0	0	1	0
Volume Module:	AM Peak Hour																			
Base Vol:	133	98	87			11	174	7			9	135	126			149	104	4		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	133	98	87			11	174	7			9	135	126			149	104	4		
Added Vol:	0	6	0			0	13	0			0	0	0			0	0	0		
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0		
Initial Fut:	133	104	87			11	187	7			9	135	126			149	104	4		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92		
PHF Volume:	145	113	95			12	203	8			10	147	137			162	113	4		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	145	113	95			12	203	8			10	147	137			162	113	4		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
FinalVolume:	145	113	95			12	203	8			10	147	137			162	113	4		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900		
Adjustment:	0.93	0.93	0.83			0.93	0.89	0.83			0.93	0.98	0.83			0.93	0.97	0.97		
Lanes:	1.00	2.00	1.00			1.00	3.00	1.00			1.00	1.00	1.00			1.00	0.96	0.04		
Final Sat.:	1769	3538	1583			1769	5083	1583			1769	1862	1583			1769	1782	69		
Capacity Analysis Module:																				
Vol/Sat:	0.08	0.03	0.06			0.01	0.04	0.00			0.01	0.08	0.09			0.09	0.06	0.06		
Crit Moves:	****						****						****			****				
Green/Cycle:	0.24	0.32	0.32			0.04	0.12	0.12			0.04	0.25	0.25			0.27	0.48	0.48		
Volume/Cap:	0.34	0.10	0.19			0.19	0.34	0.04			0.13	0.31	0.34			0.34	0.13	0.13		
Delay/Veh:	31.9	23.9	24.7			48.2	40.9	39.2			47.0	30.6	31.0			29.9	14.5	14.5		
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
AdjDel/Veh:	31.9	23.9	24.7			48.2	40.9	39.2			47.0	30.6	31.0			29.9	14.5	14.5		
LOS by Move:	C	C	C			D	D	D			D	C	C			C	B	B		
HCM2k95thQ:	164	54	89			28	119	12			15	161	154			189	73	73		

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																				
Lanes:	1	0	2	0	1	1	0	3	0	1	1	0	1	0	1	1	0	0	1	0
Lane Group:	L		T		R	L		T		R	L		T		R	L		RT		RT
#LnsInGrps:	1		2		1	1		3		1	1		1		1	1		1		1
HCM Ops Input Saturation Adj Module:																				
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12
CrsswalkWid:			8					8					8					8		
% Hev Veh:			2					2					2					2		
Grade:			0%					0%					0%					0%		
Parking/Hr:			No					No					No					No		
Bus Stp/Hr:			0					0					0					0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																			
Cnft Ped/Hr:			0					0					0					0		
ExclusiveRT:			Include					Include					Include					Include		
% RT Prtct:			0					0					0					0		
HCM Ops f(lt) Adj Case Module:																				
f(lt) Case:	1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx		
HCM Ops Saturation Adj Module:																				
Ln Wid Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Hev Veh Adj:	0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98		
Grade Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Parking Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00		
Bus Stp Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00		
Area Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
RT Adj:	xxxx	xxxx	0.85			xxxx	xxxx	0.85			xxxx	xxxx	0.85			xxxx	0.99	0.99		
LT Adj:	0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx		
PedBike Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
HCM Sat Adj:	0.93	0.98	0.83			0.93	0.98	0.83			0.93	0.98	0.83			0.93	0.97	0.97		
Usr Sat Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Sat Adj:	1.00	0.95	1.00			1.00	0.91	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Fnl Sat Adj:	0.93	0.93	0.83			0.93	0.89	0.83			0.93	0.98	0.83			0.93	0.97	0.97		
Delay Adjustment Factor Module:																				
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																			
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >																			
DelAdjFctr:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.24	0.32	0.32	0.04	0.12	0.12	0.04	0.25	0.25	0.27	0.48	0.48
ArrivalType:		4			4			4			4	
ProgFactor:	0.92	0.85	0.86	0.99	0.97	0.96	0.99	0.91	0.92	0.91	0.71	0.71
Q1:	3.1	1.0	1.6	0.3	1.8	0.2	0.3	3.0	2.8	3.3	1.3	1.3
UpstreamVC:	0.18	0.18	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.99	0.99	0.99	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
EarlyArrAdj:	0.44	0.53	0.48	1.00	1.00	1.00	0.15	0.47	0.43	1.00	1.00	1.00
Q2:	0.2	0.1	0.1	0.2	0.5	0.0	0.0	0.2	0.2	0.5	0.2	0.2
HCM2KQueue:	3.3	1.0	1.7	0.5	2.3	0.2	0.3	3.2	3.1	3.8	1.4	1.4
70th%Factor:	1.19	1.20	1.20	1.20	1.19	1.20	1.20	1.19	1.19	1.19	1.20	1.20
HCM2k70thQ:	3.9	1.3	2.1	0.6	2.8	0.3	0.3	3.8	3.7	4.5	1.7	1.7
85th%Factor:	1.57	1.59	1.58	1.59	1.58	1.60	1.60	1.57	1.57	1.56	1.59	1.59
HCM2k85thQ:	5.2	1.7	2.8	0.9	3.7	0.4	0.5	5.1	4.8	5.9	2.3	2.3
90th%Factor:	1.74	1.78	1.77	1.79	1.76	1.80	1.79	1.74	1.74	1.73	1.77	1.77
HCM2k90thQ:	5.7	1.9	3.1	1.0	4.1	0.4	0.5	5.6	5.3	6.6	2.5	2.5
95th%Factor:	2.00	2.07	2.04	2.08	2.03	2.09	2.09	2.00	2.01	1.99	2.05	2.05
HCM2k95thQ:	6.6	2.2	3.6	1.1	4.8	0.5	0.6	6.4	6.1	7.5	2.9	2.9
98th%Factor:	2.48	2.62	2.57	2.66	2.53	2.68	2.68	2.48	2.49	2.45	2.60	2.60
HCM2k98thQ:	8.1	2.7	4.5	1.4	5.9	0.6	0.8	8.0	7.6	9.3	3.7	3.7

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.574
Loss Time (sec): 12 | Average Delay (sec/veh): 29.0
Optimal Cycle: 46 | Level Of Service: C

Street Name:	West Lane						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module: AM Peak Hour												
Base Vol:	80	450	242	354	656	32	67	90	67	243	62	212
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	80	450	242	354	656	32	67	90	67	243	62	212
Added Vol:	0	110	0	70	211	22	11	0	0	0	0	41
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	80	560	242	424	867	54	78	90	67	243	62	253
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	87	609	263	461	942	59	85	98	73	264	67	275
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	609	263	461	942	59	85	98	73	264	67	275
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	87	609	263	461	942	59	85	98	73	264	67	275
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	5083	1583	3432	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.17	0.17	0.13	0.27	0.04	0.02	0.02	0.05	0.08	0.01	0.17
Crit Moves:		****		****			****					****
Green/Cycle:	0.05	0.30	0.30	0.23	0.49	0.49	0.04	0.13	0.13	0.22	0.30	0.30
Volume/Cap:	0.55	0.57	0.55	0.57	0.55	0.08	0.57	0.15	0.36	0.36	0.04	0.57
Delay/Veh:	50.6	30.4	30.8	34.9	18.3	13.7	52.3	38.7	40.8	33.5	24.6	31.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.6	30.4	30.8	34.9	18.3	13.7	52.3	38.7	40.8	33.5	24.6	31.1
LOS by Move:	D	C	C	C	B	B	D	D	D	C	C	C
HCM2k95thQ:	112	386	326	325	405	35	114	53	117	176	24	343

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	3	0	1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	2	1		2	2	1		2	3	1		2	3	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.05	0.30	0.30		0.23	0.49	0.49		0.04	0.13	0.13		0.22	0.30	0.30	
ArrivalType:	4				4				4				4			
ProgFactor:	0.99	0.92	0.92		0.95	0.78	0.69		0.99	0.96	0.97		0.93	0.86	0.92	
Q1:	1.2	6.9	5.6		5.5	7.5	0.6		1.2	0.8	1.8		3.0	0.4	5.9	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	1.0	1.3	1.2		1.3	1.2	0.1		1.1	0.2	0.5		0.5	0.0	1.3	
HCM2KQueue:	2.2	8.2	6.8		6.8	8.7	0.7		2.2	1.0	2.3		3.5	0.5	7.2	
70th%Factor:	1.19	1.18	1.18		1.18	1.18	1.20		1.19	1.20	1.19		1.19	1.20	1.18	
HCM2k70thQ:	2.6	9.7	8.1		8.1	10.2	0.8		2.7	1.2	2.8		4.2	0.6	8.5	
85th%Factor:	1.58	1.53	1.54		1.54	1.52	1.59		1.58	1.59	1.58		1.57	1.60	1.54	
HCM2k85thQ:	3.5	12.6	10.5		10.5	13.2	1.1		3.5	1.6	3.7		5.5	0.7	11.1	
90th%Factor:	1.76	1.67	1.68		1.68	1.66	1.79		1.76	1.78	1.76		1.74	1.79	1.68	
HCM2k90thQ:	3.9	13.7	11.5		11.5	14.4	1.2		4.0	1.8	4.1		6.1	0.8	12.1	
95th%Factor:	2.03	1.88	1.91		1.91	1.87	2.08		2.03	2.07	2.03		1.99	2.08	1.90	
HCM2k95thQ:	4.5	15.5	13.0		13.0	16.2	1.4		4.6	2.1	4.7		7.1	1.0	13.7	
98th%Factor:	2.54	2.23	2.29		2.29	2.21	2.65		2.54	2.62	2.54		2.46	2.67	2.27	
HCM2k98thQ:	5.6	18.3	15.6		15.6	19.2	1.8		5.7	2.7	5.9		8.7	1.2	16.4	

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.594
Loss Time (sec):	12	Average Delay (sec/veh):	35.0
Optimal Cycle:	48	Level Of Service:	D

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:	AM Peak Hour											
Base Vol:	236	112	116	319	215	181	143	585	171	182	500	191
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	236	112	116	319	215	181	143	585	171	182	500	191
Added Vol:	3	4	0	0	9	3	1	47	5	0	28	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	239	116	116	319	224	184	144	632	176	182	528	191
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	260	126	126	347	243	200	157	687	191	198	574	208
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	260	126	126	347	243	200	157	687	191	198	574	208
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	260	126	126	347	243	200	157	687	191	198	574	208
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.15	0.02	0.08	0.20	0.05	0.13	0.09	0.14	0.12	0.11	0.11	0.13
Crit Moves:			****	****				****		****		
Green/Cycle:	0.25	0.13	0.13	0.33	0.21	0.21	0.17	0.23	0.23	0.19	0.25	0.25
Volume/Cap:	0.59	0.18	0.59	0.59	0.22	0.59	0.53	0.59	0.53	0.59	0.45	0.53
Delay/Veh:	35.1	38.6	45.2	29.6	32.5	38.0	39.8	35.3	35.5	40.0	32.1	33.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.1	38.6	45.2	29.6	32.5	38.0	39.8	35.3	35.5	40.0	32.1	33.9
LOS by Move:	D	D	D	C	C	D	D	D	D	D	C	C
HCM2k95thQ:	313	59	178	378	102	257	239	347	267	244	231	236

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	3 0	1		1 0	3 0	1		1 0	3 0	1		1 0	3 0	1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	3	1		1	3	1		1	3	1		1	3	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.25	0.13	0.13	0.33	0.21	0.21	0.17	0.23	0.23	0.19	0.25	0.25
ArrivalType:		4			4			4			4	
ProgFactor:	0.94	0.96	0.98	0.91	0.92	0.95	0.96	0.95	0.95	0.96	0.93	0.94
Q1:	6.0	1.1	3.2	7.3	1.9	4.8	3.8	5.9	4.4	4.8	4.6	4.7
UpstreamVC:	0.49	0.49	0.49	0.34	0.34	0.34	0.00	0.00	0.00	0.91	0.91	0.91
UpstreamAdj:	0.87	0.87	0.87	0.95	0.95	0.95	0.00	0.00	0.00	0.30	0.30	0.30
EarlyArrAdj:	0.39	0.28	0.25	0.51	0.40	0.36	1.00	1.00	1.00	0.11	0.14	0.12
Q2:	0.5	0.1	0.4	0.7	0.1	0.5	1.1	1.4	1.1	0.2	0.1	0.1
HCM2KQueue:	6.5	1.2	3.6	8.0	2.0	5.3	4.9	7.3	5.5	5.0	4.7	4.8
70th%Factor:	1.18	1.20	1.19	1.18	1.20	1.19	1.19	1.18	1.19	1.19	1.19	1.19
HCM2k70thQ:	7.7	1.4	4.3	9.5	2.4	6.3	5.8	8.7	6.5	5.9	5.6	5.7
85th%Factor:	1.54	1.59	1.57	1.53	1.58	1.55	1.55	1.54	1.55	1.55	1.56	1.56
HCM2k85thQ:	10.1	1.8	5.6	12.3	3.2	8.2	7.6	11.2	8.5	7.8	7.3	7.5
90th%Factor:	1.69	1.78	1.73	1.67	1.76	1.71	1.71	1.68	1.70	1.71	1.72	1.71
HCM2k90thQ:	11.0	2.0	6.2	13.4	3.5	9.0	8.4	12.3	9.4	8.6	8.1	8.3
95th%Factor:	1.92	2.06	1.99	1.88	2.04	1.95	1.96	1.90	1.94	1.95	1.96	1.96
HCM2k95thQ:	12.5	2.4	7.1	15.1	4.1	10.3	9.6	13.9	10.7	9.8	9.2	9.4
98th%Factor:	2.30	2.62	2.46	2.24	2.56	2.37	2.39	2.27	2.36	2.38	2.40	2.39
HCM2k98thQ:	15.1	3.0	8.8	18.0	5.1	12.5	11.7	16.6	12.9	11.9	11.3	11.5

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 SR99 W Front & SB Ramps Morada

Average Delay (sec/veh): 7.7 Worst Case Level Of Service: D[31.8]

Street Name:	SR 99 West Frontage Rd						SR 99 SB Ramps (Morada Lane)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Volume Module:	AM Peak Hour											
Base Vol:	0	62	788	31	50	0	0	0	0	282	0	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	62	788	31	50	0	0	0	0	282	0	19
Added Vol:	0	0	47	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	62	835	31	50	0	0	0	0	282	0	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	67	908	34	54	0	0	0	0	307	0	21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	67	908	34	54	0	0	0	0	307	0	21
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	975	xxxx	xxxxx	xxxx	xxxx	xxxxx	643	xxxx	521
Potent Cap.:	xxxx	xxxx	xxxxx	707	xxxx	xxxxx	xxxx	xxxx	xxxxx	438	xxxx	555
Move Cap.:	xxxx	xxxx	xxxxx	707	xxxx	xxxxx	xxxx	xxxx	xxxxx	422	xxxx	555
Volume/Cap:	xxxx	xxxx	xxxx	0.05	xxxx	xxxx	xxxx	xxxx	xxxx	0.73	xxxx	0.04
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	3.7	xxxx	xxxxx	xxxx	xxxx	xxxxx	143	xxxx	2.9
Control Del:	xxxxx	xxxx	xxxxx	10.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	33.1	xxxx	11.7
LOS by Move:	*	*	*	B	*	*	*	*	*	D	*	B
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	10.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	B	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			31.8		
ApproachLOS:	*			*			*			D		

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #20 SR99 W Front & SB Ramps Morada

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:       #218             #183
Dist(miles):      0.250            0.250
Speed (mph):       1.00             1.00
SignalIndex:      #22              #12
Cycle Time:         100 secs         100 secs
InitVolume:   543    15        149    20
Saturation:  1769  1334       1769   871
ArrivalType:    4     4          4     4
G/C:         0.37  0.19       0.15  0.04
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:          0.489 0.255      0.196 0.053
gq1:        15.68  0.84       6.77  2.17
gq2:        10.86  0.01       0.86  0.07
gq:         26.54  0.85       7.63  2.24
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:            0.550            0.550
beta:             0.645            0.645
ta (secs):       900.000          900.000
F:                0.003            0.003
f:          1.000 1.000      0.521 1.000
vcmax:        141     4         22     6
vcg:          159     4         24     6
vcmin:       1000  1000       1000  1000
tp:           0.0   0.0        0.0   0.0
p:                0.000            0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx  975 xxxxx xxxxx  653  1097    54  643   643   521
AdjCnflVol:    0 xxxxx xxxxx  975 xxxxx xxxxx  653  1097    54  643   643   521
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx  975 xxxxx xxxxx  653  1097    54  643   643   521
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1623 xxxxx xxxxx  707 xxxxx xxxxx  380   213  1013  438   392   555
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1623 xxxxx xxxxx  707 xxxxx xxxxx  380   213  1013  438   392   555
```


EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #21 SR99 E Front & NB Ramps Morada

Average Delay (sec/veh): 15.9 Worst Case Level Of Service: F[65.7]

```
Street Name:      SR 99 East Frontage Rd         SR 99 NB Ramps (Morada Lane)
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  0  0    0  0  0  1  0    1  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:AM Peak Hour
Base Vol:     230  451     0     0  511     2    95    0   214     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  230  451     0     0  511     2    95    0   214     0    0     0
Added Vol:      0    0     0     0    0     0     0    0    28     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  230  451     0     0  511     2    95    0   242     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:   250  490     0     0  555     2   103    0   263     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:  250  490     0     0  555     2   103    0   263     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4 xxxx   6.2 xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  558 xxxx xxxxx  xxxx xxxx xxxxx  1547 xxxx   557  xxxx xxxx xxxxx
Potent Cap.: 1013 xxxx xxxxx  xxxx xxxx xxxxx   126 xxxx   530  xxxx xxxx xxxxx
Move Cap.:   1013 xxxx xxxxx  xxxx xxxx xxxxx    98 xxxx   530  xxxx xxxx xxxxx
Volume/Cap:  0.25 xxxx  xxxx  xxxx xxxx  xxxx  1.05 xxxx  0.50  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   24.3 xxxx xxxxx  xxxx xxxx xxxxx   164 xxxx  68.3  xxxx xxxx xxxxx
Control Del:  9.7 xxxx xxxxx xxxxx xxxx xxxxx 186.7 xxxx  18.3 xxxxx xxxx xxxxx
LOS by Move:    A    *     *     *    *     *     F    *     C     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:  1.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:  9.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     A    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx              65.7           xxxxxx
ApproachLOS:         *                *                 F                *
```

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #21 SR99 E Front & NB Ramps Morada

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:	#222			#188								
Dist(miles):	0.250			0.250								
Speed (mph):	1.00			1.00								
SignalIndex:	#23			#13								
Cycle Time:	100 secs			100 secs								
InitVolume:	535	84		50	19							
Saturation:	1410	1040		1769	1597							
ArrivalType:	4	4		4	4							
G/C:	0.35	0.23		0.05	0.07							
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:	0.464	0.311		0.063	0.097							
gq1:	20.32	5.56		2.65	1.07							
gq2:	20.80	0.67		0.10	0.02							
gq:	34.84	6.23		2.75	1.09							
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:	0.550			0.550								
beta:	0.645			0.645								
ta (secs):	900.000			900.000								
F:	0.003			0.003								
f:	1.000	1.000		1.000	1.000							
vcmax:	146	20		15	5							
vcg:	146	25		15	6							
vcmin:	1000	1000		1000	1000							
tp:	0.0	0.0		0.0	0.0							
p:	0.000			0.000								
*** Computation 3: Platoon Event Periods												
pdom/psubo:	0.000/0.000/Unconstrained											
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	558	xxxxx	xxxxx	0	xxxxx	xxxxx	1547	1547	557	1678	1548	490
AdjCnflVol:	558	xxxxx	xxxxx	0	xxxxx	xxxxx	1547	1547	557	1678	1548	490
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	558	xxxxx	xxxxx	0	xxxxx	xxxxx	1547	1547	557	1678	1548	490
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	1013	xxxxx	xxxxx	1623	xxxxx	xxxxx	126	114	530	75	114	578
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
Potent Cap.:	1013	xxxxx	xxxxx	1623	xxxxx	xxxxx	126	114	530	75	114	578

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 West Ln & West Ln Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.669
Loss Time (sec):	9	Average Delay (sec/veh):	20.5
Optimal Cycle:	48	Level Of Service:	C

Street Name:	West Lane						West Lane Frontage Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	1	0	1	0 1	1	0	0 1	0 0	1	1 0 0 1 0
Volume Module:	AM Peak Hour											
Base Vol:	111	611	52	47	900	69	117	14	116	177	17	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	111	611	52	47	900	69	117	14	116	177	17	4
Added Vol:	0	110	0	0	211	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	111	721	52	47	1111	69	117	14	116	177	17	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	121	784	57	51	1208	75	127	15	126	192	18	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	121	784	57	51	1208	75	127	15	126	192	18	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	121	784	57	51	1208	75	127	15	126	192	18	4
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.92	0.92	0.93	0.92	0.92	0.71	0.71	0.83	0.58	0.95	0.95
Lanes:	1.00	1.87	0.13	1.00	1.88	0.12	0.89	0.11	1.00	1.00	0.81	0.19
Final Sat.:	1769	3267	236	1769	3301	205	1199	143	1583	1100	1465	345
Capacity Analysis Module:												
Vol/Sat:	0.07	0.24	0.24	0.03	0.37	0.37	0.11	0.11	0.08	0.17	0.01	0.01
Crit Moves:	****				****					****		
Green/Cycle:	0.10	0.58	0.58	0.07	0.55	0.55	0.26	0.26	0.26	0.26	0.26	0.26
Volume/Cap:	0.67	0.41	0.41	0.41	0.67	0.67	0.41	0.41	0.30	0.67	0.05	0.05
Delay/Veh:	52.6	11.8	11.8	46.8	17.1	17.1	31.3	31.3	30.1	39.0	27.7	27.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.6	11.8	11.8	46.8	17.1	17.1	31.3	31.3	30.1	39.0	27.7	27.7
LOS by Move:	D	B	B	D	B	B	C	C	C	D	C	C
HCM2k95thQ:	181	226	226	102	537	537	182	182	150	303	25	25

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        1  0  1  1  0    1  0  1  1  0    0  1  0  0  1    1  0  0  1  0
Lane Group:    L   RT     RT    L   RT     RT   LT   LT     R     L   RT     RT
#LnsInGrps:     1    2     2     1    2     2     1    1     1     1    1     1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:         8                8                8                8
% Hev Veh:           2                2                2                2
Grade:              0%               0%               0%               0%
Parking/Hr:         No               No               No               No
Bus Stp/Hr:          0                0                0                0
Area Type:    < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:         0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:          0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx     1 xxxx  xxxx     5    5  xxxx     2 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Hev Veh Adj: 0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
Grade Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Parking Adj: xxxx 1.00  1.00  xxxx 1.00  1.00  xxxx xxxx  1.00  xxxx 1.00  1.00
Bus Stp Adj: xxxx 1.00  1.00  xxxx 1.00  1.00  xxxx xxxx  1.00  xxxx 1.00  1.00
Area Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
RT Adj:      xxxx 0.99  0.99  xxxx 0.99  0.99  xxxx xxxx  0.85  xxxx 0.97  0.97
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.72 0.72 xxxxx  0.59 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.93 0.97  0.97  0.93 0.97  0.97  0.71 0.71  0.83  0.58 0.95  0.95
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 0.95  0.95  1.00 0.95  0.95  1.00 1.00  1.00  1.00 1.00  1.00
Fnl Sat Adj: 0.93 0.92  0.92  0.93 0.92  0.92  0.71 0.71  0.83  0.58 0.95  0.95
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
```


EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North	South	East	West
Cycle Length, C:	xxxxxx	xxxxxx	100	100
Actual Green Time Per Lane Group, G:	xxxxxx	xxxxxx	25.12	25.12
Effective Green Time Per Lane Group, g:	xxxxxx	xxxxxx	26.12	26.12
Opposing Effective Green Time, go:	xxxxxx	xxxxxx	26.12	26.12
Number Of Opposing Lanes, No:	xxxxxx	xxxxxx	1	1
Number Of Lanes In Lane Group, N:	xxxxxx	xxxxxx	1	1
Adjusted Left-Turn Flow Rate, Vlt:	xxxxxx	xxxxxx	127	192
Proportion of Left Turns in Lane Group, Plt:	xxxxxx	xxxxxx	0.89	1.00
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	xxxxxx	xxxxxx	3.53	5.34
Adjusted Opposing Flow Rate, Vo:	xxxxxx	xxxxxx	23	142
Opposing Flow Per Lane Per Cycle, Volc:	xxxxxx	xxxxxx	0.64	3.94
Opposing Platoon Ratio, Rpo:	xxxxxx	xxxxxx	1.33	1.33
Lost Time Per Phase, tl:	xxxxxx	xxxxxx	3.00	3.00
Eff grn until arrival of left-turn car, gf:	xxxxxx	xxxxxx	0.00	0.00
Opposing Queue Ratio, qro:	xxxxxx	xxxxxx	0.65	0.65
Eff grn blocked by opposing queue, gq:	xxxxxx	xxxxxx	0.00	2.75
Eff grn while left turns filter thru, gu:	xxxxxx	xxxxxx	26.12	23.37
Max opposing cars arriving during gq-gf, n:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	0.86	0.79
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	0.89	1.00
Through-car Equivalents, el1:	xxxxxx	xxxxxx	1.43	1.51
Single Lane Through-car Equivalents, el2:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	xxxxxx	xxxxxx	0.14	0.15
Single Lane Left Turn Adjustment Factor, fm:	xxxxxx	xxxxxx	0.72	0.59
Left Turn Adjustment Factor, flt:	xxxxxx	xxxxxx	0.72	0.59

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.10	0.58	0.58	0.07	0.55	0.55	0.26	0.26	0.26	0.26	0.26	0.26
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.61	0.61	0.98	0.74	0.74	0.92	0.92	0.91	0.95	0.89	0.89
Q1:	3.2	4.1	4.1	1.3	9.9	9.9	3.0	3.0	2.6	4.5	0.4	0.4
UpstreamVC:	0.45	0.45	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.89	0.89	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.23	0.68	0.68	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.4	0.5	0.5	0.7	1.9	1.9	0.7	0.7	0.4	1.8	0.1	0.1
HCM2KQueue:	3.6	4.6	4.6	2.0	11.9	11.9	3.7	3.7	3.0	6.3	0.5	0.5
70th%Factor:	1.19	1.19	1.19	1.20	1.17	1.17	1.19	1.19	1.19	1.19	1.20	1.20
HCM2k70thQ:	4.3	5.5	5.5	2.4	13.9	13.9	4.4	4.4	3.6	7.5	0.6	0.6
85th%Factor:	1.57	1.56	1.56	1.58	1.50	1.50	1.57	1.57	1.57	1.54	1.60	1.60
HCM2k85thQ:	5.7	7.2	7.2	3.2	17.8	17.8	5.7	5.7	4.7	9.7	0.8	0.8
90th%Factor:	1.73	1.72	1.72	1.76	1.62	1.62	1.73	1.73	1.74	1.69	1.79	1.79
HCM2k90thQ:	6.3	7.9	7.9	3.5	19.2	19.2	6.4	6.4	5.2	10.7	0.8	0.8
95th%Factor:	1.99	1.96	1.96	2.04	1.81	1.81	1.99	1.99	2.01	1.92	2.08	2.08
HCM2k95thQ:	7.2	9.0	9.0	4.1	21.5	21.5	7.3	7.3	6.0	12.1	1.0	1.0
98th%Factor:	2.46	2.40	2.40	2.56	2.10	2.10	2.45	2.45	2.49	2.32	2.66	2.66
HCM2k98thQ:	8.9	11.0	11.0	5.1	24.9	24.9	9.0	9.0	7.5	14.6	1.3	1.3

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 West Lane & Knickerbocker Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.525
Loss Time (sec): 12 Average Delay (sec/veh): 23.7
Optimal Cycle: 42 Level Of Service: C

Street Name:	West Lane						Knickerbocker Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:	AM Peak Hour											
Base Vol:	24	681	78	124	995	48	70	56	39	192	88	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	24	681	78	124	995	48	70	56	39	192	88	30
Added Vol:	0	110	0	0	211	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	24	791	78	124	1206	48	70	56	39	192	88	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	26	860	85	135	1311	52	76	61	42	209	96	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	860	85	135	1311	52	76	61	42	209	96	33
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	26	860	85	135	1311	52	76	61	42	209	96	33
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.89	0.93	0.92	0.92	0.93	0.94	0.94
Lanes:	1.00	3.00	1.00	1.00	2.89	0.11	1.00	0.59	0.41	1.00	0.75	0.25
Final Sat.:	1769	5083	1583	1769	4859	193	1769	1030	717	1769	1336	455
Capacity Analysis Module:												
Vol/Sat:	0.01	0.17	0.05	0.08	0.27	0.27	0.04	0.06	0.06	0.12	0.07	0.07
Crit Moves:	****				****			****		****		
Green/Cycle:	0.03	0.37	0.37	0.17	0.51	0.51	0.13	0.11	0.11	0.22	0.21	0.21
Volume/Cap:	0.52	0.45	0.14	0.45	0.52	0.52	0.34	0.52	0.52	0.52	0.34	0.34
Delay/Veh:	57.8	23.8	20.8	38.5	16.4	16.4	40.8	44.4	44.4	35.3	34.1	34.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	57.8	23.8	20.8	38.5	16.4	16.4	40.8	44.4	44.4	35.3	34.1	34.1
LOS by Move:	E	C	C	D	B	B	D	D	D	D	C	C
HCM2k95thQ:	43	295	70	171	349	349	120	182	182	284	167	167

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 3	0 1		1	0 2	1 0		1	0 0	1 0		1	0 0	1 0	
Lane Group:	L	T	R		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	3	1		1	3	3		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.99	0.99		xxxx	0.94	0.94		xxxx	0.96	0.96	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.97	0.97		0.93	0.92	0.92		0.93	0.94	0.94	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.89		0.93	0.92	0.92		0.93	0.94	0.94	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.03	0.37	0.37		0.17	0.51	0.51		0.13	0.11	0.11		0.22	0.21	0.21	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.86	0.82		0.96	0.74	0.74		0.97	0.98	0.98		0.95	0.94	0.94	
Q1:		0.7	5.7	1.3		3.2	6.8	6.8		1.9	2.6	2.6		4.8	2.8	2.8
UpstreamVC:	0.34	0.34	0.34		0.67	0.67	0.67		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.95	0.95	0.95		0.69	0.69	0.69		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	0.12	0.56	0.51		0.25	0.49	0.49		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:		0.1	0.5	0.1		0.2	0.5	0.5		0.5	1.0	1.0		1.1	0.5	0.5
HCM2KQueue:		0.8	6.1	1.4		3.4	7.3	7.3		2.4	3.7	3.7		5.9	3.3	3.3
70th%Factor:	1.20	1.19	1.20		1.19	1.18	1.18		1.19	1.19	1.19		1.19	1.19	1.19	
HCM2k70thQ:		1.0	7.3	1.6		4.1	8.7	8.7		2.8	4.4	4.4		7.0	4.0	4.0
85th%Factor:	1.59	1.54	1.59		1.57	1.53	1.53		1.58	1.57	1.57		1.55	1.57	1.57	
HCM2k85thQ:		1.3	9.5	2.2		5.4	11.3	11.3		3.7	5.7	5.7		9.1	5.2	5.2
90th%Factor:	1.78	1.69	1.77		1.74	1.68	1.68		1.76	1.73	1.73		1.70	1.74	1.74	
HCM2k90thQ:		1.5	10.4	2.4		6.0	12.3	12.3		4.1	6.3	6.3		10.0	5.8	5.8
95th%Factor:	2.07	1.93	2.06		2.00	1.90	1.90		2.03	1.99	1.99		1.93	2.00	2.00	
HCM2k95thQ:		1.7	11.8	2.8		6.8	14.0	14.0		4.8	7.3	7.3		11.4	6.7	6.7
98th%Factor:	2.64	2.32	2.60		2.47	2.27	2.27		2.53	2.45	2.45		2.34	2.47	2.47	
HCM2k98thQ:		2.2	14.2	3.5		8.5	16.7	16.7		6.0	9.0	9.0		13.7	8.3	8.3

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.592
Loss Time (sec):	12	Average Delay (sec/veh):	32.7
Optimal Cycle:	48	Level Of Service:	C

Street Name:	West Lane						Hammer Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	4 0	1	2 0	4 0	1	2 0	4 0	1	2 0	4 0	1
Volume Module:	AM Peak Hour											
Base Vol:	217	458	119	168	917	196	311	843	219	383	654	59
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	217	458	119	168	917	196	311	843	219	383	654	59
Added Vol:	0	110	0	0	211	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	217	568	119	168	1128	196	311	843	219	383	654	59
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	236	617	129	183	1226	213	338	916	238	416	711	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	236	617	129	183	1226	213	338	916	238	416	711	64
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	236	617	129	183	1226	213	338	916	238	416	711	64
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.07	0.09	0.08	0.05	0.18	0.13	0.10	0.14	0.15	0.12	0.10	0.04
Crit Moves:	****				****				****	****		
Green/Cycle:	0.12	0.27	0.27	0.16	0.31	0.31	0.22	0.25	0.25	0.20	0.24	0.24
Volume/Cap:	0.59	0.34	0.31	0.34	0.59	0.44	0.44	0.53	0.59	0.59	0.44	0.17
Delay/Veh:	44.3	29.8	29.8	38.1	29.9	28.5	34.0	32.5	35.1	37.3	32.8	30.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.3	29.8	29.8	38.1	29.9	28.5	34.0	32.5	35.1	37.3	32.8	30.6
LOS by Move:	D	C	C	D	C	C	C	C	D	D	C	C
HCM2k95thQ:	218	197	153	120	374	225	230	322	326	277	229	70

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2 0	4 0	1		2 0	4 0	1		2 0	4 0	1		2 0	4 0	1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	4	1		2	4	1		2	4	1		2	4	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.12	0.27	0.27	0.16	0.31	0.31	0.22	0.25	0.25	0.20	0.24	0.24
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.91	0.91	0.96	0.92	0.90	0.94	0.94	0.94	0.96	0.93	0.91
Q1:	3.1	3.5	2.6	2.2	7.3	4.3	3.9	5.6	5.5	5.2	4.3	1.3
UpstreamVC:	0.00	0.00	0.00	0.52	0.52	0.52	0.00	0.00	0.00	0.29	0.29	0.29
UpstreamAdj:	0.00	0.00	0.00	0.84	0.84	0.84	0.00	0.00	0.00	0.97	0.97	0.97
EarlyArrAdj:	1.00	1.00	1.00	0.28	0.44	0.40	1.00	1.00	1.00	0.39	0.43	0.39
Q2:	1.3	0.5	0.4	0.1	0.6	0.3	0.8	1.1	1.4	0.5	0.3	0.1
HCM2KQueue:	4.4	4.0	3.0	2.4	7.9	4.6	4.7	6.7	6.8	5.7	4.7	1.4
70th%Factor:	1.19	1.19	1.19	1.19	1.18	1.19	1.19	1.18	1.18	1.19	1.19	1.20
HCM2k70thQ:	5.3	4.7	3.6	2.8	9.4	5.5	5.6	8.0	8.1	6.8	5.5	1.6
85th%Factor:	1.56	1.56	1.57	1.58	1.53	1.56	1.56	1.54	1.54	1.55	1.56	1.59
HCM2k85thQ:	6.9	6.2	4.8	3.8	12.1	7.1	7.3	10.4	10.5	8.8	7.3	2.2
90th%Factor:	1.72	1.73	1.74	1.76	1.67	1.72	1.72	1.69	1.68	1.70	1.72	1.77
HCM2k90thQ:	7.6	6.9	5.3	4.2	13.2	7.9	8.1	11.4	11.5	9.7	8.0	2.4
95th%Factor:	1.97	1.98	2.01	2.03	1.89	1.97	1.96	1.91	1.91	1.94	1.96	2.06
HCM2k95thQ:	8.7	7.9	6.1	4.8	15.0	9.0	9.2	12.9	13.1	11.1	9.2	2.8
98th%Factor:	2.41	2.44	2.49	2.53	2.24	2.40	2.40	2.30	2.29	2.34	2.40	2.60
HCM2k98thQ:	10.7	9.7	7.6	6.0	17.8	11.0	11.3	15.5	15.7	13.4	11.2	3.6

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.880
Loss Time (sec): 12 Average Delay (sec/veh): 38.1
Optimal Cycle: 101 Level Of Service: D

Street Name:	Hammer Lane						Holman Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2 1	0	2	0	3 0	1	2	0	3 1	0
Volume Module:	AM Peak Hour											
Base Vol:	466	393	241	97	657	92	129	777	412	645	696	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	466	393	241	97	657	92	129	777	412	645	696	29
Added Vol:	0	8	0	0	15	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	466	401	241	97	672	92	129	777	412	645	696	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	507	436	262	105	730	100	140	845	448	701	757	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	507	436	262	105	730	100	140	845	448	701	757	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	507	436	262	105	730	100	140	845	448	701	757	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.84	0.84	0.90	0.89	0.83	0.90	0.85	0.85	0.90	0.89	0.89
Lanes:	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.84	0.16
Final Sat.:	3432	3199	1600	3432	5083	1583	3432	4819	1606	3432	6468	269
Capacity Analysis Module:												
Vol/Sat:	0.15	0.14	0.16	0.03	0.14	0.06	0.04	0.18	0.28	0.20	0.12	0.12
Crit Moves:	****				****				****	****		
Green/Cycle:	0.17	0.28	0.28	0.05	0.16	0.16	0.14	0.32	0.32	0.23	0.41	0.41
Volume/Cap:	0.88	0.49	0.59	0.59	0.88	0.39	0.29	0.55	0.88	0.88	0.29	0.29
Delay/Veh:	55.2	30.4	31.9	51.3	51.6	38.3	38.7	28.6	38.8	48.2	20.0	20.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	55.2	30.4	31.9	51.3	51.6	38.3	38.7	28.6	38.8	48.2	20.0	20.0
LOS by Move:	E	C	C	D	D	D	D	C	D	D	B	B
HCM2k95thQ:	499	291	368	87	421	130	93	334	661	615	182	182

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	1	0	2	0 3	0	1	2	0 3	1	0	2	0 3	1	0
Lane Group:	L	RT		RT	L	T		R	L	RT		RT	L	RT		RT
#LnsInGrps:	2	3		3	2	3		1	2	4		4	2	4		4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.94	0.94		xxxx	xxxx	0.85		xxxx	0.95	0.95		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.93	0.93		0.93	0.98	0.83		0.93	0.93	0.93		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	0.91		0.97	0.91	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.84	0.84		0.90	0.89	0.83		0.90	0.85	0.85		0.90	0.89	0.89	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Dens Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.17	0.28	0.28		0.05	0.16	0.16		0.14	0.32	0.32		0.23	0.41	0.41	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.92	0.93		0.99	0.99	0.96		0.96	0.91	0.97		0.98	0.81	0.81	
Q1:	7.0	5.1	6.4		1.5	7.2	2.4		1.7	6.5	12.6		9.5	3.3	3.3	
UpstreamVC:	0.00	0.00	0.00		0.22	0.22	0.22		0.53	0.53	0.53		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.98	0.98	0.98		0.83	0.83	0.83		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		0.17	0.35	0.32		0.27	0.43	0.43		1.00	1.00	1.00	
Q2:	3.9	0.9	1.4		0.2	1.8	0.2		0.1	0.5	2.4		4.3	0.4	0.4	
HCM2KQueue:	10.9	6.0	7.8		1.7	9.0	2.6		1.8	7.0	15.0		13.8	3.7	3.7	
70th%Factor:	1.18	1.19	1.18		1.20	1.18	1.19		1.20	1.18	1.17		1.17	1.19	1.19	
HCM2k70thQ:	12.8	7.2	9.2		2.0	10.7	3.1		2.2	8.3	17.5		16.2	4.4	4.4	
85th%Factor:	1.51	1.55	1.53		1.58	1.52	1.58		1.58	1.54	1.48		1.49	1.57	1.57	
HCM2k85thQ:	16.5	9.3	11.9		2.7	13.8	4.1		2.9	10.8	22.3		20.6	5.7	5.7	
90th%Factor:	1.63	1.70	1.67		1.77	1.65	1.75		1.77	1.68	1.59		1.60	1.73	1.73	
HCM2k90thQ:	17.8	10.2	13.0		3.0	15.0	4.5		3.2	11.8	23.9		22.1	6.3	6.3	
95th%Factor:	1.83	1.93	1.89		2.05	1.86	2.02		2.04	1.91	1.76		1.78	1.99	1.99	
HCM2k95thQ:	19.9	11.6	14.7		3.5	16.8	5.2		3.7	13.4	26.4		24.6	7.3	7.3	
98th%Factor:	2.13	2.33	2.25		2.58	2.20	2.52		2.57	2.28	2.02		2.04	2.45	2.45	
HCM2k98thQ:	23.3	14.1	17.5		4.4	19.9	6.5		4.7	16.0	30.3		28.3	9.0	9.0	

EPAP + Reduce Dens Alt AM Pk Hr

Future Queue Length Report (feet)

Node	Intersection	Northbound L	Northbound -- T	Northbound -- R	Southbound L	Southbound -- T	Southbound -- R	Eastbound L	Eastbound -- T	Eastbound -- R	Westbound L	Westbound -- T	Westbound -- R
#3	[HCM2k95thQ]:	913	38	95	19	630	630	369	654	349	155	1103	1103
#4	[HCM2k95thQ]:	495	125	182	30	467	467	167	735	735	364	471	5
#5	[HCM2k95thQ]:	104	351	864	242	605	117	185	1053	22	785	458	56
#6	[HCM2k95thQ]:	30	393	393	338	283	283	359	359	359	385	385	385
#7	[HCM2k95thQ]:	48	48	48	109	109	109	23	58	0	35	54	54
#8	[HCM2k95thQ]:	868	158	122	74	604	459	343	502	1107	405	451	25
#9	[2Way95thQ]:	xxxx	xxxx	xxxx	14.2	xxxx	1.2	0.8	xxxx	xxxx	xxxx	xxxx	xxxx
#10	[HCM2k95thQ]:	126	0	152	35	0	45	9	104	104	78	32	32
#11	[HCM2k95thQ]:	63	0	0	10	0	73	105	29	2	0	105	1
#14	[2Way95thQ]:	xxxx	xxxx	xxxx	34.8	34.8	xxxx	xxxx	xxxx	xxxx	8.9	xxxx	38.1
#15	[2Way95thQ]:	15.1	15.1	xxxx	xxxx	xxxx	xxxx	77.4	xxxx	6.3	xxxx	xxxx	xxxx
#17	[HCM2k95thQ]:	164	54	89	28	119	12	15	161	154	189	73	73
#18	[HCM2k95thQ]:	112	386	326	325	405	35	114	53	117	176	24	343
#19	[HCM2k95thQ]:	313	59	178	378	102	257	239	347	267	244	231	236
#20	[2Way95thQ]:	xxxx	xxxx	xxxx	3.7	3.7	xxxx	xxxx	xxxx	xxxx	143	xxxx	2.9
#21	[2Way95thQ]:	24.3	24.3	xxxx	xxxx	xxxx	xxxx	164	xxxx	68.3	xxxx	xxxx	xxxx
#24	[HCM2k95thQ]:	181	226	226	102	537	537	182	182	150	303	25	25
#25	[HCM2k95thQ]:	43	295	70	171	349	349	120	182	182	284	167	167
#26	[HCM2k95thQ]:	218	197	153	120	374	225	230	322	326	277	229	70
#27	[HCM2k95thQ]:	499	291	368	87	421	130	93	334	661	615	182	182

Traffix 8.0.0715 (c) 2008 Dowling Assoc. Licensed to kdANDERSON TRANSP.

EPAP + Reduce Dens Alt PM Pk Hr

Scenario Report

Scenario:	EPAP + Red Dens Alt PM
Command:	EPAP + Red Dens Alt PM
Volume:	EPAP PM
Geometry:	EPAP Proj
Impact Fee:	Default Impact Fee
Trip Generation:	PM Pk Hr
Trip Distribution:	EPAP PM
Paths:	EPAP Proj
Routes:	Default Route
Configuration:	Default Configuration

EPAP + Reduce Dens Alt PM Pk Hr

Trip Generation Report

Forecast for PM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	725.00	ElemSchStudent	0.07	0.08	51	58	109	10.7
1	Village West	0.00	Tra Vigne SFDU	0.51	0.30	0	0	0	0.0
1	Village West	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	2.63	2.85	0	0	0	0.0
1	Village West	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
1	Village West	701.00	Red Dens SFDU	0.52	0.31	365	217	582	57.1
1	Village West	0.00	GP Alt MFDU	0.41	0.22	0	0	0	0.0
1	Village West	0.00	Tra V Internal	-64.00	-64.00	0	0	0	0.0
1	Village West	0.00	GP Alt Interna	-76.00	-76.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-106.00	-111.00	0	0	0	0
	Zone 1 Subtotal					416	275	691	67.7
2	Village East	0.00	Tra Vigne SFDU	0.51	0.30	0	0	0	0.0
2	Village East	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
2	Village East	0.00	Red Proj SFDU	0.53	0.31	0	0	0	0.0
2	Village East	396.00	Red Dens SFDU	0.52	0.31	206	123	329	32.3
	Zone 2 Subtotal					206	123	329	32.3
TOTAL						622	398	1020	100.0

EPAP + Reduce Dens Alt PM Pk Hr

Trip Distribution Report

Percent Of Trips EPAP PM

Zone	To Gates 1	2	5	6	8	9	10	11	14	15	16
1	2.0	1.0	2.0	4.0	7.0	2.0	3.0	3.0	1.0	3.0	8.0
2	2.0	1.0	2.0	4.0	7.0	2.0	3.0	3.0	1.0	3.0	8.0

Zone	To Gates 17	18	19	20	22	23
1	2.0	3.0	32.0	5.0	2.0	20.0
2	2.0	3.0	32.0	5.0	2.0	20.0

EPAP + Reduce Dens Alt PM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	D	42.4	0.915	D	43.3	0.937	+ 0.830 D/V
# 4 Eight Mile Rd & Davis Rd	C	29.0	0.812	C	29.9	0.836	+ 0.860 D/V
# 5 Eight Mile & Lower Sacto Rd	D	41.4	0.918	D	51.4	1.010	+ 9.979 D/V
# 6 West Lane & Armstrong Road	C	33.0	0.721	C	33.0	0.727	+ 0.025 D/V
# 7 West Lane & Ham Lane	A	4.2	0.254	A	4.2	0.259	-0.027 D/V
# 8 Eight Mile Rd & West Ln	E	55.2	1.014	E	66.4	1.054	+11.189 D/V
# 9 Eight Mile Road & Ham Lane	C	22.5	0.099	D	31.7	0.158	+ 9.195 D/V
# 10 Eight Mile & Leach Rd/St J	A	1.3	0.304	A	9.1	0.382	+ 7.736 D/V
# 11 Eight Mile & MickeGrove/Holman	A	2.7	0.317	A	8.8	0.434	+ 6.114 D/V
# 14 SR99 W Front & SB Ramps 8 Mile	B	11.8	0.374	B	12.2	0.388	+ 0.390 D/V
# 15 SR99 E Front & NB Ramps 8 Mile	C	24.8	0.658	E	42.2	0.864	+17.384 D/V
# 17 Holman & Lt Col Mark Taylor	C	29.1	0.412	C	29.2	0.412	+ 0.028 D/V
# 18 Morada Lane & West Lane	C	26.3	0.500	C	27.3	0.636	+ 0.958 D/V
# 19 Morada Lane & Holman Road	C	32.1	0.514	C	32.2	0.517	+ 0.078 D/V
# 20 SR99 W Front & SB Ramps Morada	C	23.3	0.693	C	24.5	0.708	+ 1.132 D/V
# 21 SR99 E Front & NB Ramps Morada	D	27.3	0.796	D	31.9	0.857	+ 4.559 D/V
# 24 West Ln & West Ln Frontage Rd	B	19.6	0.545	B	19.0	0.598	-0.577 D/V
# 25 West Lane & Knickerbocker Dr	C	24.8	0.540	C	23.6	0.589	-1.213 D/V
# 26 West Lane & Hammer Lane	D	35.8	0.728	D	35.6	0.728	-0.114 D/V
# 27 Hammer Lane & Holman Road	D	39.8	0.904	D	39.8	0.904	+ 0.006 D/V

EPAP + Reduce Dens Alt PM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 9 Eight Mile Road & Ham Lane	??? / ???	No / No
# 14 SR99 W Front & SB Ramps 8 Mile	??? / ???	No / No
# 15 SR99 E Front & NB Ramps 8 Mile	??? / ???	No / No
# 20 SR99 W Front & SB Ramps Morada	??? / ???	No / No
# 21 SR99 E Front & NB Ramps Morada	??? / ???	Yes / Yes

EPAP + Reduce Dens Alt PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #9 Eight Mile Road & Ham Lane

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0	1	0	0	0	1	0	2	0	0	0	1	1
Initial Vol:	0	0	0		14	0		13	6	874	0		0	1010		20
ApproachDel:	xxxxxx				31.7				xxxxxx				xxxxxx			

Approach[southbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=27]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1937]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + Reduce Dens Alt PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #9 Eight Mile Road & Ham Lane

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	1	0	0	0	1	1	0	2	0	0	0	0	1	1	0
Initial Vol:	0		0		0	14		0		13	6		874		0	0		1010		20

Major Street Volume: 1910
Minor Approach Volume: 27
Minor Approach Volume Threshold: 96 [less than minimum of 150]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Reduce Dens Alt PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	112			7	309	143			0	0		0		0	26		0		330
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					12.2				

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.2]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=356]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=927]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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EPAP + Reduce Dens Alt PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	112			7	309	143			0	0		0		0	26		0	330	

Major Street Volume: 571
Minor Approach Volume: 356
Minor Approach Volume Threshold: 469

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Reduce Dens Alt PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	60	234			0	0	204		181		349		0		50	0		0		0
ApproachDel:	xxxxxx					xxxxxx					42.2					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=4.7]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=399]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1078]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Reduce Dens Alt PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	60	234			0		0	204	181		349		0		50		0		0	0

Major Street Volume: 679
Minor Approach Volume: 399
Minor Approach Volume Threshold: 541

SIGNAL WARRANT DISCLAIMER
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EPAP + Reduce Dens Alt PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #20 SR99 W Front & SB Ramps Morada

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	73	318			30	101		0		0		0		0	372		0		16
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					24.5				

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=2.6]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=388]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=910]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Reduce Dens Alt PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #20 SR99 W Front & SB Ramps Morada

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0		73		318	30		101		0	0		0		0	372		0		16

Major Street Volume: 522
Minor Approach Volume: 388
Minor Approach Volume Threshold: 497

SIGNAL WARRANT DISCLAIMER
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EPAP + Reduce Dens Alt PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #21 SR99 E Front & NB Ramps Morada

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0
Initial Vol:	190		223		0	0		262		13	120		0		589	0		0		0
ApproachDel:	xxxxxx					xxxxxx					31.9					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=6.3]
SUCCEED - Vehicle-hours >= 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=709]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1397]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Reduce Dens Alt PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #21 SR99 E Front & NB Ramps Morada

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1 0 0 0			0 0 0 1 0			1 0 0 0 1			0 0 0 0 0		
Initial Vol:	190	223	0	0	262	13	120	0	589	0	0	0

Major Street Volume: 688
Minor Approach Volume: 709
Minor Approach Volume Threshold: 410

SIGNAL WARRANT DISCLAIMER
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EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.937
Loss Time (sec):	12	Average Delay (sec/veh):	43.3
Optimal Cycle:	130	Level Of Service:	D

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	0 1	0	1 0	2 0	1	1 0	1 1	0
Volume Module:	PM Peak Hour											
Base Vol:	422	20	49	18	61	219	174	1454	583	73	1229	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	422	20	49	18	61	219	174	1454	583	73	1229	5
Added Vol:	0	0	6	0	0	0	0	37	0	4	24	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	422	20	55	18	61	219	174	1491	583	77	1253	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	459	22	60	20	66	238	189	1621	634	84	1362	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	459	22	60	20	66	238	189	1621	634	84	1362	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	459	22	60	20	66	238	189	1621	634	84	1362	5
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.87	0.87	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	2.00	1.00	1.00	1.00	0.22	0.78	1.00	2.00	1.00	1.00	1.99	0.01
Final Sat.:	3432	1862	1583	1769	358	1286	1769	3538	1583	1769	3520	14
Capacity Analysis Module:												
Vol/Sat:	0.13	0.01	0.04	0.01	0.19	0.19	0.11	0.46	0.40	0.05	0.39	0.39
Crit Moves:	****				****			****		****		
Green/Cycle:	0.14	0.26	0.26	0.08	0.20	0.20	0.12	0.49	0.49	0.05	0.42	0.42
Volume/Cap:	0.94	0.04	0.14	0.14	0.94	0.94	0.92	0.94	0.82	0.94	0.92	0.92
Delay/Veh:	68.1	27.5	28.4	43.6	73.2	73.2	83.4	34.3	28.6	121.5	36.2	36.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.1	27.5	28.4	43.6	73.2	73.2	83.4	34.3	28.6	121.5	36.2	36.2
LOS by Move:	E	C	C	D	E	E	F	C	C	F	D	D
HCM2k95thQ:	502	23	67	34	593	593	263	922	598	156	896	896

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 1	0 1		1	0 0	1 0		1	0 2	0 1		1	0 1	1 0	
Lane Group:	L	T	R		L	RT	RT		L	T	R		L	RT	RT	
#LnsInGrps:	2	1	1		1	1	1		1	2	1		1	2	2	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.88	0.88		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.87	0.87		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	0.95	
Fnl Sat Adj:	0.90	0.98	0.83		0.93	0.87	0.87		0.93	0.93	0.83		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.14	0.26	0.26		0.08	0.20	0.20		0.12	0.49	0.49		0.05	0.42	0.42	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.88	0.89		0.98	0.99	0.99		1.00	0.95	0.88		1.00	0.96	0.96	
Q1:		6.5	0.4	1.1		0.5	8.3	8.3		5.2	21.2	13.1		2.3	18.0	18.0
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		1.00	1.00	1.00		0.69	0.69	0.69	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.09	0.09	0.09		0.67	0.67	0.67	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.03	0.06	0.06		0.11	0.42	0.42	
Q2:		4.5	0.0	0.2		0.2	5.0	5.0		0.2	0.8	0.3		0.8	3.3	3.3
HCM2KQueue:		11.0	0.4	1.3		0.7	13.3	13.3		5.4	22.0	13.4		3.1	21.3	21.3
70th%Factor:	1.18	1.20	1.20		1.20	1.17	1.17		1.19	1.16	1.17		1.19	1.16	1.16	
HCM2k70thQ:		12.9	0.5	1.6		0.8	15.6	15.6		6.4	25.5	15.7		3.7	24.7	24.7
85th%Factor:	1.51	1.60	1.59		1.59	1.49	1.49		1.55	1.44	1.49		1.57	1.45	1.45	
HCM2k85thQ:		16.6	0.7	2.1		1.1	19.8	19.8		8.4	31.8	20.0		4.9	30.8	30.8
90th%Factor:	1.63	1.79	1.77		1.79	1.61	1.61		1.71	1.53	1.60		1.74	1.54	1.54	
HCM2k90thQ:		17.9	0.8	2.3		1.2	21.3	21.3		9.2	33.7	21.5		5.4	32.8	32.8
95th%Factor:	1.83	2.09	2.06		2.08	1.79	1.79		1.94	1.68	1.79		2.00	1.68	1.68	
HCM2k95thQ:		20.1	0.9	2.7		1.4	23.7	23.7		10.5	36.9	23.9		6.2	35.9	35.9
98th%Factor:	2.13	2.67	2.60		2.65	2.06	2.06		2.36	1.88	2.06		2.49	1.89	1.89	
HCM2k98thQ:		23.4	1.2	3.4		1.8	27.4	27.4		12.8	41.5	27.5		7.7	40.3	40.3

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.836
Loss Time (sec):	12	Average Delay (sec/veh):	29.9
Optimal Cycle:	86	Level Of Service:	C

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	1	0	0	1	0	1	0	1	1	0	1	0	2	0	1
Volume Module:	PM Peak Hour											
Base Vol:	178	85	73	8	98	114	95	1081	265	72	1098	3
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	178	85	73	8	98	114	95	1081	265	72	1098	3
Added Vol:	0	0	19	0	0	0	0	44	0	12	28	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	178	85	92	8	98	114	95	1125	265	84	1126	3
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	193	92	100	9	107	124	103	1223	288	91	1224	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	193	92	100	9	107	124	103	1223	288	91	1224	3
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	193	92	100	9	107	124	103	1223	288	91	1224	3
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.90	0.90	0.93	0.90	0.90	0.93	0.93	0.83
Lanes:	1.00	1.00	1.00	1.00	0.46	0.54	1.00	1.62	0.38	1.00	2.00	1.00
Final Sat.:	1769	1862	1583	1769	791	920	1769	2780	655	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.11	0.05	0.06	0.00	0.13	0.13	0.06	0.44	0.44	0.05	0.35	0.00
Crit Moves:	****				****			****		****		
Green/Cycle:	0.13	0.27	0.27	0.02	0.16	0.16	0.08	0.53	0.53	0.06	0.50	0.50
Volume/Cap:	0.84	0.18	0.23	0.23	0.84	0.84	0.69	0.84	0.84	0.84	0.69	0.00
Delay/Veh:	64.8	28.1	28.7	51.4	60.1	60.1	57.1	23.6	23.6	86.5	20.0	12.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.8	28.1	28.7	51.4	60.1	60.1	57.1	23.6	23.6	86.5	20.0	12.4
LOS by Move:	E	C	C	D	E	E	E	C	C	F	C	B
HCM2k95thQ:	389	101	114	27	435	435	145	728	728	241	583	2

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	1	0	1	0	1		1	0	0	1	0		1	0	1	1	0		1	0	2	0	1	
Lane Group:	L		T		R		L		RT		RT		L		RT		RT		L		T		R	
#LnsInGrps:	1		1		1		1		1		1		1		2		2		1		2		1	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:			8						8						8						8			
% Hev Veh:			2						2						2						2			
Grade:			0%						0%						0%						0%			
Parking/Hr:			No						No						No						No			
Bus Stp/Hr:			0						0						0						0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0						0						0						0			
ExclusiveRT:			Include						Include						Include						Include			
% RT Prtct:			0						0						0						0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx		
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
Hev Veh Adj:	0.98	0.98		0.98			0.98	0.98		0.98			0.98	0.98		0.98			0.98	0.98		0.98		
Grade Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
Parking Adj:	xxxx	xxxx		1.00			xxxx	1.00		1.00			xxxx	1.00		1.00			xxxx	xxxx		1.00		
Bus Stp Adj:	xxxx	xxxx		1.00			xxxx	1.00		1.00			xxxx	1.00		1.00			xxxx	xxxx		1.00		
Area Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
RT Adj:	xxxx	xxxx		0.85			xxxx	0.92		0.92			xxxx	0.97		0.97			xxxx	xxxx		0.85		
LT Adj:	0.95	xxxx		xxxxx			0.95	xxxx		xxxxx			0.95	xxxx		xxxxx			0.95	xxxx		xxxxx		
PedBike Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
HCM Sat Adj:	0.93	0.98		0.83			0.93	0.90		0.90			0.93	0.95		0.95			0.93	0.98		0.83		
Usr Sat Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
MLF Sat Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	0.95		0.95			1.00	0.95		1.00		
Fnl Sat Adj:	0.93	0.98		0.83			0.93	0.90		0.90			0.93	0.90		0.90			0.93	0.93		0.83		
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.13	0.27	0.27	0.02	0.16	0.16	0.08	0.53	0.53	0.06	0.50	0.50
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.89	0.90	0.99	0.99	0.99	0.99	0.85	0.85	1.00	0.80	0.66
Q1:	5.2	1.8	1.9	0.2	6.1	6.1	2.8	15.9	15.9	2.5	10.9	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.94	0.94	0.94	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	0.24	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.06	0.17	0.17	1.00	1.00	1.00
Q2:	3.1	0.2	0.3	0.3	3.2	3.2	0.1	0.8	0.8	2.4	2.1	0.0
HCM2KQueue:	8.3	2.0	2.2	0.5	9.4	9.4	2.9	16.8	16.8	4.9	13.0	0.0
70th%Factor:	1.18	1.20	1.19	1.20	1.18	1.18	1.19	1.17	1.17	1.19	1.17	1.20
HCM2k70thQ:	9.8	2.4	2.7	0.6	11.0	11.0	3.4	19.5	19.5	5.9	15.3	0.0
85th%Factor:	1.53	1.58	1.58	1.59	1.52	1.52	1.57	1.47	1.47	1.55	1.49	1.60
HCM2k85thQ:	12.6	3.1	3.5	0.8	14.2	14.2	4.5	24.7	24.7	7.7	19.5	0.1
90th%Factor:	1.66	1.76	1.76	1.79	1.65	1.65	1.75	1.57	1.57	1.71	1.61	1.80
HCM2k90thQ:	13.8	3.5	3.9	0.9	15.5	15.5	5.0	26.4	26.4	8.5	20.9	0.1
95th%Factor:	1.88	2.04	2.03	2.08	1.86	1.86	2.01	1.74	1.74	1.96	1.79	2.10
HCM2k95thQ:	15.6	4.0	4.5	1.1	17.4	17.4	5.8	29.1	29.1	9.7	23.3	0.1
98th%Factor:	2.23	2.56	2.54	2.66	2.19	2.19	2.50	1.98	1.98	2.38	2.07	2.70
HCM2k98thQ:	18.5	5.1	5.7	1.4	20.5	20.5	7.2	33.1	33.1	11.8	26.9	0.1

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec): 100 Critical Vol./Cap.(X): 1.010
Loss Time (sec): 12 Average Delay (sec/veh): 51.4
Optimal Cycle: 180 Level Of Service: D

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:	PM Peak Hour											
Base Vol:	49	372	339	61	334	112	98	1001	22	375	1111	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	49	372	339	61	334	112	98	1001	22	375	1111	42
Added Vol:	0	0	50	12	0	0	0	62	0	32	40	8
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	49	372	389	73	334	112	98	1063	22	407	1151	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	53	404	423	79	363	122	107	1155	24	442	1251	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	53	404	423	79	363	122	107	1155	24	442	1251	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	53	404	423	79	363	122	107	1155	24	442	1251	54
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.98	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3432	1862	1583	1769	1862	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.02	0.22	0.27	0.04	0.19	0.08	0.06	0.33	0.02	0.25	0.35	0.03
Crit Moves:			****	****				****		****		
Green/Cycle:	0.02	0.26	0.26	0.04	0.29	0.29	0.08	0.32	0.32	0.25	0.49	0.49
Volume/Cap:	0.68	0.82	1.01	1.01	0.68	0.27	0.72	1.01	0.05	1.01	0.72	0.07
Delay/Veh:	70.3	45.1	83.3	152.1	35.2	27.9	61.1	62.9	23.3	83.1	21.8	13.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	70.3	45.1	83.3	152.1	35.2	27.9	61.1	62.9	23.3	83.1	21.8	13.6
LOS by Move:	E	D	F	F	D	C	E	E	C	F	C	B
HCM2k95thQ:	100	610	822	263	477	136	234	1067	23	849	642	33

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	1	0 1	1	0	1	0 1	1	0	2	0 1	1	0	2	0 1
Lane Group:	L		T	R	L		T	R	L		T	R	L		T	R
#LnsInGrps:	2		1	1	1		1	1	1		2	1	1		2	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.90	0.98	0.83		0.93	0.98	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.02	0.26	0.26		0.04	0.29	0.29		0.08	0.32	0.32		0.25	0.49	0.49	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.97	1.00		1.00	0.94	0.89		0.99	1.00	0.85		1.00	0.83	0.69	
Q1:	0.8	10.2	11.7		2.2	8.4	2.3		2.9	16.9	0.4		12.3	12.1	0.6	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	1.2	3.5	7.5		3.2	2.0	0.4		1.9	9.1	0.0		7.7	2.4	0.1	
HCM2KQueue:	2.0	13.7	19.3		5.4	10.4	2.7		4.8	26.0	0.4		20.0	14.5	0.6	
70th%Factor:	1.20	1.17	1.16		1.19	1.18	1.19		1.19	1.15	1.20		1.16	1.17	1.20	
HCM2k70thQ:	2.4	16.1	22.4		6.4	12.2	3.2		5.7	29.9	0.5		23.2	17.0	0.8	
85th%Factor:	1.58	1.49	1.46		1.55	1.51	1.57		1.56	1.43	1.60		1.45	1.48	1.59	
HCM2k85thQ:	3.1	20.4	28.1		8.4	15.7	4.2		7.4	37.1	0.7		29.1	21.6	1.0	
90th%Factor:	1.76	1.60	1.55		1.71	1.64	1.75		1.72	1.51	1.79		1.55	1.59	1.79	
HCM2k90thQ:	3.5	22.0	29.9		9.2	17.0	4.7		8.2	39.2	0.8		30.9	23.2	1.1	
95th%Factor:	2.04	1.78	1.71		1.94	1.84	2.02		1.96	1.64	2.09		1.70	1.77	2.08	
HCM2k95thQ:	4.0	24.4	32.9		10.5	19.1	5.4		9.4	42.7	0.9		34.0	25.7	1.3	
98th%Factor:	2.56	2.05	1.93		2.36	2.15	2.51		2.39	1.84	2.67		1.91	2.03	2.65	
HCM2k98thQ:	5.0	28.1	37.1		12.7	22.3	6.8		11.4	47.7	1.2		38.3	29.5	1.7	

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.727
Loss Time (sec):	12	Average Delay (sec/veh):	33.0
Optimal Cycle:	63	Level Of Service:	C

Street Name:	West Lane						Armstrong Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	0 0	1!	0 0	0 0	1!	0 0
Volume Module:PM Peak Hour												
Base Vol:	3	582	41	132	476	35	29	60	4	78	202	208
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	582	41	132	476	35	29	60	4	78	202	208
Added Vol:	0	16	0	0	25	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	598	41	132	501	35	29	60	4	78	202	208
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	3	650	45	143	545	38	32	65	4	85	220	226
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	650	45	143	545	38	32	65	4	85	220	226
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	650	45	143	545	38	32	65	4	85	220	226
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.92	0.92	0.93	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92
Lanes:	1.00	1.87	0.13	1.00	1.87	0.13	0.31	0.65	0.04	0.16	0.41	0.43
Final Sat.:	1769	3278	225	1769	3274	229	568	1176	78	278	720	742
Capacity Analysis Module:												
Vol/Sat:	0.00	0.20	0.20	0.08	0.17	0.17	0.06	0.06	0.06	0.30	0.30	0.30
Crit Moves:		****		****					****	****		
Green/Cycle:	0.00	0.27	0.27	0.11	0.38	0.38	0.08	0.08	0.08	0.42	0.42	0.42
Volume/Cap:	0.44	0.73	0.73	0.73	0.44	0.44	0.73	0.73	0.73	0.73	0.73	0.73
Delay/Veh:	85.8	35.8	35.8	55.7	23.3	23.3	62.6	62.6	62.6	27.9	27.9	27.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	85.8	35.8	35.8	55.7	23.3	23.3	62.6	62.6	62.6	27.9	27.9	27.9
LOS by Move:	F	D	D	E	C	C	E	E	E	C	C	C
HCM2k95thQ:	27	507	507	283	297	297	227	227	227	597	597	597

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	1	1	0	1 0	1	1	0	0 0	1!	0	0	0 0	1!	0	0
Lane Group:	L	RT		RT	L	RT		RT	LTR	LTR		LTR	LTR	LTR		LTR
#LnsInGrps:	1	2		2	1	2		2	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		4	4		4	4	4		4
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98		0.98	0.98	0.98		0.98
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
RT Adj:	xxxx	0.99	0.99		xxxx	0.99	0.99		0.99	0.99		0.99	0.94	0.94		0.94
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.99	0.99		0.99	0.99	0.99		0.99
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
HCM Sat Adj:	0.93	0.97	0.97		0.93	0.97	0.97		0.96	0.96		0.96	0.92	0.92		0.92
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
MLF Sat Adj:	1.00	0.95	0.95		1.00	0.95	0.95		1.00	1.00		1.00	1.00	1.00		1.00
Fnl Sat Adj:	0.93	0.92	0.92		0.93	0.92	0.92		0.96	0.96		0.96	0.92	0.92		0.92
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.00	0.27	0.27	0.11	0.38	0.38	0.08	0.08	0.08	0.42	0.42	0.42
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.95	0.95	0.99	0.85	0.85	0.99	0.99	0.99	0.89	0.89	0.89
Q1:	0.1	8.8	8.8	3.8	5.4	5.4	2.7	2.7	2.7	10.9	10.9	10.9
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.4	2.3	2.3	2.0	0.8	0.8	1.9	1.9	1.9	2.4	2.4	2.4
HCM2KQueue:	0.5	11.1	11.1	5.8	6.2	6.2	4.6	4.6	4.6	13.4	13.4	13.4
70th%Factor:	1.20	1.18	1.18	1.19	1.19	1.19	1.19	1.19	1.19	1.17	1.17	1.17
HCM2k70thQ:	0.6	13.1	13.1	6.9	7.3	7.3	5.5	5.5	5.5	15.7	15.7	15.7
85th%Factor:	1.59	1.51	1.51	1.55	1.54	1.54	1.56	1.56	1.56	1.49	1.49	1.49
HCM2k85thQ:	0.8	16.8	16.8	9.0	9.5	9.5	7.2	7.2	7.2	20.0	20.0	20.0
90th%Factor:	1.79	1.63	1.63	1.70	1.69	1.69	1.72	1.72	1.72	1.60	1.60	1.60
HCM2k90thQ:	0.9	18.1	18.1	9.9	10.4	10.4	7.9	7.9	7.9	21.5	21.5	21.5
95th%Factor:	2.08	1.82	1.82	1.93	1.93	1.93	1.96	1.96	1.96	1.79	1.79	1.79
HCM2k95thQ:	1.1	20.3	20.3	11.3	11.9	11.9	9.1	9.1	9.1	23.9	23.9	23.9
98th%Factor:	2.66	2.12	2.12	2.34	2.32	2.32	2.40	2.40	2.40	2.06	2.06	2.06
HCM2k98thQ:	1.4	23.6	23.6	13.7	14.3	14.3	11.1	11.1	11.1	27.5	27.5	27.5

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.259
Loss Time (sec): 9 Average Delay (sec/veh): 4.2
Optimal Cycle: 24 Level Of Service: A

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0 1	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Volume Module:	PM Peak Hour											
Base Vol:	0	2	21	18	0	1	5	669	0	16	545	45
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2	21	18	0	1	5	669	0	16	545	45
Added Vol:	0	0	0	0	0	0	0	15	0	1	24	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2	21	18	0	1	5	684	0	17	569	45
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	2	23	20	0	1	5	743	0	18	618	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2	23	20	0	1	5	743	0	18	618	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2	23	20	0	1	5	743	0	18	618	49
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.86	0.86	0.71	1.00	0.71	0.93	0.93	0.95	0.93	0.92	0.92
Lanes:	0.00	0.09	0.91	0.95	0.00	0.05	1.00	2.00	0.00	1.00	1.85	0.15
Final Sat.:	0	142	1491	1275	0	71	1769	3538	0	1769	3242	256
Capacity Analysis Module:												
Vol/Sat:	0.00	0.02	0.02	0.02	0.00	0.02	0.00	0.21	0.00	0.01	0.19	0.19
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.06	0.06	0.06	0.00	0.06	0.01	0.81	0.00	0.04	0.84	0.84
Volume/Cap:	0.00	0.26	0.26	0.26	0.00	0.26	0.23	0.26	0.00	0.26	0.23	0.23
Delay/Veh:	0.0	46.4	46.4	46.7	0.0	46.7	53.6	2.3	0.0	48.5	1.7	1.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	46.4	46.4	46.7	0.0	46.7	53.6	2.3	0.0	48.5	1.7	1.7
LOS by Move:	A	D	D	D	A	D	D	A	A	D	A	A
HCM2k95thQ:	0	51	51	45	0	45	22	18	0	43	15	15

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

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Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        0  0  0  1  0    0  0  1! 0  0    1  0  1  1  0    1  0  1  1  0
Lane Group:  xxxx  RT     RT   LTR  LTR   LTR    L   RT     RT    L   RT     RT
#LnsInGrps:     0    1     1     1    1     1     1    2     2     1    2     2
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:         8                8                8                8
% Hev Veh:           2                2                2                2
Grade:              0%               0%               0%               0%
Parking/Hr:         No               No               No               No
Bus Stp/Hr:          0                0                0                0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:         0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:          0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:  xxxx xxxx  xxxx     5 xxxx     5     1 xxxx  xxxx     1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  xxxx 1.00  1.00  1.00 xxxx  1.00  1.00 1.00 xxxxx  1.00 1.00  1.00
Hev Veh Adj: xxxx 0.98  0.98  0.98 xxxx  0.98  0.98 0.98 xxxxx  0.98 0.98  0.98
Grade Adj:   xxxx 1.00  1.00  1.00 xxxx  1.00  1.00 1.00 xxxxx  1.00 1.00  1.00
Parking Adj: xxxx 1.00  1.00  1.00 xxxx  1.00  xxxx 1.00 xxxxx  xxxx 1.00  1.00
Bus Stp Adj: xxxx 1.00  1.00  1.00 xxxx  1.00  xxxx 1.00 xxxxx  xxxx 1.00  1.00
Area Adj:    xxxx 1.00  1.00  1.00 xxxx  1.00  1.00 1.00 xxxxx  1.00 1.00  1.00
RT Adj:      xxxx 0.88  0.88  0.99 xxxx  0.99  xxxx xxxx xxxxx  xxxx 0.99  0.99
LT Adj:      xxxx xxxx xxxxx  0.73 xxxx  0.73  0.95 xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 1.00 0.86  0.86  0.71 1.00  0.71  0.93 0.98  1.00  0.93 0.97  0.97
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 0.95  0.95  1.00 0.95  0.95
Fnl Sat Adj: 1.00 0.86  0.86  0.71 1.00  0.71  0.93 0.93  0.95  0.93 0.92  0.92
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  0.00 1.00  1.00  1.00 0.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
```


EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	xxxxxx	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	xxxxxx	4.91	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	xxxxxx	5.91	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	xxxxxx	5.91	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	xxxxxx	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	xxxxxx	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	xxxxxx	20	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	xxxxxx	0.95	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	0.00	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	xxxxxx	0.54	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	xxxxxx	25	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	xxxxxx	0.69	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	xxxxxx	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	xxxxxx	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	xxxxxx	0.00	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	xxxxxx	0.92	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	xxxxxx	0.43	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	xxxxxx	5.48	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	xxxxxx	0.22	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	1.00	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	xxxxxx	1.44	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	xxxxxx	1.00	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	xxxxxx	0.66	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	xxxxxx	0.73	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	xxxxxx	0.73	xxxxxx	xxxxxx

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.00	0.06	0.06	0.06	0.00	0.06	0.01	0.81	0.00	0.04	0.84	0.84
ArrivalType:	4				4				4				4			
ProgFactor:	1.00	0.98	0.98	0.98	1.00	0.98	1.00	0.00	1.00	0.99	0.00	0.00
Q1:	0.0	0.7	0.7	0.5	0.0	0.5	0.1	0.0	0.0	0.5	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Q2:	0.0	0.3	0.3	0.3	0.0	0.3	0.3	0.3	0.0	0.3	0.3	0.3
HCM2KQueue:	0.0	1.0	1.0	0.9	0.0	0.9	0.4	0.3	0.0	0.8	0.3	0.3
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	0.0	1.2	1.2	1.0	0.0	1.0	0.5	0.4	0.0	1.0	0.4	0.4
85th%Factor:	1.60	1.59	1.59	1.59	1.60	1.59	1.60	1.60	1.60	1.59	1.60	1.60
HCM2k85thQ:	0.0	1.6	1.6	1.4	0.0	1.4	0.7	0.6	0.0	1.3	0.5	0.5
90th%Factor:	1.80	1.78	1.78	1.78	1.80	1.78	1.79	1.79	1.80	1.78	1.79	1.79
HCM2k90thQ:	0.0	1.8	1.8	1.6	0.0	1.6	0.7	0.6	0.0	1.5	0.5	0.5
95th%Factor:	2.10	2.07	2.07	2.07	2.10	2.07	2.09	2.09	2.10	2.07	2.09	2.09
HCM2k95thQ:	0.0	2.0	2.0	1.8	0.0	1.8	0.9	0.7	0.0	1.7	0.6	0.6
98th%Factor:	2.70	2.63	2.63	2.63	2.70	2.63	2.67	2.67	2.70	2.64	2.68	2.68
HCM2k98thQ:	0.0	2.6	2.6	2.3	0.0	2.3	1.1	0.9	0.0	2.2	0.8	0.8

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	1.054
Loss Time (sec):	12	Average Delay (sec/veh):	66.4
Optimal Cycle:	180	Level Of Service:	E

Street Name:	West Lane								Eight Mile Road			
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	2	0 1	1	0	2	0 1	1	0	2	0 1	1	0	2	0 1
Volume Module:	PM Peak Hour															
Base Vol:	528	385	84		14	320	204		264	728	458		68	865	3	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	528	385	84		14	320	204		264	728	458		68	865	3	
Added Vol:	34	7	75		14	10	0		0	73	52		58	46	9	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	562	392	159		28	330	204		264	801	510		126	911	12	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	611	426	173		30	359	222		287	871	554		137	990	13	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	611	426	173		30	359	222		287	871	554		137	990	13	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	611	426	173		30	359	222		287	871	554		137	990	13	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Lanes:	1.00	2.00	1.00		1.00	2.00	1.00		1.00	2.00	1.00		1.00	2.00	1.00	
Final Sat.:	1769	3538	1583		1769	3538	1583		1769	3538	1583		1769	3538	1583	
Capacity Analysis Module:																
Vol/Sat:	0.35	0.12	0.11		0.02	0.10	0.14		0.16	0.25	0.35		0.08	0.28	0.01	
Crit Moves:	****						****		****					****		
Green/Cycle:	0.33	0.40	0.40		0.06	0.13	0.13		0.15	0.34	0.34		0.08	0.27	0.27	
Volume/Cap:	1.05	0.30	0.27		0.30	0.76	1.05		1.05	0.72	1.02		1.02	1.05	0.03	
Delay/Veh:	86.0	20.4	20.2		46.8	49.1	120.4		111.8	30.7	76.5		129.2	81.4	27.2	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	86.0	20.4	20.2		46.8	49.1	120.4		111.8	30.7	76.5		129.2	81.4	27.2	
LOS by Move:	F	C	C		D	D	F		F	C	E		F	F	C	
HCM2k95thQ:	1041	183	140		62	351	550		658	565	1010		283	916	13	

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 2	0 1		1	0 2	0 1		1	0 2	0 1		1	0 2	0 1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	2	1		1	2	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.33	0.40	0.40		0.06	0.13	0.13		0.15	0.34	0.34		0.08	0.27	0.27	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.81	0.81		0.99	0.99	1.00		1.00	0.93	1.00		1.00	1.00	0.88	
Q1:	17.0	3.4	2.6		0.8	5.0	6.2		8.0	10.3	15.4		3.8	14.5	0.2	
UpstreamVC:	0.44	0.44	0.44		0.00	0.00	0.00		0.00	0.00	0.00		0.36	0.36	0.36	
UpstreamAdj:	0.90	0.90	0.90		0.00	0.00	0.00		0.00	0.00	0.00		0.94	0.94	0.94	
EarlyArrAdj:	0.48	0.56	0.51		1.00	1.00	1.00		1.00	1.00	1.00		0.21	0.45	0.41	
Q2:	8.3	0.2	0.2		0.4	2.4	6.0		7.0	2.3	9.0		2.1	7.4	0.0	
HCM2KQueue:	25.3	3.7	2.8		1.2	7.4	12.2		14.9	12.6	24.4		5.9	21.8	0.2	
70th%Factor:	1.15	1.19	1.19		1.20	1.18	1.17		1.17	1.17	1.15		1.19	1.16	1.20	
HCM2k70thQ:	29.1	4.4	3.3		1.4	8.8	14.3		17.5	14.7	28.2		7.0	25.3	0.3	
85th%Factor:	1.43	1.57	1.57		1.59	1.53	1.50		1.48	1.50	1.43		1.55	1.44	1.60	
HCM2k85thQ:	36.1	5.7	4.4		1.9	11.4	18.3		22.2	18.8	35.0		9.1	31.5	0.4	
90th%Factor:	1.51	1.73	1.75		1.78	1.68	1.62		1.59	1.61	1.52		1.70	1.53	1.80	
HCM2k90thQ:	38.2	6.4	4.9		2.1	12.4	19.7		23.8	20.3	37.1		10.0	33.5	0.4	
95th%Factor:	1.65	1.99	2.01		2.06	1.90	1.80		1.76	1.80	1.65		1.93	1.68	2.09	
HCM2k95thQ:	41.6	7.3	5.6		2.5	14.1	22.0		26.3	22.6	40.4		11.3	36.6	0.5	
98th%Factor:	1.84	2.45	2.51		2.61	2.27	2.09		2.02	2.08	1.85		2.34	1.89	2.68	
HCM2k98thQ:	46.6	9.0	7.0		3.2	16.8	25.5		30.1	26.1	45.2		13.7	41.2	0.7	

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: D[31.7]

Street Name:	Ham Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 0			1 0 0 0 1			1 0 2 0 0			0 0 1 1 0		
Volume Module:PM Peak Hour												
Base Vol:	0	0	0	13	0	13	6	726	0	0	851	20
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	13	0	13	6	726	0	0	851	20
Added Vol:	0	0	0	1	0	0	0	148	0	0	159	0
Pass-By:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	14	0	13	6	874	0	0	1010	20
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	15	0	14	7	950	0	0	1098	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	15	0	14	7	950	0	0	1098	22
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	1597	xxxx	560	1120	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	97	xxxx	472	620	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	96	xxxx	472	620	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.16	xxxx	0.03	0.01	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	13.3	xxxx	2.3	0.8	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	49.2	xxxx	12.9	10.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	E	*	B	B	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			31.7			xxxxxx			xxxxxx		
ApproachLOS:	*			D			*			*		

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:							#23			#26		
Dist(miles):							0.250			0.250		
Speed (mph):							1.00			1.00		
SignalIndex:							#53			#10		
Cycle Time:							100 secs			100 secs		
InitVolume:							0	910	43	970		
Saturation:							0	3538	1769	3516		
ArrivalType:							0	4	4	4		
G/C:							0.00	0.67	0.07	0.80		
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:							0.000	0.889	0.092	1.068		
gq1:							0.00	2.86	2.21	-1.87		
gq2:							0.00	1.49	0.07	-1.08		
gq:							0.00	4.36	2.28	-2.95		
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:							0.500			0.500		
beta:							0.667			0.667		
ta (secs):							900.000			900.000		
F:							0.003			0.003		
f:							1.000	1.000	1.000	1.000		
vcmax:							0	51	13	-35		
vcg:							0	269	14	286		
vcmin:							2000	2000	2000	2000		
tp:							0.0	0.0	0.0	0.0		
p:							0.000			0.000		
*** Computation 3: Platoon Event Periods												
pdom/psubo:							0.000/0.000/Unconstrained					
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	1512	2083	475	1597	2072	560	1120	xxxxx	xxxxx	0	xxxxx	xxxxx
AdjCnflVol:	1512	2083	475	1597	2072	560	1120	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
ConflictVol:	1512	2083	475	1597	2072	560	1120	xxxxx	xxxxx	0	xxxxx	xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	83	52	536	97	53	472	620	xxxxx	xxxxx	1622	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
Potent Cap.:	83	52	536	97	53	472	620	xxxxx	xxxxx	1622	xxxxx	xxxxx

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St J

Cycle (sec):	100	Critical Vol./Cap.(X):	0.382
Loss Time (sec):	12	Average Delay (sec/veh):	9.1
Optimal Cycle:	34	Level Of Service:	A

Street Name:	Leach Road/Street J						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0
Volume Module:	PM Peak Hour											
Base Vol:	0	0	0	6	0	5	6	681	0	0	854	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	6	0	5	6	681	0	0	854	5
Added Vol:	43	0	50	0	0	0	0	77	72	83	116	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	43	0	50	6	0	5	6	758	72	83	970	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	47	0	54	7	0	5	7	824	78	90	1054	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	47	0	54	7	0	5	7	824	78	90	1054	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	47	0	54	7	0	5	7	824	78	90	1054	5
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	0.93	1.00	0.83	0.93	0.92	0.92	0.93	0.93	0.93
Lanes:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.83	0.17	1.00	1.99	0.01
Final Sat.:	1769	0	1583	1769	0	1583	1769	3189	303	1769	3516	18
Capacity Analysis Module:												
Vol/Sat:	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.26	0.26	0.05	0.30	0.30
Crit Moves:	****				****			****		****		
Green/Cycle:	0.07	0.00	0.06	0.01	0.00	0.01	0.01	0.68	0.68	0.13	0.80	0.80
Volume/Cap:	0.38	0.00	0.55	0.55	0.00	0.51	0.37	0.38	0.38	0.38	0.37	0.37
Delay/Veh:	46.5	0.0	51.9	94.6	0.0	85.8	62.2	7.1	7.1	40.6	2.9	2.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.5	0.0	51.9	94.6	0.0	85.8	62.2	7.1	7.1	40.6	2.9	2.9
LOS by Move:	D	A	D	F	A	F	E	A	A	D	A	A
HCM2k95thQ:	92	0	125	42	0	37	11	123	123	141	31	31

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	1	0	0	1	0		1	0	0	1	0		1	0	1	1	0		1	0	1	1	0	
Lane Group:	L		RT		RT		L		RT		RT		L		RT		RT		L		RT		RT	
#LnsInGrps:	1		1		1		1		1		1		1		2		2		1		2		2	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:			8						8						8						8			
% Hev Veh:			2						2						2						2			
Grade:			0%						0%						0%						0%			
Parking/Hr:			No						No						No						No			
Bus Stp/Hr:			0						0						0						0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0						0						0						0			
ExclusiveRT:			Include						Include						Include						Include			
% RT Prtct:			0						0						0						0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx		
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	xxxx		1.00			1.00	xxxx		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
Hev Veh Adj:	0.98	xxxx		0.98			0.98	xxxx		0.98			0.98	0.98		0.98			0.98	0.98		0.98		
Grade Adj:	1.00	xxxx		1.00			1.00	xxxx		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
Parking Adj:	xxxx	xxxx		1.00			xxxx	xxxx		1.00			xxxx	1.00		1.00			xxxx	1.00		1.00		
Bus Stp Adj:	xxxx	xxxx		1.00			xxxx	xxxx		1.00			xxxx	1.00		1.00			xxxx	1.00		1.00		
Area Adj:	1.00	xxxx		1.00			1.00	xxxx		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
RT Adj:	xxxx	xxxx		0.85			xxxx	xxxx		0.85			xxxx	0.99		0.99			xxxx	1.00		1.00		
LT Adj:	0.95	xxxx		xxxxx			0.95	xxxx		xxxxx			0.95	xxxx		xxxxx			0.95	xxxx		xxxxx		
PedBike Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
HCM Sat Adj:	0.93	1.00		0.83			0.93	1.00		0.83			0.93	0.97		0.97			0.93	0.98		0.98		
Usr Sat Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
MLF Sat Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	0.95		0.95			1.00	0.95		0.95		
Fnl Sat Adj:	0.93	1.00		0.83			0.93	1.00		0.83			0.93	0.92		0.92			0.93	0.93		0.93		
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	0.00		1.00			1.00	0.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.07	0.00	0.06	0.01	0.00	0.01	0.01	0.68	0.68	0.13	0.80	0.80
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	1.00	0.99	1.00	1.00	1.00	1.00	0.34	0.34	0.97	0.00	0.00
Q1:	1.2	0.0	1.5	0.2	0.0	0.2	0.2	2.0	2.0	2.2	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.42	0.42	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.91	0.91	0.91	0.00	0.00	0.00
EarlyArrAdj:	1.00	0.00	1.00	1.00	0.00	1.00	0.06	0.76	0.76	1.00	1.00	1.00
Q2:	0.6	0.0	1.0	0.6	0.0	0.6	0.0	0.5	0.5	0.6	0.6	0.6
HCM2KQueue:	1.8	0.0	2.5	0.8	0.0	0.7	0.2	2.4	2.4	2.8	0.6	0.6
70th%Factor:	1.20	1.20	1.19	1.20	1.20	1.20	1.20	1.19	1.19	1.19	1.20	1.20
HCM2k70thQ:	2.2	0.0	3.0	1.0	0.0	0.9	0.3	2.9	2.9	3.3	0.7	0.7
85th%Factor:	1.58	1.60	1.58	1.59	1.60	1.59	1.60	1.58	1.58	1.57	1.59	1.59
HCM2k85thQ:	2.9	0.0	3.9	1.3	0.0	1.1	0.3	3.8	3.8	4.4	0.9	0.9
90th%Factor:	1.77	1.80	1.75	1.78	1.80	1.79	1.80	1.75	1.75	1.75	1.79	1.79
HCM2k90thQ:	3.2	0.0	4.3	1.4	0.0	1.3	0.4	4.3	4.3	4.9	1.1	1.1
95th%Factor:	2.04	2.10	2.02	2.07	2.10	2.08	2.09	2.02	2.02	2.01	2.08	2.08
HCM2k95thQ:	3.7	0.0	5.0	1.7	0.0	1.5	0.4	4.9	4.9	5.7	1.2	1.2
98th%Factor:	2.57	2.70	2.53	2.64	2.70	2.65	2.68	2.53	2.53	2.51	2.66	2.66
HCM2k98thQ:	4.6	0.0	6.3	2.1	0.0	1.9	0.6	6.1	6.1	7.0	1.6	1.6

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Cycle (sec): 100 Critical Vol./Cap.(X): 0.434
Loss Time (sec): 12 Average Delay (sec/veh): 8.8
Optimal Cycle: 37 Level Of Service: A

Street Name:	Micke Grove Road/Holman Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	0 1	1	0 1	0 1	1	0 2	0 1	1	0 2	0 1
Volume Module:	PM Peak Hour											
Base Vol:	0	0	0	18	0	8	6	767	0	0	861	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	18	0	8	6	767	0	0	861	11
Added Vol:	42	0	0	0	0	44	28	72	27	0	114	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	42	0	0	18	0	52	34	839	27	0	975	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	46	0	0	20	0	57	37	912	29	0	1060	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	46	0	0	20	0	57	37	912	29	0	1060	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	46	0	0	20	0	57	37	912	29	0	1060	12
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	1.00	0.93	1.00	0.83	0.93	0.93	0.83	1.00	0.93	0.83
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1769	1900	1900	1769	1900	1583	1769	3538	1583	1900	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.00	0.00	0.01	0.00	0.04	0.02	0.26	0.02	0.00	0.30	0.01
Crit Moves:	****					****	****				****	
Green/Cycle:	0.06	0.00	0.00	0.14	0.00	0.08	0.05	0.74	0.74	0.00	0.69	0.69
Volume/Cap:	0.43	0.00	0.00	0.08	0.00	0.43	0.43	0.35	0.03	0.00	0.43	0.01
Delay/Veh:	48.3	0.0	0.0	37.4	0.0	46.0	49.8	4.7	3.5	0.0	7.0	4.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.3	0.0	0.0	37.4	0.0	46.0	49.8	4.7	3.5	0.0	7.0	4.8
LOS by Move:	D	A	A	D	A	D	D	A	A	A	A	A
HCM2k95thQ:	97	0	0	28	0	111	86	44	2	0	125	2

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	1	0	1	0	1	0	1	0	2	0	1	0	2	0
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	1	1		1	1	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		xxxx	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	xxxxx		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
Hev Veh Adj:	0.98	xxxx	xxxxx		0.98	xxxx	0.98		0.98	0.98	0.98		xxxx	0.98	0.98	
Grade Adj:	1.00	xxxx	xxxxx		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
Parking Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	xxxx	xxxxx		1.00	xxxx	1.00		1.00	1.00	1.00		xxxx	1.00	1.00	
RT Adj:	xxxx	xxxx	xxxxx		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		xxxx	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	1.00	1.00		0.93	1.00	0.83		0.93	0.98	0.83		1.00	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	1.00	1.00		0.93	1.00	0.83		0.93	0.93	0.83		1.00	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	0.00		1.00	0.00	1.00		1.00	1.00	1.00		0.00	1.00	1.00	

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.06	0.00	0.00		0.14	0.00	0.08		0.05	0.74	0.74		0.00	0.69	0.69	
ArrivalType:	4				4				4				4			
ProgFactor:	0.99	1.00	1.00		0.95	1.00	0.98		0.99	0.07	0.06		1.00	0.30	0.26	
Q1:	1.2	0.0	0.0		0.4	0.0	1.5		1.0	0.3	0.0		0.0	2.1	0.0	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.71	0.71	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.64	0.64	
EarlyArrAdj:	1.00	0.00	0.00		1.00	0.00	1.00		1.00	1.00	1.00		0.00	0.54	0.49	
Q2:	0.7	0.0	0.0		0.1	0.0	0.7		0.7	0.5	0.0		0.0	0.4	0.0	
HCM2KQueue:	1.9	0.0	0.0		0.5	0.0	2.2		1.7	0.9	0.0		0.0	2.5	0.0	
70th%Factor:	1.20	1.20	1.20		1.20	1.20	1.19		1.20	1.20	1.20		1.20	1.19	1.20	
HCM2k70thQ:	2.3	0.0	0.0		0.6	0.0	2.6		2.0	1.0	0.0		0.0	3.0	0.0	
85th%Factor:	1.58	1.60	1.60		1.59	1.60	1.58		1.58	1.59	1.60		1.60	1.58	1.60	
HCM2k85thQ:	3.0	0.0	0.0		0.8	0.0	3.4		2.7	1.4	0.1		0.0	3.9	0.1	
90th%Factor:	1.76	1.80	1.80		1.79	1.80	1.76		1.77	1.78	1.80		1.80	1.75	1.80	
HCM2k90thQ:	3.4	0.0	0.0		1.0	0.0	3.8		3.0	1.5	0.1		0.0	4.3	0.1	
95th%Factor:	2.04	2.10	2.10		2.08	2.10	2.03		2.05	2.07	2.10		2.10	2.02	2.10	
HCM2k95thQ:	3.9	0.0	0.0		1.1	0.0	4.4		3.4	1.8	0.1		0.0	5.0	0.1	
98th%Factor:	2.56	2.70	2.70		2.66	2.70	2.55		2.58	2.64	2.70		2.70	2.53	2.70	
HCM2k98thQ:	4.9	0.0	0.0		1.4	0.0	5.5		4.3	2.3	0.1		0.0	6.3	0.1	

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Average Delay (sec/veh): 7.4 Worst Case Level Of Service: B[12.2]

Street Name:	SR 99 West Frontage Rd						SR 99 SB Ramps (Eight Mile Rd)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 1 0 0 0			0 0 0 0 0			1 0 0 0 1		
Volume Module:PM Peak Hour												
Base Vol:	0	112	7	257	143	0	0	0	0	26	0	318
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	112	7	257	143	0	0	0	0	26	0	318
Added Vol:	0	0	0	52	0	0	0	0	0	0	0	12
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	112	7	309	143	0	0	0	0	26	0	330
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	122	8	336	155	0	0	0	0	28	0	359
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	122	8	336	155	0	0	0	0	28	0	359
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	129	xxxx	xxxxx	xxxx	xxxx	xxxxx	953	xxxx	126
Potent Cap.:	xxxx	xxxx	xxxxx	1456	xxxx	xxxxx	xxxx	xxxx	xxxxx	288	xxxx	925
Move Cap.:	xxxx	xxxx	xxxxx	1456	xxxx	xxxxx	xxxx	xxxx	xxxxx	225	xxxx	925
Volume/Cap:	xxxx	xxxx	xxxx	0.23	xxxx	xxxx	xxxx	xxxx	xxxx	0.13	xxxx	0.39
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	22.3	xxxx	xxxxx	xxxx	xxxx	xxxxx	10.6	xxxx	46.3
Control Del:	xxxxx	xxxx	xxxxx	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	23.3	xxxx	11.3
LOS by Move:	*	*	*	A	*	*	*	*	*	C	*	B
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			12.2		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:	#218			#183								
Dist(miles):	0.250			0.250								
Speed (mph):	1.00			1.00								
SignalIndex:	#22			#12								
Cycle Time:	100 secs			100 secs								
InitVolume:	258	15		116	40							
Saturation:	1769	890		1769	999							
ArrivalType:	4	4		4	4							
G/C:	0.18	0.27		0.11	0.06							
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:	0.242	0.366		0.147	0.082							
gq1:	11.06	1.07		5.59	3.68							
gq2:	2.67	0.02		0.54	0.21							
gq:	13.73	1.09		6.13	3.89							
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:	0.550			0.550								
beta:	0.645			0.645								
ta (secs):	900.000			900.000								
F:	0.003			0.003								
f:	0.474	1.000		1.000	1.000							
vcmax:	35	3		34	12							
vcg:	37	4		35	12							
vcmin:	1000	1000		1000	1000							
tp:	0.0	0.0		0.0	0.0							
p:	0.000			0.000								
*** Computation 3: Platoon Event Periods												
pdom/psubo:	0.000/0.000/Unconstrained											
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	0	xxxxx	xxxxx	129	xxxxx	xxxxx	1132	957	155	953	953	126
AdjCnflVol:	0	xxxxx	xxxxx	129	xxxxx	xxxxx	1132	957	155	953	953	126
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	0	xxxxx	xxxxx	129	xxxxx	xxxxx	1132	957	155	953	953	126
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	1623	xxxxx	xxxxx	1456	xxxxx	xxxxx	180	258	890	288	259	925
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
Potent Cap.:	1623	xxxxx	xxxxx	1456	xxxxx	xxxxx	180	258	890	288	259	925

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Average Delay (sec/veh): 16.1 Worst Case Level Of Service: E[42.2]

Street Name:	SR 99 East Frontage Rd								SR 99 NB Ramps (Eight Mile Rd)							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Volume Module:PM Peak Hour																				
Base Vol:	60	234	0	0	204	173	266	0	50	0	0	0								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	60	234	0	0	204	173	266	0	50	0	0	0								
Added Vol:	0	0	0	0	0	8	83	0	0	0	0	0								
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0								
Initial Fut:	60	234	0	0	204	181	349	0	50	0	0	0								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92								
PHF Volume:	65	254	0	0	222	197	379	0	54	0	0	0								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	65	254	0	0	222	197	379	0	54	0	0	0								
Critical Gap Module:																				
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx								
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	418	xxxx	xxxxx	xxxx	xxxx	xxxxx	607	xxxx	222	xxxx	xxxx	xxxxx								
Potent Cap.:	1141	xxxx	xxxxx	xxxx	xxxx	xxxxx	460	xxxx	818	xxxx	xxxx	xxxxx								
Move Cap.:	1141	xxxx	xxxxx	xxxx	xxxx	xxxxx	439	xxxx	818	xxxx	xxxx	xxxxx								
Volume/Cap:	0.06	xxxx	xxxx	xxxx	xxxx	xxxx	0.86	xxxx	0.07	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	4.5	xxxx	xxxxx	xxxx	xxxx	xxxxx	219	xxxx	5.3	xxxx	xxxx	xxxxx								
Control Del:	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	46.8	xxxx	9.7	xxxxx	xxxx	xxxxx								
LOS by Move:	A	*	*	*	*	*	E	*	A	*	*	*								
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx			xxxxxx			42.2			xxxxxx										
ApproachLOS:	*			*			E			*										

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HevVeh:	2%				2%				2%				2%			
Grade:	0%				0%				0%				0%			
Peds/Hour:	0				0				0				0			
Pedestrian Walk Speed: 4.00 feet/sec																
LaneWidth:	12 feet				12 feet				12 feet				12 feet			
Time Period: 0.25 hour																
Upstream Signals:																
Link Index:	#222				#188											
Dist(miles):	0.250				0.250											
Speed (mph):	1.00				1.00											
SignalIndex:	#23				#13											
Cycle Time:	100 secs				100 secs											
InitVolume:	327	48			41	22										
Saturation:	1165	810			1769	1348										
ArrivalType:	4	4			4	4										
G/C:	0.31	0.22			0.04	0.07										
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection																
P:	0.410	0.287			0.049	0.090										
gq1:	16.58	4.22			2.21	1.49										
gq2:	9.92	0.36			0.07	0.03										
gq:	26.49	4.59			2.28	1.52										
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons																
alpha:	0.550				0.550											
beta:	0.645				0.645											
ta (secs):	900.000				900.000											
F:	0.003				0.003											
f:	0.852	1.000			1.000	1.000										
vcmax:	79	12			13	6										
vcg:	83	14			13	7										
vcmin:	1000	1000			1000	1000										
tp:	0.0	0.0			0.0	0.0										
p:	0.000				0.000											
*** Computation 3: Platoon Event Periods																
pdom/psubo:	0.000/0.000/Unconstrained															
*** Computation 4: Conflicting Flows During Each Unblocked Period																
InitCnflVol:	418	xxxxx	xxxxx	0	xxxxx	xxxxx	607	607	222	732	803	254				
AdjCnflVol:	418	xxxxx	xxxxx	0	xxxxx	xxxxx	607	607	222	732	803	254				
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000				
ConflictVol:	418	xxxxx	xxxxx	0	xxxxx	xxxxx	607	607	222	732	803	254				
*** Computation 5: Capacity for Subject Movement During Unblocked Period																
InitPotCap:	1141	xxxxx	xxxxx	1623	xxxxx	xxxxx	460	411	818	337	317	784				
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000				
Potent Cap.:	1141	xxxxx	xxxxx	1623	xxxxx	xxxxx	460	411	818	337	317	784				

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

Cycle (sec):	100	Critical Vol./Cap.(X):	0.412
Loss Time (sec):	12	Average Delay (sec/veh):	29.2
Optimal Cycle:	36	Level Of Service:	C

Street Name:	Holman Road						Lt. Col. Mark Taylor Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	3 0	1	1 0	1 0	1	1 0	0 1	0
Volume Module:	PM Peak Hour											
Base Vol:	145	202	208	11	157	7	14	178	142	177	134	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	145	202	208	11	157	7	14	178	142	177	134	8
Added Vol:	0	11	0	0	7	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	145	213	208	11	164	7	14	178	142	177	134	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	158	232	226	12	178	8	15	193	154	192	146	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	158	232	226	12	178	8	15	193	154	192	146	9
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	158	232	226	12	178	8	15	193	154	192	146	9
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.89	0.83	0.93	0.98	0.83	0.93	0.97	0.97
Lanes:	1.00	2.00	1.00	1.00	3.00	1.00	1.00	1.00	1.00	1.00	0.94	0.06
Final Sat.:	1769	3538	1583	1769	5083	1583	1769	1862	1583	1769	1743	104
Capacity Analysis Module:												
Vol/Sat:	0.09	0.07	0.14	0.01	0.04	0.00	0.01	0.10	0.10	0.11	0.08	0.08
Crit Moves:			****	****				****		****		
Green/Cycle:	0.26	0.35	0.35	0.02	0.10	0.10	0.05	0.25	0.25	0.26	0.47	0.47
Volume/Cap:	0.34	0.19	0.41	0.41	0.34	0.05	0.18	0.41	0.39	0.41	0.18	0.18
Delay/Veh:	30.4	22.9	25.4	57.9	42.1	40.6	46.7	31.8	31.6	31.0	15.5	15.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.4	22.9	25.4	57.9	42.1	40.6	46.7	31.8	31.6	31.0	15.5	15.5
LOS by Move:	C	C	C	E	D	D	D	C	C	C	B	B
HCM2k95thQ:	173	108	222	46	109	12	23	220	176	232	103	103

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	2 0	1		1 0	3 0	1		1 0	1 0	1		1 0	0 1	0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	2	1		1	3	1		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.89	0.83		0.93	0.98	0.83		0.93	0.97	0.97	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.26	0.35	0.35	0.02	0.10	0.10	0.05	0.25	0.25	0.26	0.47	0.47
ArrivalType:		4			4			4			4	
ProgFactor:	0.91	0.84	0.87	1.00	0.97	0.96	0.99	0.92	0.92	0.92	0.73	0.73
Q1:	3.2	2.0	4.2	0.3	1.6	0.2	0.4	4.1	3.3	4.0	1.8	1.8
UpstreamVC:	0.16	0.16	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.99	0.99	0.99	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
EarlyArrAdj:	0.46	0.56	0.51	1.00	1.00	1.00	0.17	0.47	0.42	1.00	1.00	1.00
Q2:	0.2	0.1	0.4	0.6	0.5	0.0	0.0	0.3	0.3	0.7	0.2	0.2
HCM2KQueue:	3.5	2.1	4.5	0.9	2.1	0.2	0.4	4.5	3.5	4.7	2.0	2.0
70th%Factor:	1.19	1.19	1.19	1.20	1.19	1.20	1.20	1.19	1.19	1.19	1.20	1.20
HCM2k70thQ:	4.1	2.5	5.4	1.1	2.6	0.3	0.5	5.3	4.2	5.6	2.4	2.4
85th%Factor:	1.57	1.58	1.56	1.59	1.58	1.60	1.60	1.56	1.57	1.56	1.58	1.58
HCM2k85thQ:	5.5	3.4	7.0	1.4	3.4	0.4	0.7	7.0	5.5	7.4	3.2	3.2
90th%Factor:	1.74	1.76	1.72	1.78	1.76	1.80	1.79	1.72	1.74	1.72	1.76	1.76
HCM2k90thQ:	6.0	3.7	7.8	1.6	3.8	0.4	0.8	7.7	6.1	8.1	3.6	3.6
95th%Factor:	1.99	2.03	1.97	2.07	2.03	2.09	2.09	1.97	1.99	1.96	2.04	2.04
HCM2k95thQ:	6.9	4.3	8.9	1.8	4.4	0.5	0.9	8.8	7.0	9.3	4.1	4.1
98th%Factor:	2.47	2.55	2.41	2.63	2.55	2.68	2.67	2.41	2.46	2.39	2.56	2.56
HCM2k98thQ:	8.6	5.4	10.9	2.3	5.5	0.6	1.2	10.8	8.7	11.3	5.2	5.2

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.636
Loss Time (sec): 12 | Average Delay (sec/veh): 27.3
Optimal Cycle: 52 | Level Of Service: C

Street Name:	West Lane						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module: PM Peak Hour												
Base Vol:	82	674	250	266	580	30	41	54	56	296	55	198
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	82	674	250	266	580	30	41	54	56	296	55	198
Added Vol:	0	199	0	40	127	8	12	0	0	0	0	61
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	82	873	250	306	707	38	53	54	56	296	55	259
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	89	949	272	333	768	41	58	59	61	322	60	282
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	949	272	333	768	41	58	59	61	322	60	282
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	949	272	333	768	41	58	59	61	322	60	282
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	5083	1583	3432	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.27	0.17	0.10	0.22	0.03	0.02	0.01	0.04	0.09	0.01	0.18
Crit Moves:		****		****			****					****
Green/Cycle:	0.06	0.42	0.42	0.15	0.51	0.51	0.03	0.09	0.09	0.22	0.28	0.28
Volume/Cap:	0.42	0.64	0.41	0.64	0.42	0.05	0.64	0.13	0.43	0.43	0.04	0.64
Delay/Veh:	46.6	23.8	20.6	42.4	15.3	12.2	62.2	42.1	45.3	34.2	26.3	34.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.6	23.8	20.6	42.4	15.3	12.2	62.2	42.1	45.3	34.2	26.3	34.6
LOS by Move:	D	C	C	D	B	B	E	D	D	C	C	C
HCM2k95thQ:	96	507	243	285	278	22	99	35	116	221	23	379

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	0 1		2	0 2	0 1		2	0 3	0 1		2	0 3	0 1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	2	1		2	2	1		2	3	1		2	3	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.06	0.42	0.42		0.15	0.51	0.51		0.03	0.09	0.09		0.22	0.28	0.28	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.86	0.81		0.97	0.72	0.66		1.00	0.97	0.98		0.94	0.87	0.94	
Q1:	1.2	9.5	4.3		4.4	5.0	0.4		0.8	0.5	1.6		3.7	0.4	6.4	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.7	1.7	0.7		1.6	0.7	0.1		1.1	0.1	0.7		0.7	0.0	1.6	
HCM2KQueue:	1.9	11.1	5.0		5.9	5.7	0.4		2.0	0.7	2.3		4.5	0.4	8.0	
70th%Factor:	1.20	1.18	1.19		1.19	1.19	1.20		1.20	1.20	1.19		1.19	1.20	1.18	
HCM2k70thQ:	2.3	13.1	5.9		7.0	6.8	0.5		2.3	0.8	2.7		5.3	0.5	9.5	
85th%Factor:	1.58	1.51	1.55		1.55	1.55	1.60		1.58	1.59	1.58		1.56	1.60	1.53	
HCM2k85thQ:	3.0	16.8	7.7		9.1	8.9	0.7		3.1	1.1	3.6		7.0	0.7	12.3	
90th%Factor:	1.76	1.63	1.71		1.70	1.70	1.79		1.76	1.79	1.76		1.72	1.79	1.67	
HCM2k90thQ:	3.3	18.1	8.5		10.0	9.7	0.8		3.4	1.2	4.0		7.7	0.8	13.4	
95th%Factor:	2.04	1.82	1.96		1.93	1.94	2.09		2.04	2.08	2.03		1.97	2.09	1.88	
HCM2k95thQ:	3.9	20.3	9.7		11.4	11.1	0.9		4.0	1.4	4.6		8.8	0.9	15.2	
98th%Factor:	2.56	2.12	2.38		2.33	2.34	2.67		2.56	2.65	2.54		2.41	2.67	2.24	
HCM2k98thQ:	4.8	23.6	11.8		13.8	13.4	1.1		5.0	1.8	5.8		10.8	1.2	18.0	

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.517
Loss Time (sec):	12	Average Delay (sec/veh):	32.2
Optimal Cycle:	42	Level Of Service:	C

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:	PM Peak Hour											
Base Vol:	193	192	202	100	139	91	122	355	161	231	501	200
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	193	192	202	100	139	91	122	355	161	231	501	200
Added Vol:	4	8	0	0	5	2	3	28	3	0	42	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	197	200	202	100	144	93	125	383	164	231	543	200
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	214	217	220	109	157	101	136	416	178	251	590	217
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	214	217	220	109	157	101	136	416	178	251	590	217
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	214	217	220	109	157	101	136	416	178	251	590	217
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.12	0.04	0.14	0.06	0.03	0.06	0.08	0.08	0.11	0.14	0.12	0.14
Crit Moves:			****	****					****	****		
Green/Cycle:	0.25	0.27	0.27	0.12	0.13	0.13	0.18	0.22	0.22	0.27	0.32	0.32
Volume/Cap:	0.48	0.16	0.52	0.52	0.23	0.48	0.43	0.38	0.52	0.52	0.37	0.43
Delay/Veh:	32.5	28.0	32.2	43.6	38.9	41.8	37.7	33.5	35.8	31.6	26.6	27.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.5	28.0	32.2	43.6	38.9	41.8	37.7	33.5	35.8	31.6	26.6	27.7
LOS by Move:	C	C	C	D	D	D	D	C	D	C	C	C
HCM2k95thQ:	243	80	250	153	75	139	196	196	251	273	209	217

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Lanes:	1	0	3	0	1		1	0	3	0	1		1	0	3	0	1		1	0	3	0	1	
Lane Group:	L		T		R		L		T		R		L		T		R		L		T		R	
#LnsInGrps:	1		3		1		1		3		1		1		3		1		1		3		1	
HCM Ops Adjusted Lane Utilization Module:																								
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:			8						8						8						8			
% Hev Veh:			2						2						2						2			
Grade:			0%						0%						0%						0%			
Parking/Hr:			No						No						No						No			
Bus Stp/Hr:			0						0						0						0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0						0						0						0			
ExclusiveRT:			Include						Include						Include						Include			
% RT Prtct:			0						0						0						0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx		
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Hev Veh Adj:	0.98		0.98		0.98		0.98		0.98		0.98		0.98		0.98		0.98		0.98		0.98		0.98	
Grade Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Parking Adj:	xxxx		xxxx		1.00		xxxx		xxxx		1.00		xxxx		xxxx		1.00		xxxx		xxxx		1.00	
Bus Stp Adj:	xxxx		xxxx		1.00		xxxx		xxxx		1.00		xxxx		xxxx		1.00		xxxx		xxxx		1.00	
Area Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
RT Adj:	xxxx		xxxx		0.85		xxxx		xxxx		0.85		xxxx		xxxx		0.85		xxxx		xxxx		0.85	
LT Adj:	0.95		xxxx		xxxxx		0.95		xxxx		xxxxx		0.95		xxxx		xxxxx		0.95		xxxx		xxxxx	
PedBike Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
HCM Sat Adj:	0.93		0.98		0.83		0.93		0.98		0.83		0.93		0.98		0.83		0.93		0.98		0.83	
Usr Sat Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
MLF Sat Adj:	1.00		0.91		1.00		1.00		0.91		1.00		1.00		0.91		1.00		1.00		0.91		1.00	
Fnl Sat Adj:	0.93		0.89		0.83		0.93		0.89		0.83		0.93		0.89		0.83		0.93		0.89		0.83	
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.25	0.27	0.27	0.12	0.13	0.13	0.18	0.22	0.22	0.27	0.32	0.32
ArrivalType:		4			4			4			4	
ProgFactor:	0.93	0.89	0.93	0.98	0.96	0.97	0.95	0.93	0.95	0.92	0.88	0.89
Q1:	4.7	1.5	4.8	2.8	1.4	2.5	3.2	3.4	4.1	5.5	4.1	4.3
UpstreamVC:	0.68	0.68	0.68	0.34	0.34	0.34	0.00	0.00	0.00	0.87	0.87	0.87
UpstreamAdj:	0.67	0.67	0.67	0.95	0.95	0.95	0.00	0.00	0.00	0.37	0.37	0.37
EarlyArrAdj:	0.30	0.32	0.29	0.27	0.30	0.27	1.00	1.00	1.00	0.17	0.20	0.18
Q2:	0.3	0.1	0.3	0.3	0.1	0.2	0.7	0.6	1.0	0.2	0.1	0.1
HCM2KQueue:	5.0	1.6	5.1	3.1	1.5	2.8	4.0	4.0	5.2	5.6	4.2	4.4
70th%Factor:	1.19	1.20	1.19	1.19	1.20	1.19	1.19	1.19	1.19	1.19	1.19	1.19
HCM2k70thQ:	5.9	1.9	6.1	3.6	1.7	3.3	4.7	4.7	6.1	6.7	5.0	5.3
85th%Factor:	1.55	1.58	1.55	1.57	1.59	1.57	1.56	1.56	1.55	1.55	1.56	1.56
HCM2k85thQ:	7.7	2.5	7.9	4.8	2.3	4.4	6.2	6.2	8.0	8.7	6.6	6.9
90th%Factor:	1.71	1.77	1.71	1.74	1.77	1.75	1.73	1.73	1.71	1.70	1.72	1.72
HCM2k90thQ:	8.5	2.8	8.7	5.3	2.6	4.8	6.8	6.9	8.8	9.6	7.3	7.6
95th%Factor:	1.96	2.05	1.95	2.01	2.05	2.01	1.98	1.98	1.95	1.94	1.97	1.97
HCM2k95thQ:	9.7	3.2	10.0	6.1	3.0	5.6	7.8	7.9	10.1	10.9	8.3	8.7
98th%Factor:	2.38	2.59	2.37	2.49	2.59	2.51	2.44	2.44	2.37	2.35	2.42	2.41
HCM2k98thQ:	11.8	4.1	12.1	7.6	3.8	6.9	9.6	9.7	12.2	13.2	10.2	10.6

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 SR99 W Front & SB Ramps Morada

Average Delay (sec/veh): 10.7 Worst Case Level Of Service: C[24.5]

Street Name:	SR 99 West Frontage Rd						SR 99 SB Ramps (Morada Lane)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Volume Module:	PM Peak Hour											
Base Vol:	0	73	290	30	101	0	0	0	0	372	0	16
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	73	290	30	101	0	0	0	0	372	0	16
Added Vol:	0	0	28	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	73	318	30	101	0	0	0	0	372	0	16
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	79	346	33	110	0	0	0	0	404	0	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	79	346	33	110	0	0	0	0	404	0	17
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	425	xxxx	xxxxx	xxxx	xxxx	xxxxx	427	xxxx	252
Potent Cap.:	xxxx	xxxx	xxxxx	1134	xxxx	xxxxx	xxxx	xxxx	xxxxx	584	xxxx	786
Move Cap.:	xxxx	xxxx	xxxxx	1134	xxxx	xxxxx	xxxx	xxxx	xxxxx	571	xxxx	786
Volume/Cap:	xxxx	xxxx	xxxx	0.03	xxxx	xxxx	xxxx	xxxx	xxxx	0.71	xxxx	0.02
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxx	xxxx	xxxxx	143	xxxx	1.7
Control Del:	xxxxx	xxxx	xxxxx	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	25.1	xxxx	9.7
LOS by Move:	*	*	*	A	*	*	*	*	*	D	*	A
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			24.5		
ApproachLOS:	*			*			*			C		

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #20 SR99 W Front & SB Ramps Morada

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:       #218             #183
Dist(miles):      0.250            0.250
Speed (mph):       1.00             1.00
SignalIndex:      #22              #12
Cycle Time:         100 secs         100 secs
InitVolume:   258    15        116    40
Saturation:  1769   890       1769   999
ArrivalType:    4     4          4     4
G/C:         0.18  0.27       0.11  0.06
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:          0.242 0.366      0.147 0.082
gq1:        11.06  1.07       5.59  3.68
gq2:         2.67  0.02       0.54  0.21
gq:         13.73  1.09       6.13  3.89
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:            0.550            0.550
beta:             0.645            0.645
ta (secs):       900.000          900.000
F:                0.003            0.003
f:          1.000 1.000      0.913 1.000
vcmax:         74     3         31    12
vcg:           78     4         32    12
vcmin:       1000  1000       1000  1000
tp:           0.0   0.0        0.0   0.0
p:                0.000            0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx  425 xxxxx xxxxx  436   600   110  427   427   252
AdjCnflVol:    0 xxxxx xxxxx  425 xxxxx xxxxx  436   600   110  427   427   252
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx  425 xxxxx xxxxx  436   600   110  427   427   252
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1623 xxxxx xxxxx 1134 xxxxx xxxxx  531   415   944  584   520   786
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1623 xxxxx xxxxx 1134 xxxxx xxxxx  531   415   944  584   520   786
```


EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #21 SR99 E Front & NB Ramps Morada

Average Delay (sec/veh): 17.3 Worst Case Level Of Service: D[31.9]

```
Street Name:      SR 99 East Frontage Rd         SR 99 NB Ramps (Morada Lane)
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  0  0    0  0  0  1  0    1  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:PM Peak Hour
Base Vol:     190  223     0     0  262    13   120    0   547     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  190  223     0     0  262    13   120    0   547     0    0     0
Added Vol:      0    0     0     0    0     0     0    0    42     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  190  223     0     0  262    13   120    0   589     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:   207  242     0     0  285    14   130    0   640     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:  207  242     0     0  285    14   130    0   640     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4 xxxx   6.2 xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  299 xxxx xxxxx  xxxx xxxx xxxxx   947 xxxx   292  xxxx xxxx xxxxx
Potent Cap.: 1262 xxxx xxxxx  xxxx xxxx xxxxx   290 xxxx   747  xxxx xxxx xxxxx
Move Cap.:   1262 xxxx xxxxx  xxxx xxxx xxxxx   249 xxxx   747  xxxx xxxx xxxxx
Volume/Cap:  0.16 xxxx  xxxx  xxxx xxxx  xxxx  0.52 xxxx  0.86  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   14.6 xxxx xxxxx  xxxx xxxx xxxxx  69.7 xxxx 254.6  xxxx xxxx xxxxx
Control Del:  8.4 xxxx xxxxx xxxxx xxxx xxxxx  34.4 xxxx  31.4 xxxxx xxxx xxxxx
LOS by Move:    A    *     *     *    *     *     D    *     D     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:  0.6 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:  8.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     A    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx              31.9           xxxxxx
ApproachLOS:         *                *                 D                *
```

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #21 SR99 E Front & NB Ramps Morada

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:	#222			#188								
Dist(miles):	0.250			0.250								
Speed (mph):	1.00			1.00								
SignalIndex:	#23			#13								
Cycle Time:	100 secs			100 secs								
InitVolume:	327	48		41	22							
Saturation:	1165	810		1769	1348							
ArrivalType:	4	4		4	4							
G/C:	0.31	0.22		0.04	0.07							
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:	0.410	0.287		0.049	0.090							
gq1:	16.58	4.22		2.21	1.49							
gq2:	9.92	0.36		0.07	0.03							
gq:	26.49	4.59		2.28	1.52							
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:	0.550			0.550								
beta:	0.645			0.645								
ta (secs):	900.000			900.000								
F:	0.003			0.003								
f:	1.000	1.000		1.000	1.000							
vcmax:	93	12		13	6							
vcg:	97	14		13	7							
vcmin:	1000	1000		1000	1000							
tp:	0.0	0.0		0.0	0.0							
p:	0.000			0.000								
*** Computation 3: Platoon Event Periods												
pdom/psubo:	0.000/0.000/Unconstrained											
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	299	xxxxx	xxxxx	0	xxxxx	xxxxx	947	947	292	1267	954	242
AdjCnflVol:	299	xxxxx	xxxxx	0	xxxxx	xxxxx	947	947	292	1267	954	242
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	299	xxxxx	xxxxx	0	xxxxx	xxxxx	947	947	292	1267	954	242
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	1262	xxxxx	xxxxx	1623	xxxxx	xxxxx	290	261	747	146	259	796
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
Potent Cap.:	1262	xxxxx	xxxxx	1623	xxxxx	xxxxx	290	261	747	146	259	796

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 West Ln & West Ln Frontage Rd

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.598
Loss Time (sec): 9 | Average Delay (sec/veh): 19.0
Optimal Cycle: 41 | Level Of Service: B

Street Name:	West Lane						West Lane Frontage Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	1	0	1	0 1	1	0	0	1	0	0 1	0
Volume Module: PM Peak Hour												
Base Vol:	196	912	148	38	742	63	82	9	107	141	16	9
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	196	912	148	38	742	63	82	9	107	141	16	9
Added Vol:	0	199	0	0	127	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	196	1111	148	38	869	63	82	9	107	141	16	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	213	1208	161	41	945	68	89	10	116	153	17	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	213	1208	161	41	945	68	89	10	116	153	17	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	213	1208	161	41	945	68	89	10	116	153	17	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.91	0.91	0.93	0.92	0.92	0.71	0.71	0.83	0.64	0.93	0.93
Lanes:	1.00	1.76	0.24	1.00	1.86	0.14	0.90	0.10	1.00	1.00	0.64	0.36
Final Sat.:	1769	3066	408	1769	3266	237	1218	134	1583	1208	1127	634
Capacity Analysis Module:												
Vol/Sat:	0.12	0.39	0.39	0.02	0.29	0.29	0.07	0.07	0.07	0.13	0.02	0.02
Crit Moves:		****		****						****		
Green/Cycle:	0.21	0.66	0.66	0.04	0.49	0.49	0.21	0.21	0.21	0.21	0.21	0.21
Volume/Cap:	0.59	0.60	0.60	0.60	0.59	0.59	0.34	0.34	0.35	0.60	0.07	0.07
Delay/Veh:	38.4	10.0	10.0	60.8	18.6	18.6	34.2	34.2	34.1	39.4	31.6	31.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.4	10.0	10.0	60.8	18.6	18.6	34.2	34.2	34.1	39.4	31.6	31.6
LOS by Move:	D	B	B	E	B	B	C	C	C	D	C	C
HCM2k95thQ:	270	293	293	114	447	447	136	136	155	245	33	33

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        1  0  1  1  0    1  0  1  1  0    0  1  0  0  1    1  0  0  1  0
Lane Group:    L   RT     RT    L   RT     RT   LT   LT     R     L   RT     RT
#LnsInGrps:     1    2     2     1    2     2     1    1     1     1    1     1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:         8                8                8                8
% Hev Veh:           2                2                2                2
Grade:              0%               0%               0%               0%
Parking/Hr:         No               No               No               No
Bus Stp/Hr:          0                0                0                0
Area Type:    < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:         0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:          0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx     1 xxxx  xxxx     5    5  xxxx     2 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Hev Veh Adj: 0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
Grade Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Parking Adj: xxxx 1.00  1.00  xxxx 1.00  1.00  xxxx xxxx  1.00  xxxx 1.00  1.00
Bus Stp Adj: xxxx 1.00  1.00  xxxx 1.00  1.00  xxxx xxxx  1.00  xxxx 1.00  1.00
Area Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
RT Adj:      xxxx 0.98  0.98  xxxx 0.99  0.99  xxxx xxxx  0.85  xxxx 0.95  0.95
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.73 0.73 xxxxx  0.65 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.93 0.96  0.96  0.93 0.97  0.97  0.71 0.71  0.83  0.64 0.93  0.93
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 0.95  0.95  1.00 0.95  0.95  1.00 1.00  1.00  1.00 1.00  1.00
Fnl Sat Adj: 0.93 0.91  0.91  0.93 0.92  0.92  0.71 0.71  0.83  0.64 0.93  0.93
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
```


EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North	South	East	West
Cycle Length, C:	xxxxxx	xxxxxx	100	100
Actual Green Time Per Lane Group, G:	xxxxxx	xxxxxx	20.20	20.20
Effective Green Time Per Lane Group, g:	xxxxxx	xxxxxx	21.20	21.20
Opposing Effective Green Time, go:	xxxxxx	xxxxxx	21.20	21.20
Number Of Opposing Lanes, No:	xxxxxx	xxxxxx	1	1
Number Of Lanes In Lane Group, N:	xxxxxx	xxxxxx	1	1
Adjusted Left-Turn Flow Rate, Vlt:	xxxxxx	xxxxxx	89	153
Proportion of Left Turns in Lane Group, Plt:	xxxxxx	xxxxxx	0.90	1.00
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	xxxxxx	xxxxxx	2.48	4.26
Adjusted Opposing Flow Rate, Vo:	xxxxxx	xxxxxx	27	99
Opposing Flow Per Lane Per Cycle, Volc:	xxxxxx	xxxxxx	0.75	2.75
Opposing Platoon Ratio, Rpo:	xxxxxx	xxxxxx	1.33	1.33
Lost Time Per Phase, tl:	xxxxxx	xxxxxx	3.00	3.00
Eff grn until arrival of left-turn car, gf:	xxxxxx	xxxxxx	0.73	0.00
Opposing Queue Ratio, qro:	xxxxxx	xxxxxx	0.72	0.72
Eff grn blocked by opposing queue, gq:	xxxxxx	xxxxxx	0.00	1.26
Eff grn while left turns filter thru, gu:	xxxxxx	xxxxxx	20.47	19.94
Max opposing cars arriving during gq-gf, n:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	0.86	0.81
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	0.90	1.00
Through-car Equivalents, el1:	xxxxxx	xxxxxx	1.44	1.45
Single Lane Through-car Equivalents, el2:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	xxxxxx	xxxxxx	0.18	0.19
Single Lane Left Turn Adjustment Factor, fm:	xxxxxx	xxxxxx	0.73	0.65
Left Turn Adjustment Factor, flt:	xxxxxx	xxxxxx	0.73	0.65

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.21	0.66	0.66	0.04	0.49	0.49	0.21	0.21	0.21	0.21	0.21	0.21
ArrivalType:		4			4			4			4	
ProgFactor:	0.96	0.46	0.46	0.99	0.78	0.78	0.93	0.93	0.94	0.96	0.92	0.92
Q1:	5.1	5.1	5.1	1.1	8.3	8.3	2.2	2.2	2.6	3.7	0.6	0.6
UpstreamVC:	0.59	0.59	0.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.78	0.78	0.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.31	0.64	0.64	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.4	0.9	0.9	1.1	1.4	1.4	0.5	0.5	0.5	1.3	0.1	0.1
HCM2KQueue:	5.6	6.1	6.1	2.2	9.7	9.7	2.7	2.7	3.1	5.0	0.6	0.6
70th%Factor:	1.19	1.19	1.19	1.19	1.18	1.18	1.19	1.19	1.19	1.19	1.20	1.20
HCM2k70thQ:	6.6	7.2	7.2	2.7	11.4	11.4	3.2	3.2	3.7	6.0	0.8	0.8
85th%Factor:	1.55	1.55	1.55	1.58	1.52	1.52	1.57	1.57	1.57	1.55	1.59	1.59
HCM2k85thQ:	8.6	9.4	9.4	3.5	14.6	14.6	4.2	4.2	4.9	7.8	1.0	1.0
90th%Factor:	1.70	1.70	1.70	1.76	1.65	1.65	1.75	1.75	1.74	1.71	1.79	1.79
HCM2k90thQ:	9.5	10.3	10.3	3.9	15.9	15.9	4.7	4.7	5.4	8.6	1.1	1.1
95th%Factor:	1.94	1.93	1.93	2.03	1.85	1.85	2.02	2.02	2.01	1.95	2.08	2.08
HCM2k95thQ:	10.8	11.7	11.7	4.6	17.9	17.9	5.4	5.4	6.2	9.8	1.3	1.3
98th%Factor:	2.35	2.33	2.33	2.54	2.18	2.18	2.51	2.51	2.49	2.38	2.65	2.65
HCM2k98thQ:	13.1	14.1	14.1	5.7	21.0	21.0	6.8	6.8	7.7	11.9	1.7	1.7

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 West Lane & Knickerbocker Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.589
Loss Time (sec):	12	Average Delay (sec/veh):	23.6
Optimal Cycle:	47	Level Of Service:	C

Street Name:	West Lane						Knickerbocker Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:PM Peak Hour												
Base Vol:	72	1115	86	112	824	58	99	95	44	135	74	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	72	1115	86	112	824	58	99	95	44	135	74	58
Added Vol:	0	199	0	0	127	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	72	1314	86	112	951	58	99	95	44	135	74	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	78	1428	93	122	1034	63	108	103	48	147	80	63
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	78	1428	93	122	1034	63	108	103	48	147	80	63
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	78	1428	93	122	1034	63	108	103	48	147	80	63
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.88	0.88	0.93	0.93	0.93	0.93	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	2.83	0.17	1.00	0.68	0.32	1.00	0.56	0.44
Final Sat.:	1769	5083	1583	1769	4748	290	1769	1212	561	1769	975	764
Capacity Analysis Module:												
Vol/Sat:	0.04	0.28	0.06	0.07	0.22	0.22	0.06	0.09	0.09	0.08	0.08	0.08
Crit Moves:		****		****				****		****		
Green/Cycle:	0.10	0.48	0.48	0.12	0.49	0.49	0.12	0.14	0.14	0.14	0.16	0.16
Volume/Cap:	0.44	0.59	0.12	0.59	0.44	0.44	0.50	0.59	0.59	0.59	0.50	0.50
Delay/Veh:	44.1	19.4	14.6	46.3	16.5	16.5	43.0	43.5	43.5	43.9	39.4	39.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.1	19.4	14.6	46.3	16.5	16.5	43.0	43.5	43.5	43.9	39.4	39.4
LOS by Move:	D	B	B	D	B	B	D	D	D	D	D	D
HCM2k95thQ:	110	429	57	172	280	280	182	250	250	245	219	219

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	3	0	1	1	0	2	1	0	1	0	0	1	0	1
Lane Group:	L	T	R		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	3	1		1	3	3		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.99	0.99		xxxx	0.95	0.95		xxxx	0.93	0.93	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.97	0.97		0.93	0.93	0.93		0.93	0.92	0.92	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.88	0.88		0.93	0.93	0.93		0.93	0.92	0.92	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.10	0.48	0.48		0.12	0.49	0.49		0.12	0.14	0.14		0.14	0.16	0.16	
ArrivalType:	4				4				4				4			
ProgFactor:	0.98	0.80	0.71		0.98	0.74	0.74		0.98	0.97	0.97		0.97	0.96	0.96	
Q1:	2.0	8.5	1.0		3.1	5.4	5.4		2.7	3.8	3.8		3.7	3.5	3.5	
UpstreamVC:	0.57	0.57	0.57		0.59	0.59	0.59		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.80	0.80	0.80		0.78	0.78	0.78		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	0.21	0.55	0.50		0.22	0.54	0.54		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.2	0.8	0.1		0.3	0.4	0.4		0.9	1.3	1.3		1.3	1.0	1.0	
HCM2KQueue:	2.2	9.2	1.1		3.5	5.8	5.8		3.7	5.1	5.1		5.0	4.5	4.5	
70th%Factor:	1.19	1.18	1.20		1.19	1.19	1.19		1.19	1.19	1.19		1.19	1.19	1.19	
HCM2k70thQ:	2.6	10.9	1.3		4.1	6.9	6.9		4.4	6.1	6.1		6.0	5.3	5.3	
85th%Factor:	1.58	1.52	1.59		1.57	1.55	1.55		1.57	1.55	1.55		1.55	1.56	1.56	
HCM2k85thQ:	3.4	14.0	1.7		5.4	9.0	9.0		5.7	8.0	8.0		7.8	6.9	6.9	
90th%Factor:	1.76	1.65	1.78		1.74	1.70	1.70		1.73	1.71	1.71		1.71	1.72	1.72	
HCM2k90thQ:	3.8	15.2	1.9		6.0	9.9	9.9		6.4	8.8	8.8		8.6	7.7	7.7	
95th%Factor:	2.03	1.86	2.06		2.00	1.93	1.93		1.99	1.95	1.95		1.95	1.97	1.97	
HCM2k95thQ:	4.4	17.1	2.3		6.9	11.2	11.2		7.3	10.0	10.0		9.8	8.8	8.8	
98th%Factor:	2.55	2.19	2.62		2.47	2.34	2.34		2.45	2.37	2.37		2.38	2.41	2.41	
HCM2k98thQ:	5.5	20.2	2.9		8.5	13.6	13.6		9.0	12.2	12.2		11.9	10.7	10.7	

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.728
Loss Time (sec):	12	Average Delay (sec/veh):	35.6
Optimal Cycle:	63	Level Of Service:	D

Street Name:	West Lane						Hammer Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	4	0	1	2	0	4	0	1
Volume Module:	PM Peak Hour											
Base Vol:	485	876	189	247	637	242	450	1224	181	368	1112	122
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	485	876	189	247	637	242	450	1224	181	368	1112	122
Added Vol:	0	199	0	0	127	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	485	1075	189	247	764	242	450	1224	181	368	1112	122
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	527	1168	205	268	830	263	489	1330	197	400	1209	133
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	527	1168	205	268	830	263	489	1330	197	400	1209	133
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	527	1168	205	268	830	263	489	1330	197	400	1209	133
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.15	0.17	0.13	0.08	0.12	0.17	0.14	0.20	0.12	0.12	0.18	0.08
Crit Moves:	****					****	****				****	
Green/Cycle:	0.21	0.30	0.30	0.14	0.23	0.23	0.20	0.28	0.28	0.16	0.24	0.24
Volume/Cap:	0.73	0.57	0.43	0.57	0.54	0.73	0.73	0.71	0.45	0.71	0.73	0.34
Delay/Veh:	40.5	29.8	28.6	42.1	34.3	43.0	41.7	33.9	30.6	43.7	36.4	31.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.5	29.8	28.6	42.1	34.3	43.0	41.7	33.9	30.6	43.7	36.4	31.6
LOS by Move:	D	C	C	D	C	D	D	C	C	D	D	C
HCM2k95thQ:	423	385	238	192	277	352	404	497	241	284	419	148

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	2	0	4	0	1		2	0	4	0	1		2	0	4	0	1		2	0	4	0	1	
Lane Group:	L		T		R		L		T		R		L		T		R		L		T		R	
#LnsInGrps:	2		4		1		2		4		1		2		4		1		2		4		1	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:	8						8						8						8					
% Hev Veh:	2						2						2						2					
Grade:	0%						0%						0%						0%					
Parking/Hr:	No						No						No						No					
Bus Stp/Hr:	0						0						0						0					
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:	0						0						0						0					
ExclusiveRT:	Include						Include						Include						Include					
% RT Prtct:	0						0						0						0					
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx		
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
Hev Veh Adj:	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98
Grade Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
Parking Adj:	xxxx	xxxx		1.00		xxxx	xxxx	1.00		xxxx		xxxx	xxxx	1.00		xxxx		xxxx	xxxx	1.00		xxxx		xxxx
Bus Stp Adj:	xxxx	xxxx		1.00		xxxx	xxxx	1.00		xxxx		xxxx	xxxx	1.00		xxxx		xxxx	xxxx	1.00		xxxx		xxxx
Area Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
RT Adj:	xxxx	xxxx		0.85		xxxx	xxxx	0.85		xxxx		xxxx	xxxx	0.85		xxxx		xxxx	xxxx	0.85		xxxx		xxxx
LT Adj:	0.95	xxxx		xxxxx		0.95	xxxx	xxxxx		0.95		xxxx	xxxxx			0.95		xxxx	xxxxx			0.95		xxxx
PedBike Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
HCM Sat Adj:	0.93	0.98		0.83		0.93	0.98	0.83		0.93		0.98	0.93	0.98		0.83		0.93	0.98	0.83		0.93		0.83
Usr Sat Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
MLF Sat Adj:	0.97	0.91		1.00		0.97	0.91	1.00		0.97		0.91	1.00	0.97		0.91		1.00	0.97	0.91		1.00		1.00
Fnl Sat Adj:	0.90	0.89		0.83		0.90	0.89	0.83		0.90		0.89	0.83	0.90		0.89		0.83	0.90	0.89		0.83		0.83
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.21	0.30	0.30	0.14	0.23	0.23	0.20	0.28	0.28	0.16	0.24	0.24
ArrivalType:		4			4			4			4	
ProgFactor:	0.97	0.92	0.90	0.97	0.95	0.97	0.97	0.95	0.92	0.98	0.96	0.92
Q1:	6.8	6.9	4.1	3.5	5.3	6.5	6.4	8.7	4.1	5.3	8.1	2.8
UpstreamVC:	0.00	0.00	0.00	0.44	0.44	0.44	0.00	0.00	0.00	0.65	0.65	0.65
UpstreamAdj:	0.00	0.00	0.00	0.90	0.90	0.90	0.00	0.00	0.00	0.71	0.71	0.71
EarlyArrAdj:	1.00	1.00	1.00	0.28	0.40	0.36	1.00	1.00	1.00	0.25	0.33	0.30
Q2:	2.3	1.3	0.7	0.4	0.4	0.9	2.2	2.2	0.8	0.6	0.8	0.2
HCM2KQueue:	9.1	8.2	4.9	3.9	5.7	7.4	8.6	10.9	4.9	5.9	9.0	2.9
70th%Factor:	1.18	1.18	1.19	1.19	1.19	1.18	1.18	1.18	1.19	1.19	1.18	1.19
HCM2k70thQ:	10.7	9.7	5.8	4.6	6.8	8.8	10.2	12.8	5.9	7.0	10.6	3.5
85th%Factor:	1.52	1.53	1.56	1.56	1.55	1.53	1.52	1.51	1.55	1.55	1.52	1.57
HCM2k85thQ:	13.8	12.5	7.6	6.1	8.9	11.4	13.2	16.4	7.7	9.1	13.7	4.6
90th%Factor:	1.65	1.67	1.71	1.73	1.70	1.68	1.66	1.63	1.71	1.70	1.66	1.75
HCM2k90thQ:	15.0	13.6	8.3	6.7	9.7	12.4	14.3	17.7	8.4	10.0	14.9	5.1
95th%Factor:	1.86	1.88	1.96	1.98	1.94	1.90	1.87	1.83	1.96	1.93	1.86	2.01
HCM2k95thQ:	16.9	15.4	9.5	7.7	11.1	14.1	16.2	19.9	9.6	11.4	16.7	5.9
98th%Factor:	2.20	2.23	2.39	2.44	2.34	2.26	2.21	2.13	2.38	2.34	2.20	2.50
HCM2k98thQ:	20.0	18.3	11.6	9.5	13.4	16.8	19.1	23.2	11.8	13.7	19.8	7.4

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.904
Loss Time (sec): 12 Average Delay (sec/veh): 39.8
Optimal Cycle: 111 Level Of Service: D

Street Name:	Hammer Lane						Holman Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 2	1 0	2	0 3	0 1	2	0 3	1 0	2	0 3	1 0
Volume Module:	PM Peak Hour											
Base Vol:	558	764	512	198	508	119	338	1081	324	473	963	75
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	558	764	512	198	508	119	338	1081	324	473	963	75
Added Vol:	0	12	0	0	8	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	558	776	512	198	516	119	338	1081	324	473	963	75
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	607	843	557	215	561	129	367	1175	352	514	1047	82
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	607	843	557	215	561	129	367	1175	352	514	1047	82
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	607	843	557	215	561	129	367	1175	352	514	1047	82
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.84	0.84	0.90	0.89	0.83	0.90	0.86	0.86	0.90	0.88	0.88
Lanes:	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.08	0.92	2.00	3.71	0.29
Final Sat.:	3432	3186	1593	3432	5083	1583	3432	5032	1508	3432	6219	484
Capacity Analysis Module:												
Vol/Sat:	0.18	0.26	0.35	0.06	0.11	0.08	0.11	0.23	0.23	0.15	0.17	0.17
Crit Moves:			****	****				****		****		
Green/Cycle:	0.28	0.39	0.39	0.07	0.18	0.18	0.16	0.26	0.26	0.17	0.26	0.26
Volume/Cap:	0.63	0.68	0.90	0.90	0.63	0.47	0.65	0.90	0.90	0.90	0.65	0.65
Delay/Veh:	32.8	26.6	36.8	80.0	39.7	38.3	41.7	43.1	43.1	58.8	33.9	33.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.8	26.6	36.8	80.0	39.7	38.3	41.7	43.1	43.1	58.8	33.9	33.9
LOS by Move:	C	C	D	E	D	D	D	D	D	E	C	C
HCM2k95thQ:	407	529	885	205	277	169	253	587	587	519	418	418

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	1	0	2	0 3	0	1	2	0 3	1	0	2	0 3	1	0
Lane Group:	L	RT		RT	L	T		R	L	RT		RT	L	RT		RT
#LnsInGrps:	2	3		3	2	3		1	2	4		4	2	4		4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.94	0.94		xxxx	xxxx	0.85		xxxx	0.97	0.97		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.92	0.92		0.93	0.98	0.83		0.93	0.95	0.95		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	0.91		0.97	0.91	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.84	0.84		0.90	0.89	0.83		0.90	0.86	0.86		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Dens Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.28	0.39	0.39		0.07	0.18	0.18		0.16	0.26	0.26		0.17	0.26	0.26	
ArrivalType:		4				4				4				4		
ProgFactor:	0.94	0.90	0.96		1.00	0.97	0.96		0.97	0.98	0.98		0.99	0.95	0.95	
Q1:	7.1	9.6	15.4		3.1	5.1	3.1		4.8	11.1	11.1		7.2	7.3	7.3	
UpstreamVC:	0.00	0.00	0.00		0.23	0.23	0.23		0.71	0.71	0.71		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.98	0.98	0.98		0.64	0.64	0.64		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		0.21	0.37	0.33		0.22	0.30	0.30		1.00	1.00	1.00	
Q2:	1.6	2.0	5.6		1.1	0.6	0.3		0.4	2.0	2.0		4.3	1.7	1.7	
HCM2KQueue:	8.7	11.7	21.0		4.2	5.7	3.4		5.2	13.1	13.1		11.4	9.0	9.0	
70th%Factor:	1.18	1.17	1.16		1.19	1.19	1.19		1.19	1.17	1.17		1.18	1.18	1.18	
HCM2k70thQ:	10.3	13.7	24.3		4.9	6.8	4.0		6.2	15.4	15.4		13.4	10.6	10.6	
85th%Factor:	1.52	1.50	1.45		1.56	1.55	1.57		1.55	1.49	1.49		1.50	1.52	1.52	
HCM2k85thQ:	13.3	17.5	30.4		6.5	8.9	5.3		8.1	19.6	19.6		17.2	13.7	13.7	
90th%Factor:	1.66	1.62	1.54		1.72	1.70	1.74		1.71	1.61	1.61		1.63	1.66	1.66	
HCM2k90thQ:	14.4	18.9	32.3		7.2	9.7	5.9		8.9	21.1	21.1		18.6	14.9	14.9	
95th%Factor:	1.87	1.81	1.69		1.98	1.94	2.00		1.95	1.79	1.79		1.82	1.86	1.86	
HCM2k95thQ:	16.3	21.2	35.4		8.2	11.1	6.7		10.1	23.5	23.5		20.8	16.7	16.7	
98th%Factor:	2.21	2.11	1.90		2.43	2.34	2.47		2.37	2.06	2.06		2.12	2.20	2.20	
HCM2k98thQ:	19.2	24.6	39.9		10.1	13.4	8.3		12.3	27.1	27.1		24.2	19.8	19.8	

EPAP + Reduce Dens Alt PM Pk Hr

Future Queue Length Report (feet)

Node	Intersection	Northbound L	Northbound -- T	Northbound -- R	Southbound L	Southbound -- T	Southbound -- R	Eastbound L	Eastbound -- T	Eastbound -- R	Westbound L	Westbound -- T	Westbound -- R
#3	[HCM2k95thQ]:	502	23	67	34	593	593	263	922	598	156	896	896
#4	[HCM2k95thQ]:	389	101	114	27	435	435	145	728	728	241	583	2
#5	[HCM2k95thQ]:	100	610	822	263	477	136	234	1067	23	849	642	33
#6	[HCM2k95thQ]:	27	507	507	283	297	297	227	227	227	597	597	597
#7	[HCM2k95thQ]:	0	51	51	45	0	45	22	18	0	43	15	15
#8	[HCM2k95thQ]:	1041	183	140	62	351	550	658	565	1010	283	916	13
#9	[2Way95thQ]:	xxxx	xxxx	xxxx	13.3	xxxx	2.3	0.8	xxxx	xxxx	xxxx	xxxx	xxxx
#10	[HCM2k95thQ]:	92	0	125	42	0	37	11	123	123	141	31	31
#11	[HCM2k95thQ]:	97	0	0	28	0	111	86	44	2	0	125	2
#14	[2Way95thQ]:	xxxx	xxxx	xxxx	22.3	22.3	xxxx	xxxx	xxxx	xxxx	10.6	xxxx	46.3
#15	[2Way95thQ]:	4.5	4.5	xxxx	xxxx	xxxx	xxxx	219	xxxx	5.3	xxxx	xxxx	xxxx
#17	[HCM2k95thQ]:	173	108	222	46	109	12	23	220	176	232	103	103
#18	[HCM2k95thQ]:	96	507	243	285	278	22	99	35	116	221	23	379
#19	[HCM2k95thQ]:	243	80	250	153	75	139	196	196	251	273	209	217
#20	[2Way95thQ]:	xxxx	xxxx	xxxx	2.2	2.2	xxxx	xxxx	xxxx	xxxx	143	xxxx	1.7
#21	[2Way95thQ]:	14.6	14.6	xxxx	xxxx	xxxx	xxxx	69.7	xxxx	255	xxxx	xxxx	xxxx
#24	[HCM2k95thQ]:	270	293	293	114	447	447	136	136	155	245	33	33
#25	[HCM2k95thQ]:	110	429	57	172	280	280	182	250	250	245	219	219
#26	[HCM2k95thQ]:	423	385	238	192	277	352	404	497	241	284	419	148
#27	[HCM2k95thQ]:	407	529	885	205	277	169	253	587	587	519	418	418

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EPAP + Reduce Proj Alt AM Pk Hr

Scenario Report

Scenario:	EPAP + Red Proj Alt AM
Command:	EPAP + Red Proj Alt AM
Volume:	EPAP AM
Geometry:	EPAP Proj
Impact Fee:	Default Impact Fee
Trip Generation:	AM Pk Hr
Trip Distribution:	EPAP AM
Paths:	EPAP Proj
Routes:	Default Route
Configuration:	Default Configuration

EPAP + Reduce Proj Alt AM Pk Hr

Trip Generation Report

Forecast for AM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	725.00	ElemSchStudent	0.25	0.20	181	145	326	32.9
1	Village West	0.00	Tra Vigne SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	0.60	0.36	0	0	0	0.0
1	Village West	613.00	Red Proj SFDU	0.18	0.53	110	325	435	43.9
1	Village West	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
1	Village West	0.00	GP Alt MFDU	0.10	0.41	0	0	0	0.0
1	Village West	0.00	Tra V Internal	-6.00	-6.00	0	0	0	0.0
1	Village West	0.00	GP Alt Interna	-7.00	-7.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-11.00	-7.00	0	0	0	0.0
	Zone 1 Subtotal					291	470	761	76.7
2	Village East	0.00	Tra Vigne SFDU	0.18	0.53	0	0	0	0.0
2	Village East	0.00	GP Alt SFDU	0.18	0.53	0	0	0	0.0
2	Village East	325.00	Red Proj SFDU	0.18	0.53	59	172	231	23.3
2	Village East	0.00	Red Dens SFDU	0.18	0.53	0	0	0	0.0
	Zone 2 Subtotal					59	172	231	23.3
TOTAL						350	642	992	100.0

EPAP + Reduce Proj Alt AM Pk Hr

Trip Distribution Report

Percent Of Trips EPAP AM

To Gates

Zone	1	2	5	6	8	9	10	11	14	15	16
1	2.0	1.0	2.0	4.0	7.0	2.0	3.0	1.0	1.0	3.0	8.0
2	2.0	1.0	2.0	4.0	7.0	2.0	3.0	1.0	1.0	3.0	8.0

To Gates

Zone	17	18	19	20	22	23	24	25	26
1	1.0	3.0	29.0	5.0	2.0	18.0	4.0	2.0	2.0
2	1.0	3.0	29.0	5.0	2.0	18.0	4.0	2.0	2.0

EPAP + Reduce Proj Alt AM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	E	57.2	1.021	E	59.5	1.035	+ 2.333 D/V
# 4 Eight Mile Rd & Davis Rd	C	34.4	0.828	D	35.5	0.850	+ 1.096 D/V
# 5 Eight Mile & Lower Sacto Rd	D	40.9	0.920	D	49.6	0.994	+ 8.670 D/V
# 6 West Lane & Armstrong Road	C	32.3	0.636	C	32.3	0.645	-0.042 D/V
# 7 West Lane & Ham Lane	A	8.7	0.273	A	8.6	0.278	-0.138 D/V
# 8 Eight Mile Rd & West Ln	D	43.2	0.915	E	57.2	1.029	+13.966 D/V
# 9 Eight Mile Road & Ham Lane	C	21.5	0.112	D	28.9	0.158	+ 7.436 D/V
# 10 Eight Mile & Leach Rd/St J	A	1.3	0.317	A	8.3	0.441	+ 7.065 D/V
# 11 Eight Mile & MickeGrove/Holman	A	1.3	0.277	A	7.2	0.352	+ 5.861 D/V
# 14 SR99 W Front & SB Ramps 8 Mile	B	11.3	0.332	B	11.8	0.340	+ 0.418 D/V
# 15 SR99 E Front & NB Ramps 8 Mile	C	20.5	0.377	D	27.0	0.540	+ 6.557 D/V
# 17 Holman & Lt Col Mark Taylor	C	30.0	0.338	C	30.1	0.340	+ 0.071 D/V
# 18 Morada Lane & West Lane	C	28.2	0.506	C	29.1	0.567	+ 0.880 D/V
# 19 Morada Lane & Holman Road	D	35.0	0.583	D	35.0	0.593	-0.015 D/V
# 20 SR99 W Front & SB Ramps Morada	D	29.2	0.701	D	31.5	0.724	+ 2.305 D/V
# 21 SR99 E Front & NB Ramps Morada	F	69.2	1.054	F	66.0	1.054	-3.191 D/V
# 24 West Ln & West Ln Frontage Rd	C	21.0	0.593	C	20.5	0.660	-0.459 D/V
# 25 West Lane & Knickerbocker Dr	C	25.3	0.473	C	23.8	0.518	-1.462 D/V
# 26 West Lane & Hammer Lane	C	32.8	0.554	C	32.7	0.588	-0.076 D/V
# 27 Hammer Lane & Holman Road	D	37.9	0.876	D	38.1	0.879	+ 0.170 D/V

EPAP + Reduce Proj Alt AM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 9 Eight Mile Road & Ham Lane	??? / ???	No / No
# 14 SR99 W Front & SB Ramps 8 Mile	??? / ???	No / No
# 15 SR99 E Front & NB Ramps 8 Mile	??? / ???	No / No
# 20 SR99 W Front & SB Ramps Morada	??? / ???	No / No
# 21 SR99 E Front & NB Ramps Morada	??? / ???	Yes / Yes

EPAP + Reduce Proj Alt AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #9 Eight Mile Road & Ham Lane

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0	1	0	0	0	1	0	2	0	0	0	1	1	0
Initial Vol:	0	0	0		20	0	8		7	919	0		0	768	25		
ApproachDel:	xxxxxx				28.9				xxxxxx				xxxxxx				

Approach[southbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=28]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1747]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + Reduce Proj Alt AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #9 Eight Mile Road & Ham Lane

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	1	0	0	0	1	1	0	2	0	0	0	0	1	1	0
Initial Vol:	0		0		0	20		0		8	7		919		0	0		768		25

Major Street Volume: 1719
Minor Approach Volume: 28
Minor Approach Volume Threshold: 141 [less than minimum of 150]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Reduce Proj Alt AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	103		1		423	106		0		0		0		0	14		0		294
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					11.8				

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.0]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=308]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=941]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Reduce Proj Alt AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	103			1	423	106			0	0		0		0	14		0	294	

Major Street Volume: 633
Minor Approach Volume: 308
Minor Approach Volume Threshold: 436

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Reduce Proj Alt AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	152	204			0	0	314		227		133		0		50	0		0		0
ApproachDel:	xxxxxx					xxxxxx					27.0					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.4]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=183]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1080]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Reduce Proj Alt AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	152	204			0		0	314	227		133		0		50		0		0	0

Major Street Volume: 897
Minor Approach Volume: 183
Minor Approach Volume Threshold: 421

SIGNAL WARRANT DISCLAIMER
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EPAP + Reduce Proj Alt AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #20 SR99 W Front & SB Ramps Morada

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	62	830		31	50		0		0	0		0		282		0		19	
ApproachDel:	xxxxxx				xxxxxx				xxxxxx					31.5						

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=2.6]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=301]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1274]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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EPAP + Reduce Proj Alt AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #20 SR99 W Front & SB Ramps Morada

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0		62		830	31		50		0	0		0		0	282		0		19

Major Street Volume: 973
Minor Approach Volume: 301
Minor Approach Volume Threshold: 301

SIGNAL WARRANT DISCLAIMER
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EPAP + Reduce Proj Alt AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #21 SR99 E Front & NB Ramps Morada

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0
Initial Vol:	230		451		0	0		511		2	95		0		240	0		0		0
ApproachDel:	xxxxxx					xxxxxx					66.0					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=6.1]
SUCCEED - Vehicle-hours >= 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=335]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1529]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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EPAP + Reduce Proj Alt AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #21 SR99 E Front & NB Ramps Morada

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	1 0	0 0	0	0 0	1 0	1	0 0	0 1	0	0 0	0 0
Initial Vol:	230	451	0	0	511	2	95	0	240	0	0	0

Major Street Volume: 1194
Minor Approach Volume: 335
Minor Approach Volume Threshold: 237

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.035
Loss Time (sec):	12	Average Delay (sec/veh):	59.5
Optimal Cycle:	180	Level Of Service:	E

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	0 1	0	1 0	2 0	1	1 0	1 1	0
Volume Module:	AM Peak Hour											
Base Vol:	836	46	103	5	26	229	169	983	326	80	1148	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	836	46	103	5	26	229	169	983	326	80	1148	14
Added Vol:	0	0	4	0	0	0	0	21	0	6	39	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	836	46	107	5	26	229	169	1004	326	86	1187	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	909	50	116	5	28	249	184	1091	354	93	1290	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	909	50	116	5	28	249	184	1091	354	93	1290	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	909	50	116	5	28	249	184	1091	354	93	1290	15
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.85	0.85	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	2.00	1.00	1.00	1.00	0.10	0.90	1.00	2.00	1.00	1.00	1.98	0.02
Final Sat.:	3432	1862	1583	1769	164	1446	1769	3538	1583	1769	3490	41
Capacity Analysis Module:												
Vol/Sat:	0.26	0.03	0.07	0.00	0.17	0.17	0.10	0.31	0.22	0.05	0.37	0.37
Crit Moves:	****				****		****				****	
Green/Cycle:	0.26	0.41	0.41	0.02	0.17	0.17	0.10	0.39	0.39	0.07	0.36	0.36
Volume/Cap:	1.03	0.07	0.18	0.18	1.03	1.03	1.03	0.79	0.57	0.79	1.03	1.03
Delay/Veh:	76.9	18.2	19.2	51.4	106	105.9	121.9	30.0	25.2	75.0	66.8	66.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	76.9	18.2	19.2	51.4	106	105.9	121.9	30.0	25.2	75.0	66.8	66.8
LOS by Move:	E	B	B	D	F	F	F	C	C	E	E	E
HCM2k95thQ:	911	38	95	19	629	629	368	652	349	153	1097	1097

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	1	0 1	1	0	0	1 0	1	0	2	0 1	1	0	1	1 0
Lane Group:	L		T	R	L		RT	RT	L		T	R	L		RT	RT
#LnsInGrps:	2		1	1	1		1	1	1		2	1	1		2	2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.87	0.87		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.85	0.85		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	0.95	
Fnl Sat Adj:	0.90	0.98	0.83		0.93	0.85	0.85		0.93	0.93	0.83		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.26	0.41	0.41		0.02	0.17	0.17		0.10	0.39	0.39		0.07	0.36	0.36	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.78	0.79		1.00	1.00	1.00		1.00	0.92	0.87		0.99	1.00	1.00	
Q1:	13.0	0.7	1.6		0.1	7.7	7.7		5.1	13.0	6.7		2.5	19.1	19.1	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.48	0.48	0.48		0.60	0.60	0.60	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.87	0.87	0.87		0.77	0.77	0.77	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.23	0.53	0.48		0.16	0.44	0.44	
Q2:	8.7	0.1	0.2		0.2	6.5	6.5		2.7	1.8	0.6		0.5	7.8	7.8	
HCM2KQueue:	21.7	0.7	1.9		0.4	14.2	14.2		7.8	14.8	7.4		3.0	26.8	26.8	
70th%Factor:	1.16	1.20	1.20		1.20	1.17	1.17		1.18	1.17	1.18		1.19	1.15	1.15	
HCM2k70thQ:	25.1	0.9	2.2		0.4	16.6	16.6		9.2	17.3	8.7		3.6	30.9	30.9	
85th%Factor:	1.45	1.59	1.58		1.60	1.49	1.49		1.53	1.48	1.53		1.57	1.42	1.42	
HCM2k85thQ:	31.4	1.2	3.0		0.6	21.1	21.1		11.9	21.9	11.3		4.8	38.2	38.2	
90th%Factor:	1.54	1.79	1.76		1.79	1.60	1.60		1.67	1.59	1.68		1.74	1.50	1.50	
HCM2k90thQ:	33.3	1.3	3.3		0.6	22.7	22.7		13.0	23.5	12.3		5.3	40.4	40.4	
95th%Factor:	1.68	2.08	2.04		2.09	1.77	1.77		1.89	1.76	1.90		2.01	1.64	1.64	
HCM2k95thQ:	36.5	1.5	3.8		0.7	25.2	25.2		14.7	26.1	14.0		6.1	43.9	43.9	
98th%Factor:	1.89	2.65	2.57		2.67	2.04	2.04		2.25	2.02	2.27		2.49	1.83	1.83	
HCM2k98thQ:	41.0	1.9	4.8		1.0	28.9	28.9		17.5	29.9	16.7		7.6	49.0	49.0	

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.850
Loss Time (sec):	12	Average Delay (sec/veh):	35.5
Optimal Cycle:	90	Level Of Service:	D

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	1	0	0	1	0	1	0	1	1	0	1	0	2	0	1
Volume Module:	AM Peak Hour											
Base Vol:	251	120	150	6	161	68	111	957	163	134	780	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	251	120	150	6	161	68	111	957	163	134	780	6
Added Vol:	0	0	11	0	0	0	0	25	0	19	45	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	251	120	161	6	161	68	111	982	163	153	825	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	273	130	175	7	175	74	121	1067	177	166	897	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	273	130	175	7	175	74	121	1067	177	166	897	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	273	130	175	7	175	74	121	1067	177	166	897	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.94	0.94	0.93	0.91	0.91	0.93	0.93	0.83
Lanes:	1.00	1.00	1.00	1.00	0.70	0.30	1.00	1.72	0.28	1.00	2.00	1.00
Final Sat.:	1769	1862	1583	1769	1250	528	1769	2970	493	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.15	0.07	0.11	0.00	0.14	0.14	0.07	0.36	0.36	0.09	0.25	0.00
Crit Moves:	****				****			****			****	
Green/Cycle:	0.18	0.34	0.34	0.01	0.16	0.16	0.11	0.42	0.42	0.11	0.42	0.42
Volume/Cap:	0.85	0.21	0.33	0.33	0.85	0.85	0.60	0.85	0.85	0.85	0.60	0.01
Delay/Veh:	58.4	23.9	25.2	58.6	60.8	60.8	47.3	30.9	30.9	71.6	23.2	16.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	58.4	23.9	25.2	58.6	60.8	60.8	47.3	30.9	30.9	71.6	23.2	16.9
LOS by Move:	E	C	C	E	E	E	D	C	C	E	C	B
HCM2k95thQ:	493	125	181	30	465	465	167	732	732	359	468	5

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	1	0	1	0	1		1	0	0	1	0		1	0	1	1	0		1	0	2	0	1	
Lane Group:	L		T		R		L		RT		RT		L		RT		RT		L		T		R	
#LnsInGrps:	1		1		1		1		1		1		1		2		2		1		2		1	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:	8						8						8						8					
% Hev Veh:	2						2						2						2					
Grade:	0%						0%						0%						0%					
Parking/Hr:	No						No						No						No					
Bus Stp/Hr:	0						0						0						0					
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:	0						0						0						0					
ExclusiveRT:	Include						Include						Include						Include					
% RT Prtct:	0						0						0						0					
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx		
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
Hev Veh Adj:	0.98	0.98		0.98			0.98	0.98		0.98			0.98	0.98		0.98			0.98	0.98		0.98		
Grade Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
Parking Adj:	xxxx	xxxx		1.00			xxxx	1.00		1.00			xxxx	1.00		1.00			xxxx	xxxx		1.00		
Bus Stp Adj:	xxxx	xxxx		1.00			xxxx	1.00		1.00			xxxx	1.00		1.00			xxxx	xxxx		1.00		
Area Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
RT Adj:	xxxx	xxxx		0.85			xxxx	0.96		0.96			xxxx	0.98		0.98			xxxx	xxxx		0.85		
LT Adj:	0.95	xxxx		xxxxx			0.95	xxxx		xxxxx			0.95	xxxx		xxxxx			0.95	xxxx		xxxxx		
PedBike Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
HCM Sat Adj:	0.93	0.98		0.83			0.93	0.94		0.94			0.93	0.96		0.96			0.93	0.98		0.83		
Usr Sat Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
MLF Sat Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	0.95		0.95			1.00	0.95		1.00		
Fnl Sat Adj:	0.93	0.98		0.83			0.93	0.94		0.94			0.93	0.91		0.91			0.93	0.93		0.83		
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.18	0.34	0.34	0.01	0.16	0.16	0.11	0.42	0.42	0.11	0.42	0.42
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.85	0.87	1.00	0.99	0.99	0.98	0.93	0.93	0.99	0.86	0.76
Q1:	7.2	2.2	3.2	0.2	6.6	6.6	3.1	15.2	15.2	4.5	8.7	0.1
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.79	0.79	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.14	0.33	0.33	1.00	1.00	1.00
Q2:	3.6	0.3	0.5	0.4	3.5	3.5	0.2	1.6	1.6	3.1	1.5	0.0
HCM2KQueue:	10.8	2.5	3.6	0.6	10.1	10.1	3.3	16.9	16.9	7.6	10.2	0.1
70th%Factor:	1.18	1.19	1.19	1.20	1.18	1.18	1.19	1.17	1.17	1.18	1.18	1.20
HCM2k70thQ:	12.7	3.0	4.3	0.7	11.9	11.9	4.0	19.7	19.7	9.0	12.0	0.1
85th%Factor:	1.51	1.58	1.57	1.59	1.51	1.51	1.57	1.47	1.47	1.53	1.51	1.60
HCM2k85thQ:	16.3	3.9	5.7	0.9	15.3	15.3	5.2	24.8	24.8	11.6	15.4	0.1
90th%Factor:	1.63	1.75	1.73	1.79	1.64	1.64	1.74	1.57	1.57	1.67	1.64	1.80
HCM2k90thQ:	17.6	4.3	6.3	1.0	16.6	16.6	5.8	26.5	26.5	12.7	16.7	0.2
95th%Factor:	1.83	2.02	1.99	2.08	1.84	1.84	2.00	1.73	1.73	1.89	1.84	2.10
HCM2k95thQ:	19.7	5.0	7.2	1.2	18.6	18.6	6.7	29.3	29.3	14.4	18.7	0.2
98th%Factor:	2.14	2.53	2.46	2.66	2.16	2.16	2.47	1.97	1.97	2.26	2.16	2.69
HCM2k98thQ:	23.0	6.3	8.9	1.5	21.8	21.8	8.3	33.3	33.3	17.1	21.9	0.2

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec): 100 Critical Vol./Cap.(X): 0.994
Loss Time (sec): 12 Average Delay (sec/veh): 49.6
Optimal Cycle: 180 Level Of Service: D

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:	AM Peak Hour											
Base Vol:	44	268	393	57	412	103	86	1020	21	311	814	61
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	268	393	57	412	103	86	1020	21	311	814	61
Added Vol:	0	0	28	7	0	0	0	35	0	51	64	13
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	44	268	421	64	412	103	86	1055	21	362	878	74
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	48	291	458	70	448	112	93	1147	23	393	954	80
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	48	291	458	70	448	112	93	1147	23	393	954	80
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	48	291	458	70	448	112	93	1147	23	393	954	80
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.98	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3432	1862	1583	1769	1862	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.01	0.16	0.29	0.04	0.24	0.07	0.05	0.32	0.01	0.22	0.27	0.05
Crit Moves:			****	****				****		****		
Green/Cycle:	0.02	0.29	0.29	0.04	0.31	0.31	0.09	0.33	0.33	0.22	0.46	0.46
Volume/Cap:	0.77	0.54	0.99	0.99	0.77	0.23	0.59	0.99	0.04	0.99	0.59	0.11
Delay/Veh:	92.5	30.9	75.8	153.6	37.4	25.7	49.3	58.7	23.1	82.4	20.6	15.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	92.5	30.9	75.8	153.6	37.4	25.7	49.3	58.7	23.1	82.4	20.6	15.4
LOS by Move:	F	C	E	F	D	C	D	E	C	F	C	B
HCM2k95thQ:	104	350	851	238	604	116	184	1037	21	766	453	54

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

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Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        2  0  1  0  1    1  0  1  0  1    1  0  2  0  1    1  0  2  0  1
Lane Group:    L    T     R     L    T     R     L    T     R     L    T     R
#LnsInGrps:     2    1     1     1    1     1     1    2     1     1    2     1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:          8                8                8                8
% Hev Veh:            2                2                2                2
Grade:               0%               0%               0%               0%
Parking/Hr:          No               No               No               No
Bus Stp/Hr:           0                0                0                0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:          0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:           0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Hev Veh Adj: 0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
Grade Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Parking Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00
Bus Stp Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00
Area Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
RT Adj:      xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx xxxx  0.85
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.93 0.98  0.83  0.93 0.98  0.83  0.93 0.98  0.83  0.93 0.98  0.83
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 0.97 1.00  1.00  1.00 1.00  1.00  1.00 0.95  1.00  1.00 0.95  1.00
Fnl Sat Adj: 0.90 0.98  0.83  0.93 0.98  0.83  0.93 0.93  0.83  0.93 0.93  0.83
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < < < No  > > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
```


EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Green/Cycle: 0.02 0.29  0.29  0.04 0.31  0.31  0.09 0.33  0.33  0.22 0.46  0.46
ArrivalType:         4                4                4                4
ProgFactor:  1.00 0.92  1.00  1.00 0.95  0.87  0.99 1.00  0.84  1.00 0.82  0.73
Q1:           0.7  6.3  12.7   1.9 10.7   2.0   2.5 16.7   0.4  10.9  8.4   0.9
UpstreamVC:  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00
UpstreamAdj: 0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00
EarlyArrAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Q2:           1.4  1.1   7.4   2.9  2.9   0.3   1.2  8.5   0.0   6.9  1.4   0.1
HCM2KQueue:   2.0  7.4  20.1   4.9 13.6   2.3   3.7 25.2   0.4  17.8  9.8   1.1
------------|---------------||---------------||---------------||---------------|
70th%Factor: 1.20 1.18  1.16  1.19 1.17  1.19  1.19 1.15  1.20  1.16 1.18  1.20
HCM2k70thQ:   2.4  8.7  23.3   5.8 15.9   2.7   4.4 29.0   0.5  20.7 11.6   1.3
------------|---------------||---------------||---------------||---------------|
85th%Factor: 1.58 1.53  1.45  1.56 1.49  1.58  1.57 1.43  1.60  1.47 1.52  1.59
HCM2k85thQ:   3.2 11.3  29.2   7.6 20.2   3.6   5.8 36.0   0.7  26.1 14.9   1.7
------------|---------------||---------------||---------------||---------------|
90th%Factor: 1.76 1.68  1.55  1.71 1.60  1.76  1.73 1.51  1.79  1.56 1.64  1.78
HCM2k90thQ:   3.6 12.4  31.0   8.3 21.7   4.0   6.4 38.1   0.7  27.8 16.1   1.9
------------|---------------||---------------||---------------||---------------|
95th%Factor: 2.04 1.90  1.70  1.96 1.78  2.03  1.99 1.65  2.09  1.72 1.85  2.07
HCM2k95thQ:   4.1 14.0  34.1   9.5 24.2   4.7   7.3 41.5   0.9  30.6 18.1   2.2
------------|---------------||---------------||---------------||---------------|
98th%Factor: 2.56 2.27  1.91  2.39 2.05  2.54  2.45 1.84  2.67  1.95 2.17  2.62
HCM2k98thQ:   5.2 16.7  38.4  11.6 27.8   5.8   9.1 46.4   1.1  34.8 21.3   2.8
```

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.645
Loss Time (sec): 12 | Average Delay (sec/veh): 32.3
Optimal Cycle: 53 | Level Of Service: C

Street Name:	West Lane						Armstrong Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	0	1	1	0	0	0	1!	0	0	0	0	1!	0	0
Volume Module:	AM Peak Hour											
Base Vol:	4	387	76	203	525	33	45	172	5	60	97	96
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	387	76	203	525	33	45	172	5	60	97	96
Added Vol:	0	26	0	0	14	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	413	76	203	539	33	45	172	5	60	97	96
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	4	449	83	221	586	36	49	187	5	65	105	104
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	449	83	221	586	36	49	187	5	65	105	104
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	449	83	221	586	36	49	187	5	65	105	104
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.91	0.91	0.93	0.92	0.92	0.97	0.97	0.97	0.92	0.92	0.92
Lanes:	1.00	1.69	0.31	1.00	1.88	0.12	0.20	0.78	0.02	0.24	0.38	0.38
Final Sat.:	1769	2919	537	1769	3304	202	373	1424	41	414	669	662
Capacity Analysis Module:												
Vol/Sat:	0.00	0.15	0.15	0.12	0.18	0.18	0.13	0.13	0.13	0.16	0.16	0.16
Crit Moves:		****		****				****			****	
Green/Cycle:	0.01	0.24	0.24	0.19	0.43	0.43	0.20	0.20	0.20	0.24	0.24	0.24
Volume/Cap:	0.42	0.64	0.64	0.64	0.42	0.42	0.64	0.64	0.64	0.64	0.64	0.64
Delay/Veh:	74.2	36.0	36.0	41.4	20.2	20.2	40.3	40.3	40.3	37.3	37.3	37.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	74.2	36.0	36.0	41.4	20.2	20.2	40.3	40.3	40.3	37.3	37.3	37.3
LOS by Move:	E	D	D	D	C	C	D	D	D	D	D	D
HCM2k95thQ:	30	391	391	338	283	283	358	358	358	385	385	385

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	1	0	1	1	0		1	0	1	1	0		0	0	1!	0	0		0	0	1!	0	0	
Lane Group:	L		RT		RT		L		RT		RT		LTR		LTR		LTR		LTR		LTR		LTR	
#LnsInGrps:	1		2		2		1		2		2		1		1		1		1		1		1	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:			8						8						8						8			
% Hev Veh:			2						2						2						2			
Grade:			0%						0%						0%						0%			
Parking/Hr:			No						No						No						No			
Bus Stp/Hr:			0						0						0						0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0						0						0						0			
ExclusiveRT:			Include						Include						Include						Include			
% RT Prtct:			0						0						0						0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx		xxxx			1	xxxx		xxxx			4		4		4		4		4		4	
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
Hev Veh Adj:	0.98	0.98		0.98			0.98	0.98		0.98			0.98	0.98		0.98			0.98	0.98		0.98		
Grade Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
Parking Adj:	xxxx	1.00		1.00			xxxx	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
Bus Stp Adj:	xxxx	1.00		1.00			xxxx	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
Area Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
RT Adj:	xxxx	0.98		0.98			xxxx	0.99		0.99			1.00	1.00		1.00			0.95	0.95		0.95		
LT Adj:	0.95	xxxx		xxxxx			0.95	xxxx		xxxxx			0.99	0.99		0.99			0.99	0.99		0.99		
PedBike Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
HCM Sat Adj:	0.93	0.96		0.96			0.93	0.97		0.97			0.97	0.97		0.97			0.92	0.92		0.92		
Usr Sat Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
MLF Sat Adj:	1.00	0.95		0.95			1.00	0.95		0.95			1.00	1.00		1.00			1.00	1.00		1.00		
Fnl Sat Adj:	0.93	0.91		0.91			0.93	0.92		0.92			0.97	0.97		0.97			0.92	0.92		0.92		
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.01	0.24	0.24	0.19	0.43	0.43	0.20	0.20	0.20	0.24	0.24	0.24
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.95	0.95	0.97	0.81	0.81	0.96	0.96	0.96	0.95	0.95	0.95
Q1:	0.1	6.7	6.7	5.5	5.1	5.1	5.9	5.9	5.9	6.5	6.5	6.5
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.4	1.7	1.7	1.6	0.7	0.7	1.7	1.7	1.7	1.7	1.7	1.7
HCM2KQueue:	0.6	8.3	8.3	7.1	5.8	5.8	7.6	7.6	7.6	8.2	8.2	8.2
70th%Factor:	1.20	1.18	1.18	1.18	1.19	1.19	1.18	1.18	1.18	1.18	1.18	1.18
HCM2k70thQ:	0.7	9.8	9.8	8.4	6.9	6.9	9.0	9.0	9.0	9.7	9.7	9.7
85th%Factor:	1.59	1.53	1.53	1.54	1.55	1.55	1.53	1.53	1.53	1.53	1.53	1.53
HCM2k85thQ:	0.9	12.7	12.7	10.9	9.0	9.0	11.6	11.6	11.6	12.5	12.5	12.5
90th%Factor:	1.79	1.66	1.66	1.68	1.70	1.70	1.67	1.67	1.67	1.67	1.67	1.67
HCM2k90thQ:	1.0	13.9	13.9	11.9	9.9	9.9	12.7	12.7	12.7	13.6	13.6	13.6
95th%Factor:	2.08	1.88	1.88	1.90	1.93	1.93	1.89	1.89	1.89	1.88	1.88	1.88
HCM2k95thQ:	1.2	15.7	15.7	13.5	11.3	11.3	14.3	14.3	14.3	15.4	15.4	15.4
98th%Factor:	2.66	2.23	2.23	2.28	2.34	2.34	2.26	2.26	2.26	2.23	2.23	2.23
HCM2k98thQ:	1.5	18.6	18.6	16.2	13.7	13.7	17.1	17.1	17.1	18.3	18.3	18.3

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.278
Loss Time (sec): 9 Average Delay (sec/veh): 8.6
Optimal Cycle: 25 Level Of Service: A

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0	1	1	0
Volume Module:AM Peak Hour												
Base Vol:	1	2	30	34	6	32	4	461	0	14	612	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	2	30	34	6	32	4	461	0	14	612	18
Added Vol:	0	0	1	0	0	0	0	25	0	0	14	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	2	31	34	6	32	4	486	0	14	626	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	1	2	34	37	7	35	4	528	0	15	680	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	2	34	37	7	35	4	528	0	15	680	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	2	34	37	7	35	4	528	0	15	680	20
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.86	0.86	0.86	0.80	0.80	0.80	0.93	0.93	0.95	0.93	0.93	0.93
Lanes:	0.03	0.06	0.91	0.48	0.08	0.44	1.00	2.00	0.00	1.00	1.94	0.06
Final Sat.:	48	96	1483	714	126	672	1769	3538	0	1769	3425	98
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.05	0.05	0.05	0.00	0.15	0.00	0.01	0.20	0.20
Crit Moves:					****		****				****	
Green/Cycle:	0.19	0.19	0.19	0.19	0.19	0.19	0.01	0.68	0.00	0.04	0.71	0.71
Volume/Cap:	0.12	0.12	0.12	0.28	0.28	0.28	0.28	0.22	0.00	0.22	0.28	0.28
Delay/Veh:	34.1	34.1	34.1	35.5	35.5	35.5	58.7	5.9	0.0	48.1	5.1	5.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.1	34.1	34.1	35.5	35.5	35.5	58.7	5.9	0.0	48.1	5.1	5.1
LOS by Move:	C	C	C	D	D	D	E	A	A	D	A	A
HCM2k95thQ:	48	48	48	108	108	108	23	58	0	35	54	54

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	1	1 0	1	0	1	1 0
Lane Group:	LTR	LTR	LTR	LTR	LTR	LTR	L	RT	RT	L	RT	RT				
#LnsInGrps:	1	1	1	1	1	1	1	2	2	1	2	2				
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12				
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	5	5	5	5	5	5	1	xxxx	xxxx	1	xxxx	xxxx				
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	xxxxx	1.00	1.00	1.00				
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	xxxxx	0.98	0.98	0.98				
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	xxxxx	1.00	1.00	1.00				
Parking Adj:	1.00	1.00	1.00	1.00	1.00	1.00	xxxx	1.00	xxxxx	xxxx	1.00	1.00				
Bus Stp Adj:	1.00	1.00	1.00	1.00	1.00	1.00	xxxx	1.00	xxxxx	xxxx	1.00	1.00				
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	xxxxx	1.00	1.00	1.00				
RT Adj:	0.88	0.88	0.88	0.94	0.94	0.94	xxxx	xxxx	xxxxx	xxxx	1.00	1.00				
LT Adj:	1.00	1.00	1.00	0.86	0.86	0.86	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx				
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
HCM Sat Adj:	0.86	0.86	0.86	0.80	0.80	0.80	0.93	0.98	1.00	0.93	0.98	0.98				
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95				
Fnl Sat Adj:	0.86	0.86	0.86	0.80	0.80	0.80	0.93	0.93	0.95	0.93	0.93	0.93				
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00				

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	100	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	17.62	17.62	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	18.62	18.62	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	18.62	18.62	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	1	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	1	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	1	37	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	0.03	0.47	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	0.47	0.03	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	0.03	1.03	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	78	37	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	2.17	1.03	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	1.33	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	3.00	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	13.02	4.35	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	0.75	0.75	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	3.58	0.73	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	5.60	14.27	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	0.00	0.00	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	0.53	0.97	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	1.52	1.46	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	1.00	1.00	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	0.11	0.16	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	1.00	0.86	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	1.00	0.86	xxxxxx	xxxxxx

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.19	0.19	0.19	0.19	0.19	0.19	0.01	0.68	0.00	0.04	0.71	0.71
ArrivalType:		4			4			4			4	
ProgFactor:	0.93	0.93	0.93	0.94	0.94	0.94	1.00	0.30	1.00	0.99	0.18	0.18
Q1:	0.8	0.8	0.8	1.8	1.8	1.8	0.1	0.8	0.0	0.4	0.7	0.7
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Q2:	0.1	0.1	0.1	0.4	0.4	0.4	0.3	0.3	0.0	0.3	0.4	0.4
HCM2KQueue:	0.9	0.9	0.9	2.1	2.1	2.1	0.4	1.1	0.0	0.7	1.0	1.0
70th%Factor:	1.20	1.20	1.20	1.19	1.19	1.19	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	1.1	1.1	1.1	2.6	2.6	2.6	0.5	1.3	0.0	0.8	1.2	1.2
85th%Factor:	1.59	1.59	1.59	1.58	1.58	1.58	1.60	1.59	1.60	1.59	1.59	1.59
HCM2k85thQ:	1.5	1.5	1.5	3.4	3.4	3.4	0.7	1.8	0.0	1.1	1.7	1.7
90th%Factor:	1.78	1.78	1.78	1.76	1.76	1.76	1.79	1.78	1.80	1.79	1.78	1.78
HCM2k90thQ:	1.7	1.7	1.7	3.8	3.8	3.8	0.8	2.0	0.0	1.2	1.8	1.8
95th%Factor:	2.07	2.07	2.07	2.03	2.03	2.03	2.09	2.06	2.10	2.08	2.07	2.07
HCM2k95thQ:	1.9	1.9	1.9	4.3	4.3	4.3	0.9	2.3	0.0	1.4	2.1	2.1
98th%Factor:	2.63	2.63	2.63	2.55	2.55	2.55	2.67	2.62	2.70	2.65	2.62	2.62
HCM2k98thQ:	2.5	2.5	2.5	5.4	5.4	5.4	1.2	2.9	0.0	1.8	2.7	2.7

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	1.029
Loss Time (sec):	12	Average Delay (sec/veh):	57.2
Optimal Cycle:	180	Level Of Service:	E

Street Name:	West Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:	AM Peak Hour											
Base Vol:	398	273	64	31	445	185	194	735	522	106	584	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	398	273	64	31	445	185	194	735	522	106	584	8
Added Vol:	56	11	47	7	6	0	0	38	32	69	73	14
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	454	284	111	38	451	185	194	773	554	175	657	22
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	493	309	121	41	490	201	211	840	602	190	714	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	493	309	121	41	490	201	211	840	602	190	714	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	493	309	121	41	490	201	211	840	602	190	714	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.28	0.09	0.08	0.02	0.14	0.13	0.12	0.24	0.38	0.11	0.20	0.02
Crit Moves:	****				****				****	****		
Green/Cycle:	0.27	0.32	0.32	0.09	0.13	0.13	0.18	0.37	0.37	0.10	0.30	0.30
Volume/Cap:	1.03	0.27	0.24	0.27	1.03	0.94	0.68	0.64	1.03	1.03	0.68	0.05
Delay/Veh:	85.2	25.5	25.3	43.8	92.1	88.7	44.4	27.1	76.3	118.8	32.6	25.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	85.2	25.5	25.3	43.8	92.1	88.7	44.4	27.1	76.3	118.8	32.6	25.1
LOS by Move:	F	C	C	D	F	F	D	C	E	F	C	C
HCM2k95thQ:	844	156	116	73	595	454	341	495	1086	382	445	23

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	2	0	1	1	0	2	0	1	1	0	2	0	1	1
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	2	1		1	2	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.27	0.32	0.32		0.09	0.13	0.13		0.18	0.37	0.37		0.10	0.30	0.30	
ArrivalType:	4				4				4				4			
ProgFactor:	1.00	0.87	0.87		0.98	1.00	1.00		0.97	0.90	1.00		1.00	0.94	0.86	
Q1:	13.7	2.9	2.1		1.0	7.2	5.5		5.3	9.1	16.7		5.3	8.6	0.4	
UpstreamVC:	0.37	0.37	0.37		0.00	0.00	0.00		0.00	0.00	0.00		0.31	0.31	0.31	
UpstreamAdj:	0.94	0.94	0.94		0.00	0.00	0.00		0.00	0.00	0.00		0.96	0.96	0.96	
EarlyArrAdj:	0.44	0.51	0.46		1.00	1.00	1.00		1.00	1.00	1.00		0.26	0.50	0.45	
Q2:	6.2	0.2	0.1		0.4	6.2	4.3		1.8	1.7	9.8		2.8	1.0	0.0	
HCM2KQueue:	19.9	3.1	2.3		1.4	13.3	9.8		7.2	10.8	26.5		8.1	9.6	0.4	
70th%Factor:	1.16	1.19	1.19		1.20	1.17	1.18		1.18	1.18	1.15		1.18	1.18	1.20	
HCM2k70thQ:	23.1	3.7	2.7		1.7	15.6	11.6		8.5	12.7	30.5		9.6	11.3	0.5	
85th%Factor:	1.45	1.57	1.58		1.59	1.49	1.52		1.54	1.51	1.42		1.53	1.52	1.60	
HCM2k85thQ:	28.9	4.9	3.6		2.2	19.9	14.9		11.0	16.3	37.8		12.4	14.6	0.7	
90th%Factor:	1.55	1.74	1.76		1.77	1.61	1.64		1.68	1.63	1.51		1.67	1.65	1.79	
HCM2k90thQ:	30.8	5.4	4.0		2.5	21.4	16.2		12.0	17.7	40.0		13.5	15.8	0.8	
95th%Factor:	1.70	2.00	2.03		2.05	1.79	1.85		1.90	1.83	1.64		1.88	1.85	2.09	
HCM2k95thQ:	33.8	6.2	4.6		2.9	23.8	18.2		13.6	19.8	43.4		15.3	17.8	0.9	
98th%Factor:	1.92	2.49	2.54		2.60	2.06	2.17		2.28	2.14	1.83		2.24	2.18	2.67	
HCM2k98thQ:	38.1	7.8	5.8		3.7	27.4	21.3		16.3	23.1	48.5		18.1	20.9	1.2	

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: D[28.9]

Street Name:	Ham Lane							Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R	
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled			
Rights:	Include			Include			Include			Include			
Lanes:	0 0 0 0 0			1 0 0 0 1			1 0 2 0 0			0 0 1 1 0			
Volume Module:AM Peak Hour													
Base Vol:	0	0	0	20	0	8	7	772	0	0	632	24	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Initial Bse:	0	0	0	20	0	8	7	772	0	0	632	24	
Added Vol:	0	0	0	0	0	0	0	147	0	0	136	1	
Pass-By:	0	0	0	0	0	0	0	0	0	0	0	0	
Initial Fut:	0	0	0	20	0	8	7	919	0	0	768	25	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
PHF Volume:	0	0	0	22	0	9	8	999	0	0	835	27	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
FinalVolume:	0	0	0	22	0	9	8	999	0	0	835	27	
Critical Gap Module:													
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Capacity Module:													
Cnflict Vol:	xxxx	xxxx	xxxxx	1363	xxxx	431	862	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	xxxxx	139	xxxx	573	776	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	xxxxx	138	xxxx	573	776	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	xxxx	0.16	xxxx	0.02	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	
Level Of Service Module:													
2Way95thQ:	xxxx	xxxx	xxxxx	13.5	xxxx	1.2	0.7	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx	35.9	xxxx	11.4	9.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*	E	*	B	A	*	*	*	*	*	
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*	
ApproachDel:	xxxxxx			28.9			xxxxxx			xxxxxx			
ApproachLOS:	*			D			*			*			

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R	
HevVeh:	2%			2%			2%			2%			
Grade:	0%			0%			0%			0%			
Peds/Hour:	0			0			0			0			
Pedestrian Walk Speed: 4.00 feet/sec													
LaneWidth:	12 feet			12 feet			12 feet			12 feet			
Time Period: 0.25 hour													
Upstream Signals:													
Link Index:							#23			#26			
Dist(miles):							0.250			0.250			
Speed (mph):							1.00			1.00			
SignalIndex:							#53			#10			
Cycle Time:							100 secs			100 secs			
InitVolume:							0	870		58	729		
Saturation:							0	3538		1769	3505		
ArrivalType:							0	4		4	4		
G/C:							0.00	0.66		0.10	0.76		
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection													
P:							0.000	0.874		0.131	1.013		
gq1:							0.00	3.10		2.85	-0.27		
gq2:							0.00	1.51		0.13	-0.10		
gq:							0.00	4.61		2.98	-0.37		
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons													
alpha:							0.500			0.500			
beta:							0.667			0.667			
ta (secs):							900.000			900.000			
F:							0.003			0.003			
f:							1.000	1.000		1.000	1.000		
vcmax:							0	54		17	-4		
vcg:							0	257		19	215		
vcmin:							2000	2000		2000	2000		
tp:							0.0	0.0		0.0	0.0		
p:							0.000			0.000			
*** Computation 3: Platoon Event Periods													
pdom/psubo:							0.000/0.000/Unconstrained						
*** Computation 4: Conflicting Flows During Each Unblocked Period													
InitCnflVol:	1432	1876	499	1363	1863	431	862	xxxxx	xxxxx	0	xxxxx	xxxxx	
AdjCnflVol:	1432	1876	499	1363	1863	431	862	xxxxx	xxxxx	0	xxxxx	xxxxx	
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	
ConflictVol:	1432	1876	499	1363	1863	431	862	xxxxx	xxxxx	0	xxxxx	xxxxx	
*** Computation 5: Capacity for Subject Movement During Unblocked Period													
InitPotCap:	95	71	517	139	72	573	776	xxxxx	xxxxx	1622	xxxxx	xxxxx	
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	
Potent Cap.:	95	71	517	139	72	573	776	xxxxx	xxxxx	1622	xxxxx	xxxxx	

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St J

Cycle (sec):	100	Critical Vol./Cap.(X):	0.441
Loss Time (sec):	12	Average Delay (sec/veh):	8.3
Optimal Cycle:	37	Level Of Service:	A

Street Name:	Leach Road/Street J						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	5	0	6	5	908	0	0	650	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	5	0	6	5	908	0	0	650	6
Added Vol:	58	0	66	0	0	0	0	127	20	23	79	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	58	0	66	5	0	6	5	1035	20	23	729	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	63	0	72	5	0	7	5	1125	22	25	792	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	63	0	72	5	0	7	5	1125	22	25	792	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	63	0	72	5	0	7	5	1125	22	25	792	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	0.93	1.00	0.83	0.93	0.93	0.93	0.93	0.93	0.93
Lanes:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.96	0.04	1.00	1.98	0.02
Final Sat.:	1769	0	1583	1769	0	1583	1769	3460	67	1769	3505	29
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.05	0.00	0.00	0.00	0.00	0.33	0.33	0.01	0.23	0.23
Crit Moves:			****	****				****		****		
Green/Cycle:	0.10	0.00	0.10	0.01	0.00	0.01	0.01	0.74	0.74	0.03	0.76	0.76
Volume/Cap:	0.36	0.00	0.44	0.44	0.00	0.59	0.30	0.44	0.44	0.44	0.30	0.30
Delay/Veh:	43.4	0.0	44.1	72.6	0.0	113.4	58.1	5.2	5.2	52.9	3.8	3.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.4	0.0	44.1	72.6	0.0	113.4	58.1	5.2	5.2	52.9	3.8	3.8
LOS by Move:	D	A	D	E	A	F	E	A	A	D	A	A
HCM2k95thQ:	109	0	130	34	0	44	9	58	58	69	22	22

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	0	1 0	1	0	0	1 0	1	0	1	1 0	1	0	1	1 0
Lane Group:	L		RT	RT	L		RT	RT	L		RT	RT	L		RT	RT
#LnsInGrps:	1		1	1	1		1	1	1		2	2	1		2	2
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	xxxx	0.98		0.98	xxxx	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	xxxx	1.00		1.00	xxxx	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	1.00	1.00		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	1.00	0.83		0.93	1.00	0.83		0.93	0.98	0.98		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	0.95		1.00	0.95	0.95	
Fnl Sat Adj:	0.93	1.00	0.83		0.93	1.00	0.83		0.93	0.93	0.93		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	0.00	1.00		1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.10	0.00	0.10	0.01	0.00	0.01	0.01	0.74	0.74	0.03	0.76	0.76
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	1.00	0.98	1.00	1.00	1.00	1.00	0.07	0.07	0.99	0.00	0.00
Q1:	1.6	0.0	1.8	0.2	0.0	0.2	0.1	0.5	0.5	0.7	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.41	0.41	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.92	0.92	0.92	0.00	0.00	0.00
EarlyArrAdj:	1.00	0.00	1.00	1.00	0.00	1.00	0.06	0.81	0.81	1.00	1.00	1.00
Q2:	0.5	0.0	0.7	0.5	0.0	0.7	0.0	0.6	0.6	0.7	0.4	0.4
HCM2KQueue:	2.1	0.0	2.6	0.6	0.0	0.8	0.2	1.1	1.1	1.4	0.4	0.4
70th%Factor:	1.19	1.20	1.19	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	2.6	0.0	3.1	0.8	0.0	1.0	0.2	1.3	1.3	1.6	0.5	0.5
85th%Factor:	1.58	1.60	1.58	1.59	1.60	1.59	1.60	1.59	1.59	1.59	1.60	1.60
HCM2k85thQ:	3.4	0.0	4.0	1.0	0.0	1.3	0.3	1.8	1.8	2.1	0.7	0.7
90th%Factor:	1.76	1.80	1.75	1.79	1.80	1.78	1.80	1.78	1.78	1.77	1.79	1.79
HCM2k90thQ:	3.8	0.0	4.5	1.2	0.0	1.5	0.3	2.0	2.0	2.4	0.8	0.8
95th%Factor:	2.03	2.10	2.02	2.08	2.10	2.07	2.09	2.06	2.06	2.06	2.09	2.09
HCM2k95thQ:	4.4	0.0	5.2	1.3	0.0	1.7	0.4	2.3	2.3	2.8	0.9	0.9
98th%Factor:	2.55	2.70	2.52	2.65	2.70	2.64	2.69	2.62	2.62	2.60	2.67	2.67
HCM2k98thQ:	5.5	0.0	6.5	1.7	0.0	2.2	0.5	2.9	2.9	3.5	1.1	1.1

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Cycle (sec):	100	Critical Vol./Cap.(X):	0.352
Loss Time (sec):	12	Average Delay (sec/veh):	7.2
Optimal Cycle:	33	Level Of Service:	A

Street Name:	Micke Grove Road/Holman Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1 0 1	1	0	1 0 1	1	0	2 0 1	1	0	2 0 1
Volume Module:	AM Peak Hour											
Base Vol:	0	0	0	6	0	5	7	792	0	0	666	7
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	6	0	5	7	792	0	0	666	7
Added Vol:	22	0	0	0	0	25	45	105	43	0	54	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	22	0	0	6	0	30	52	897	43	0	720	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	24	0	0	7	0	33	57	975	47	0	783	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	0	0	7	0	33	57	975	47	0	783	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	24	0	0	7	0	33	57	975	47	0	783	8
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	1.00	0.93	1.00	0.83	0.93	0.93	0.83	1.00	0.93	0.83
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1769	1900	1900	1769	1900	1583	1769	3538	1583	1900	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.00	0.00	0.00	0.02	0.03	0.28	0.03	0.00	0.22	0.00
Crit Moves:	****					****		****		****		
Green/Cycle:	0.04	0.00	0.00	0.10	0.00	0.06	0.10	0.78	0.78	0.00	0.68	0.68
Volume/Cap:	0.35	0.00	0.00	0.04	0.00	0.35	0.32	0.35	0.04	0.00	0.32	0.01
Delay/Veh:	50.0	0.0	0.0	41.0	0.0	47.6	43.0	3.3	2.4	0.0	6.5	5.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.0	0.0	0.0	41.0	0.0	47.6	43.0	3.3	2.4	0.0	6.5	5.0
LOS by Move:	D	A	A	D	A	D	D	A	A	A	A	A
HCM2k95thQ:	59	0	0	10	0	70	96	28	2	0	91	1

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

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Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        1  0  1  0  1    1  0  1  0  1    1  0  2  0  1    1  0  2  0  1
Lane Group:    L    T     R     L    T     R     L    T     R     L    T     R
#LnsInGrps:     1    1     1     1    1     1     1    2     1     1    2     1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:          8                8                8                8
% Hev Veh:            2                2                2                2
Grade:               0%               0%               0%               0%
Parking/Hr:          No               No               No               No
Bus Stp/Hr:           0                0                0                0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:          0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:           0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 xxxx xxxxx  1.00 xxxx  1.00  1.00 1.00  1.00  xxxx 1.00  1.00
Hev Veh Adj: 0.98 xxxx xxxxx  0.98 xxxx  0.98  0.98 0.98  0.98  xxxx 0.98  0.98
Grade Adj:   1.00 xxxx xxxxx  1.00 xxxx  1.00  1.00 1.00  1.00  xxxx 1.00  1.00
Parking Adj: xxxx xxxx xxxxx  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00
Bus Stp Adj: xxxx xxxx xxxxx  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00
Area Adj:    1.00 xxxx xxxxx  1.00 xxxx  1.00  1.00 1.00  1.00  xxxx 1.00  1.00
RT Adj:      xxxx xxxx xxxxx  xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx xxxx  0.85
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx  xxxx xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.93 1.00  1.00  0.93 1.00  0.83  0.93 0.98  0.83  1.00 0.98  0.83
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 0.95  1.00  1.00 0.95  1.00
Fnl Sat Adj: 0.93 1.00  1.00  0.93 1.00  0.83  0.93 0.93  0.83  1.00 0.93  0.83
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 0.00  0.00  1.00 0.00  1.00  1.00 1.00  1.00  0.00 1.00  1.00
```


EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Green/Cycle: 0.04 0.00  0.00  0.10 0.00  0.06  0.10 0.78  0.78  0.00 0.68  0.68
ArrivalType:         4                4                4                4
ProgFactor:  0.99 1.00  1.00  0.97 1.00  0.99  0.97 0.00  0.00  1.00 0.31  0.28
Q1:           0.6  0.0   0.0   0.2  0.0   0.9   1.4  0.0   0.0   0.0  1.4   0.0
UpstreamVC:  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.50  0.50
UpstreamAdj: 0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.86  0.86
EarlyArrAdj: 1.00 0.00  0.00  1.00 0.00  1.00  1.00 1.00  1.00  0.00 0.73  0.66
Q2:           0.5  0.0   0.0   0.0  0.0   0.5   0.5  0.5   0.0   0.0  0.3   0.0
HCM2KQueue:   1.1  0.0   0.0   0.2  0.0   1.4   1.9  0.5   0.0   0.0  1.8   0.0
------------|---------------||---------------||---------------||---------------|
70th%Factor: 1.20 1.20  1.20  1.20 1.20  1.20  1.20 1.20  1.20  1.20 1.20  1.20
HCM2k70thQ:   1.4  0.0   0.0   0.2  0.0   1.6   2.3  0.6   0.0   0.0  2.1   0.0
------------|---------------||---------------||---------------||---------------|
85th%Factor: 1.59 1.60  1.60  1.60 1.60  1.59  1.58 1.59  1.60  1.60 1.58  1.60
HCM2k85thQ:   1.8  0.0   0.0   0.3  0.0   2.2   3.0  0.9   0.1   0.0  2.8   0.0
------------|---------------||---------------||---------------||---------------|
90th%Factor: 1.78 1.80  1.80  1.80 1.80  1.77  1.76 1.79  1.80  1.80 1.77  1.80
HCM2k90thQ:   2.0  0.0   0.0   0.4  0.0   2.4   3.3  1.0   0.1   0.0  3.1   0.0
------------|---------------||---------------||---------------||---------------|
95th%Factor: 2.06 2.10  2.10  2.09 2.10  2.06  2.04 2.08  2.10  2.10 2.04  2.10
HCM2k95thQ:   2.4  0.0   0.0   0.4  0.0   2.8   3.9  1.1   0.1   0.0  3.6   0.0
------------|---------------||---------------||---------------||---------------|
98th%Factor: 2.62 2.70  2.70  2.68 2.70  2.60  2.56 2.66  2.70  2.70 2.57  2.70
HCM2k98thQ:   3.0  0.0   0.0   0.5  0.0   3.6   4.8  1.4   0.1   0.0  4.6   0.1
```

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Average Delay (sec/veh): 7.7 Worst Case Level Of Service: B[11.8]

Street Name:	SR 99 West Frontage Rd						SR 99 SB Ramps (Eight Mile Rd)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 1 0 0 0			0 0 0 0 0			1 0 0 0 1		
Volume Module:AM Peak Hour												
Base Vol:	0	103	1	350	106	0	0	0	0	14	0	287
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	103	1	350	106	0	0	0	0	14	0	287
Added Vol:	0	0	0	73	0	0	0	0	0	0	0	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	103	1	423	106	0	0	0	0	14	0	294
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	112	1	460	115	0	0	0	0	15	0	320
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	112	1	460	115	0	0	0	0	15	0	320
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	113	xxxx	xxxxx	xxxx	xxxx	xxxxx	1147	xxxx	112
Potent Cap.:	xxxx	xxxx	xxxxx	1476	xxxx	xxxxx	xxxx	xxxx	xxxxx	220	xxxx	940
Move Cap.:	xxxx	xxxx	xxxxx	1476	xxxx	xxxxx	xxxx	xxxx	xxxxx	148	xxxx	940
Volume/Cap:	xxxx	xxxx	xxxx	0.31	xxxx	xxxx	xxxx	xxxx	xxxx	0.10	xxxx	0.34
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	33.6	xxxx	xxxxx	xxxx	xxxx	xxxxx	8.4	xxxx	37.9
Control Del:	xxxxx	xxxx	xxxxx	8.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	32.1	xxxx	10.8
LOS by Move:	*	*	*	A	*	*	*	*	*	D	*	B
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	1.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	8.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			11.8		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:	#218			#183								
Dist(miles):	0.250			0.250								
Speed (mph):	1.00			1.00								
SignalIndex:	#22			#12								
Cycle Time:	100 secs			100 secs								
InitVolume:	538	15		149	20							
Saturation:	1769	1334		1769	871							
ArrivalType:	4	4		4	4							
G/C:	0.37	0.19		0.15	0.04							
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:	0.487	0.256		0.196	0.055							
gq1:	15.60	0.84		6.77	2.17							
gq2:	10.63	0.01		0.86	0.07							
gq:	26.23	0.85		7.63	2.24							
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:	0.550			0.550								
beta:	0.645			0.645								
ta (secs):	900.000			900.000								
F:	0.003			0.003								
f:	0.204	1.000		1.000	1.000							
vcmax:	28	4		42	6							
vcg:	32	4		45	6							
vcmin:	1000	1000		1000	1000							
tp:	0.0	0.0		0.0	0.0							
p:	0.000			0.000								
*** Computation 3: Platoon Event Periods												
pdom/psubo:	0.000/0.000/Unconstrained											
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	0	xxxxx	xxxxx	113	xxxxx	xxxxx	1307	1148	115	1147	1147	112
AdjCnflVol:	0	xxxxx	xxxxx	113	xxxxx	xxxxx	1307	1148	115	1147	1147	112
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	0	xxxxx	xxxxx	113	xxxxx	xxxxx	1307	1148	115	1147	1147	112
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	1623	xxxxx	xxxxx	1476	xxxxx	xxxxx	137	199	937	220	199	940
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
Potent Cap.:	1623	xxxxx	xxxxx	1476	xxxxx	xxxxx	137	199	937	220	199	940

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Average Delay (sec/veh): 5.9 Worst Case Level Of Service: D[27.0]

Street Name:	SR 99 East Frontage Rd								SR 99 NB Ramps (Eight Mile Rd)							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Volume Module: AM Peak Hour																				
Base Vol:	152	197	0	0	301	214	96	0	50	0	0	0								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	152	197	0	0	301	214	96	0	50	0	0	0								
Added Vol:	0	7	0	0	13	13	37	0	0	0	0	0								
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0								
Initial Fut:	152	204	0	0	314	227	133	0	50	0	0	0								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92								
PHF Volume:	165	222	0	0	341	247	145	0	54	0	0	0								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	165	222	0	0	341	247	145	0	54	0	0	0								
Critical Gap Module:																				
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx								
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	588	xxxx	xxxxx	xxxx	xxxx	xxxxx	893	xxxx	341	xxxx	xxxx	xxxxx								
Potent Cap.:	987	xxxx	xxxxx	xxxx	xxxx	xxxxx	312	xxxx	701	xxxx	xxxx	xxxxx								
Move Cap.:	987	xxxx	xxxxx	xxxx	xxxx	xxxxx	268	xxxx	701	xxxx	xxxx	xxxxx								
Volume/Cap:	0.17	xxxx	xxxx	xxxx	xxxx	xxxx	0.54	xxxx	0.08	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	15.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	73.9	xxxx	6.3	xxxx	xxxx	xxxxx								
Control Del:	9.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	33.2	xxxx	10.6	xxxxx	xxxx	xxxxx								
LOS by Move:	A	*	*	*	*	*	D	*	B	*	*	*								
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	0.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	9.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx			xxxxxx			27.0			xxxxxx										
ApproachLOS:	*			*			D			*										

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HevVeh:	2%				2%				2%				2%			
Grade:	0%				0%				0%				0%			
Peds/Hour:	0				0				0				0			
Pedestrian Walk Speed: 4.00 feet/sec																
LaneWidth:	12 feet				12 feet				12 feet				12 feet			
Time Period: 0.25 hour																
Upstream Signals:																
Link Index:	#222				#188											
Dist(miles):	0.250				0.250											
Speed (mph):	1.00				1.00											
SignalIndex:	#23				#13											
Cycle Time:	100 secs				100 secs											
InitVolume:	535	84			50	19										
Saturation:	1410	1040			1769	1597										
ArrivalType:	4	4			4	4										
G/C:	0.35	0.23			0.05	0.07										
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection																
P:	0.465	0.311			0.063	0.098										
gq1:	20.30	5.57			2.65	1.07										
gq2:	20.78	0.67			0.10	0.02										
gq:	34.88	6.24			2.75	1.09										
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons																
alpha:	0.550				0.550											
beta:	0.645				0.645											
ta (secs):	900.000				900.000											
F:	0.003				0.003											
f:	0.625	1.000			1.000	1.000										
vcmax:	91	20			15	5										
vcg:	91	25			15	6										
vcmin:	1000	1000			1000	1000										
tp:	0.0	0.0			0.0	0.0										
p:	0.000				0.000											
*** Computation 3: Platoon Event Periods																
pdom/psubo:	0.000/0.000/Unconstrained															
*** Computation 4: Conflicting Flows During Each Unblocked Period																
InitCnflVol:	588	xxxxx	xxxxx	0	xxxxx	xxxxx	893	893	341	1044	1140	222				
AdjCnflVol:	588	xxxxx	xxxxx	0	xxxxx	xxxxx	893	893	341	1044	1140	222				
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000				
ConflictVol:	588	xxxxx	xxxxx	0	xxxxx	xxxxx	893	893	341	1044	1140	222				
*** Computation 5: Capacity for Subject Movement During Unblocked Period																
InitPotCap:	987	xxxxx	xxxxx	1623	xxxxx	xxxxx	312	281	701	207	201	818				
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000				
Potent Cap.:	987	xxxxx	xxxxx	1623	xxxxx	xxxxx	312	281	701	207	201	818				

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

Cycle (sec):	100	Critical Vol./Cap.(X):	0.340
Loss Time (sec):	12	Average Delay (sec/veh):	30.1
Optimal Cycle:	33	Level Of Service:	C

Street Name:	Holman Road							Lt. Col. Mark Taylor Street							
Approach:	North Bound				South Bound			East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R	L	- T	- R		L	- T	- R	
Control:	Protected				Protected			Protected				Protected			
Rights:	Include				Include			Include				Include			
Min. Green:	0	0	0		0	0	0	0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 2	0 1		1	0 3	0 1	1	0 1	0 1		1	0 0	1 0	
Volume Module:	AM Peak Hour														
Base Vol:	133	98	87		11	174	7	9	135	126		149	104	4	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	133	98	87		11	174	7	9	135	126		149	104	4	
Added Vol:	0	5	0		0	11	0	0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0	0	0	0		0	0	0	
Initial Fut:	133	103	87		11	185	7	9	135	126		149	104	4	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	145	112	95		12	201	8	10	147	137		162	113	4	
Reduct Vol:	0	0	0		0	0	0	0	0	0		0	0	0	
Reduced Vol:	145	112	95		12	201	8	10	147	137		162	113	4	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	145	112	95		12	201	8	10	147	137		162	113	4	
Saturation Flow Module:															
Sat/Lane:	1900	1900	1900		1900	1900	1900	1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.93	0.83		0.93	0.89	0.83	0.93	0.98	0.83		0.93	0.97	0.97	
Lanes:	1.00	2.00	1.00		1.00	3.00	1.00	1.00	1.00	1.00		1.00	0.96	0.04	
Final Sat.:	1769	3538	1583		1769	5083	1583	1769	1862	1583		1769	1782	69	
Capacity Analysis Module:															
Vol/Sat:	0.08	0.03	0.06		0.01	0.04	0.00	0.01	0.08	0.09		0.09	0.06	0.06	
Crit Moves:	****					****				****		****			
Green/Cycle:	0.24	0.32	0.32		0.04	0.12	0.12	0.04	0.25	0.25		0.27	0.48	0.48	
Volume/Cap:	0.34	0.10	0.19		0.19	0.34	0.04	0.13	0.31	0.34		0.34	0.13	0.13	
Delay/Veh:	31.9	23.9	24.7		48.2	41.0	39.3	47.0	30.6	30.9		29.8	14.4	14.4	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	31.9	23.9	24.7		48.2	41.0	39.3	47.0	30.6	30.9		29.8	14.4	14.4	
LOS by Move:	C	C	C		D	D	D	D	C	C		C	B	B	
HCM2k95thQ:	164	54	89		28	118	12	15	161	153		188	73	73	

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 2	0 1		1	0 3	0 1		1	0 1	0 1		1	0 0	1 0	
Lane Group:	L	T	R		L	T	R		L	T	R		L	RT	RT	
#LnsInGrps:	1	2	1		1	3	1		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.89	0.83		0.93	0.98	0.83		0.93	0.97	0.97	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.24	0.32	0.32	0.04	0.12	0.12	0.04	0.25	0.25	0.27	0.48	0.48
ArrivalType:		4			4			4			4	
ProgFactor:	0.92	0.85	0.86	0.99	0.97	0.96	0.99	0.91	0.92	0.91	0.71	0.71
Q1:	3.1	1.0	1.6	0.3	1.8	0.2	0.3	3.0	2.8	3.3	1.3	1.3
UpstreamVC:	0.18	0.18	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.99	0.99	0.99	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
EarlyArrAdj:	0.44	0.53	0.48	1.00	1.00	1.00	0.15	0.47	0.43	1.00	1.00	1.00
Q2:	0.2	0.1	0.1	0.2	0.5	0.0	0.0	0.2	0.2	0.5	0.2	0.2
HCM2KQueue:	3.3	1.0	1.7	0.5	2.3	0.2	0.3	3.2	3.1	3.8	1.4	1.4
70th%Factor:	1.19	1.20	1.20	1.20	1.19	1.20	1.20	1.19	1.19	1.19	1.20	1.20
HCM2k70thQ:	3.9	1.2	2.1	0.6	2.8	0.3	0.3	3.8	3.6	4.5	1.7	1.7
85th%Factor:	1.57	1.59	1.58	1.59	1.58	1.60	1.60	1.57	1.57	1.56	1.59	1.59
HCM2k85thQ:	5.2	1.6	2.8	0.9	3.7	0.4	0.5	5.1	4.8	5.9	2.3	2.3
90th%Factor:	1.74	1.78	1.77	1.79	1.76	1.80	1.79	1.74	1.74	1.73	1.77	1.77
HCM2k90thQ:	5.7	1.8	3.1	1.0	4.1	0.4	0.5	5.6	5.3	6.6	2.5	2.5
95th%Factor:	2.00	2.07	2.04	2.08	2.03	2.09	2.09	2.00	2.01	1.99	2.05	2.05
HCM2k95thQ:	6.6	2.1	3.6	1.1	4.7	0.5	0.6	6.4	6.1	7.5	2.9	2.9
98th%Factor:	2.48	2.62	2.57	2.66	2.54	2.68	2.68	2.48	2.49	2.45	2.60	2.60
HCM2k98thQ:	8.1	2.7	4.5	1.4	5.9	0.6	0.8	8.0	7.6	9.3	3.7	3.7

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.567
Loss Time (sec): 12 | Average Delay (sec/veh): 29.1
Optimal Cycle: 46 | Level Of Service: C

Street Name:	West Lane						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2 0 1	2	0	2 0 1	2	0	3 0 1	2	0	3 0 1
Volume Module: AM Peak Hour												
Base Vol:	80	450	242	354	656	32	67	90	67	243	62	212
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	80	450	242	354	656	32	67	90	67	243	62	212
Added Vol:	0	102	0	64	186	19	11	0	0	0	0	39
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	80	552	242	418	842	51	78	90	67	243	62	251
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	87	600	263	454	915	55	85	98	73	264	67	273
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	600	263	454	915	55	85	98	73	264	67	273
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	87	600	263	454	915	55	85	98	73	264	67	273
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	5083	1583	3432	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.17	0.17	0.13	0.26	0.04	0.02	0.02	0.05	0.08	0.01	0.17
Crit Moves:		****		****			****					****
Green/Cycle:	0.05	0.30	0.30	0.23	0.48	0.48	0.04	0.13	0.13	0.22	0.30	0.30
Volume/Cap:	0.53	0.57	0.56	0.57	0.53	0.07	0.57	0.15	0.35	0.35	0.04	0.57
Delay/Veh:	49.9	30.3	30.9	34.8	18.2	13.8	51.9	38.7	40.7	33.5	24.6	30.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.9	30.3	30.9	34.8	18.2	13.8	51.9	38.7	40.7	33.5	24.6	30.9
LOS by Move:	D	C	C	C	B	B	D	D	D	C	C	C
HCM2k95thQ:	110	380	327	320	391	34	113	53	117	176	24	338

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	0	1	2	0 2	0	1	2	0 3	0	1	2	0 3	0	1
Lane Group:	L	T		R	L	T		R	L	T		R	L	T		R
#LnsInGrps:	2	2		1	2	2		1	2	3		1	2	3		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Green/Cycle:	0.05	0.30	0.30		0.23	0.48	0.48		0.04	0.13	0.13		0.22	0.30	0.30	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.92	0.92		0.95	0.78	0.69		0.99	0.96	0.97		0.93	0.86	0.92	
Q1:		1.2	6.8	5.6	5.4	7.2	0.6		1.2	0.8	1.8		3.0	0.4	5.9	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:		1.0	1.3	1.2	1.2	1.1	0.1		1.0	0.2	0.5		0.5	0.0	1.3	
HCM2KQueue:		2.2	8.1	6.8	6.7	8.3	0.6		2.2	1.0	2.3		3.5	0.5	7.1	
70th%Factor:	1.19	1.18	1.18		1.18	1.18	1.20		1.19	1.20	1.19		1.19	1.20	1.18	
HCM2k70thQ:		2.6	9.5	8.1	7.9	9.9	0.8		2.7	1.2	2.8		4.2	0.6	8.4	
85th%Factor:	1.58	1.53	1.54		1.54	1.53	1.59		1.58	1.59	1.58		1.57	1.60	1.54	
HCM2k85thQ:		3.4	12.3	10.5	10.3	12.7	1.0		3.5	1.6	3.6		5.5	0.7	10.9	
90th%Factor:	1.76	1.67	1.68		1.69	1.66	1.79		1.76	1.78	1.76		1.74	1.79	1.68	
HCM2k90thQ:		3.8	13.5	11.5	11.3	13.9	1.2		3.9	1.8	4.1		6.1	0.8	11.9	
95th%Factor:	2.03	1.88	1.91		1.91	1.88	2.08		2.03	2.07	2.03		1.99	2.08	1.90	
HCM2k95thQ:		4.4	15.2	13.1	12.8	15.7	1.3		4.5	2.1	4.7		7.0	1.0	13.5	
98th%Factor:	2.55	2.24	2.29		2.30	2.23	2.65		2.54	2.62	2.54		2.46	2.67	2.28	
HCM2k98thQ:		5.5	18.1	15.7	15.4	18.6	1.7		5.7	2.7	5.9		8.7	1.2	16.2	

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.593
Loss Time (sec):	12	Average Delay (sec/veh):	35.0
Optimal Cycle:	48	Level Of Service:	D

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:	AM Peak Hour											
Base Vol:	236	112	116	319	215	181	143	585	171	182	500	191
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	236	112	116	319	215	181	143	585	171	182	500	191
Added Vol:	3	4	0	0	8	3	1	42	5	0	26	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	239	116	116	319	223	184	144	627	176	182	526	191
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	260	126	126	347	242	200	157	682	191	198	572	208
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	260	126	126	347	242	200	157	682	191	198	572	208
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	260	126	126	347	242	200	157	682	191	198	572	208
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.15	0.02	0.08	0.20	0.05	0.13	0.09	0.13	0.12	0.11	0.11	0.13
Crit Moves:			****	****				****		****		
Green/Cycle:	0.25	0.13	0.13	0.33	0.22	0.22	0.17	0.23	0.23	0.19	0.25	0.25
Volume/Cap:	0.59	0.18	0.59	0.59	0.22	0.59	0.53	0.59	0.53	0.59	0.45	0.53
Delay/Veh:	35.0	38.5	45.1	29.5	32.4	37.9	39.9	35.4	35.6	39.9	32.1	33.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.0	38.5	45.1	29.5	32.4	37.9	39.9	35.4	35.6	39.9	32.1	33.9
LOS by Move:	D	D	D	C	C	D	D	D	D	D	C	C
HCM2k95thQ:	313	59	178	377	101	257	239	345	268	244	231	236

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L - T - R						L - T - R						L - T - R						L - T - R					
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	1	3	1	1	3	1	1	3	1	1	3	1	1	3	1	1	3	1	1	3	1	1	3	1
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12												
CrsswalkWid:	8			8			8			8														
% Hev Veh:	2			2			2			2														
Grade:	0%			0%			0%			0%														
Parking/Hr:	No			No			No			No														
Bus Stp/Hr:	0			0			0			0														
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:	0			0			0			0														
ExclusiveRT:	Include			Include			Include			Include														
% RT Prtct:	0			0			0			0														
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx												
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98												
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00												
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00												
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85												
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx												
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83												
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
MLF Sat Adj:	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00												
Fnl Sat Adj:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83												
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.25	0.13	0.13	0.33	0.22	0.22	0.17	0.23	0.23	0.19	0.25	0.25
ArrivalType:		4			4			4			4	
ProgFactor:	0.94	0.96	0.98	0.91	0.92	0.95	0.96	0.95	0.95	0.96	0.93	0.94
Q1:	6.0	1.1	3.2	7.3	1.9	4.8	3.8	5.9	4.4	4.8	4.6	4.7
UpstreamVC:	0.49	0.49	0.49	0.34	0.34	0.34	0.00	0.00	0.00	0.90	0.90	0.90
UpstreamAdj:	0.87	0.87	0.87	0.95	0.95	0.95	0.00	0.00	0.00	0.30	0.30	0.30
EarlyArrAdj:	0.39	0.28	0.25	0.51	0.40	0.37	1.00	1.00	1.00	0.12	0.14	0.13
Q2:	0.5	0.1	0.4	0.7	0.1	0.5	1.1	1.4	1.1	0.2	0.1	0.1
HCM2KQueue:	6.5	1.2	3.6	8.0	2.0	5.3	4.9	7.3	5.5	5.0	4.7	4.8
70th%Factor:	1.18	1.20	1.19	1.18	1.20	1.19	1.19	1.18	1.19	1.19	1.19	1.19
HCM2k70thQ:	7.7	1.4	4.3	9.5	2.4	6.3	5.8	8.6	6.5	5.9	5.6	5.7
85th%Factor:	1.54	1.59	1.57	1.53	1.58	1.55	1.55	1.54	1.55	1.55	1.56	1.56
HCM2k85thQ:	10.1	1.8	5.6	12.3	3.2	8.2	7.6	11.2	8.5	7.8	7.3	7.5
90th%Factor:	1.69	1.78	1.73	1.67	1.76	1.71	1.71	1.68	1.70	1.71	1.72	1.71
HCM2k90thQ:	11.0	2.0	6.2	13.4	3.5	9.0	8.4	12.2	9.4	8.6	8.1	8.3
95th%Factor:	1.92	2.06	1.99	1.88	2.04	1.95	1.96	1.90	1.94	1.95	1.96	1.96
HCM2k95thQ:	12.5	2.4	7.1	15.1	4.1	10.3	9.6	13.8	10.7	9.8	9.2	9.4
98th%Factor:	2.31	2.62	2.46	2.24	2.56	2.37	2.39	2.27	2.35	2.38	2.40	2.39
HCM2k98thQ:	15.0	3.0	8.8	17.9	5.1	12.5	11.7	16.5	13.0	11.9	11.3	11.5

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 SR99 W Front & SB Ramps Morada

Average Delay (sec/veh): 7.7 Worst Case Level Of Service: D[31.5]

Street Name:	SR 99 West Frontage Rd						SR 99 SB Ramps (Morada Lane)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Volume Module:AM Peak Hour																					
Base Vol:	0	62	788	31	50	0	0	0	0	282	0	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	62	788	31	50	0	0	0	0	282	0	19
Added Vol:	0	0	42	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	62	830	31	50	0	0	0	0	282	0	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	67	902	34	54	0	0	0	0	307	0	21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	67	902	34	54	0	0	0	0	307	0	21
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	970	xxxx	xxxxx	xxxx	xxxx	xxxxx	640	xxxx	518
Potent Cap.:	xxxx	xxxx	xxxxx	711	xxxx	xxxxx	xxxx	xxxx	xxxxx	439	xxxx	557
Move Cap.:	xxxx	xxxx	xxxxx	711	xxxx	xxxxx	xxxx	xxxx	xxxxx	423	xxxx	557
Volume/Cap:	xxxx	xxxx	xxxx	0.05	xxxx	xxxx	xxxx	xxxx	xxxx	0.72	xxxx	0.04
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	3.7	xxxx	xxxxx	xxxx	xxxx	xxxxx	142	xxxx	2.9
Control Del:	xxxxx	xxxx	xxxxx	10.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	32.8	xxxx	11.7
LOS by Move:	*	*	*	B	*	*	*	*	*	D	*	B
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	10.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	B	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			31.5		
ApproachLOS:	*			*			*			D		

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #20 SR99 W Front & SB Ramps Morada

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:       #218             #183
Dist(miles):      0.250            0.250
Speed (mph):       1.00             1.00
SignalIndex:      #22              #12
Cycle Time:         100 secs         100 secs
InitVolume:   538    15        149    20
Saturation:  1769  1334       1769   871
ArrivalType:    4     4          4     4
G/C:         0.37  0.19       0.15  0.04
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:          0.487 0.256      0.196 0.055
gq1:        15.60  0.84       6.77  2.17
gq2:        10.63  0.01       0.86  0.07
gq:         26.23  0.85       7.63  2.24
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:            0.550            0.550
beta:             0.645            0.645
ta (secs):       900.000          900.000
F:                0.003            0.003
f:          1.000 1.000      0.521 1.000
vcmax:        139     4         22     6
vcg:          158     4         24     6
vcmin:       1000  1000       1000  1000
tp:           0.0   0.0        0.0   0.0
p:                0.000            0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx  970 xxxxx xxxxx  651  1091    54  640   640   518
AdjCnflVol:    0 xxxxx xxxxx  970 xxxxx xxxxx  651  1091    54  640   640   518
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx  970 xxxxx xxxxx  651  1091    54  640   640   518
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1623 xxxxx xxxxx  711 xxxxx xxxxx  382   215  1013  439   393   557
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1623 xxxxx xxxxx  711 xxxxx xxxxx  382   215  1013  439   393   557
```


EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #21 SR99 E Front & NB Ramps Morada

Average Delay (sec/veh): 15.9 Worst Case Level Of Service: F[66.0]

```
Street Name:      SR 99 East Frontage Rd         SR 99 NB Ramps (Morada Lane)
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  0  0    0  0  0  1  0    1  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:AM Peak Hour
Base Vol:     230  451     0     0  511     2    95    0   214     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  230  451     0     0  511     2    95    0   214     0    0     0
Added Vol:      0    0     0     0    0     0     0    0    26     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  230  451     0     0  511     2    95    0   240     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:   250  490     0     0  555     2   103    0   261     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:  250  490     0     0  555     2   103    0   261     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4 xxxx   6.2 xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  558 xxxx xxxxx  xxxx xxxx xxxxx  1547 xxxx   557  xxxx xxxx xxxxx
Potent Cap.: 1013 xxxx xxxxx  xxxx xxxx xxxxx   126 xxxx   530  xxxx xxxx xxxxx
Move Cap.:   1013 xxxx xxxxx  xxxx xxxx xxxxx    98 xxxx   530  xxxx xxxx xxxxx
Volume/Cap:  0.25 xxxx  xxxx  xxxx xxxx  xxxx  1.05 xxxx  0.49  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   24.3 xxxx xxxxx  xxxx xxxx xxxxx   164 xxxx  67.3  xxxx xxxx xxxxx
Control Del:  9.7 xxxx xxxxx xxxxx xxxx xxxxx 186.7 xxxx  18.2 xxxxx xxxx xxxxx
LOS by Move:    A    *     *     *    *     *     F    *     C     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:  1.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:  9.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     A    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx              66.0           xxxxxx
ApproachLOS:         *                *                 F                *
```

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #21 SR99 E Front & NB Ramps Morada

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------|----------------|----------------|----------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:       #222             #188
Dist(miles):      0.250            0.250
Speed (mph):       1.00             1.00
SignalIndex:      #23              #13
Cycle Time:         100 secs         100 secs
InitVolume:   535    84         50    19
Saturation:  1410  1040       1769  1597
ArrivalType:    4     4          4     4
G/C:         0.35  0.23       0.05  0.07
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:          0.465 0.311      0.063 0.098
gq1:        20.30  5.57       2.65  1.07
gq2:        20.78  0.67       0.10  0.02
gq:         34.88  6.24       2.75  1.09
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:            0.550            0.550
beta:             0.645            0.645
ta (secs):       900.000          900.000
F:                0.003            0.003
f:          1.000 1.000      1.000 1.000
vcmax:        146    20         15     5
vcg:          146    25         15     6
vcmin:       1000  1000       1000  1000
tp:           0.0   0.0        0.0   0.0
p:                0.000            0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol: 558 xxxxx xxxxx    0 xxxxx xxxxx 1547  1547   557 1677  1548   490
AdjCnflVol:  558 xxxxx xxxxx    0 xxxxx xxxxx 1547  1547   557 1677  1548   490
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol: 558 xxxxx xxxxx    0 xxxxx xxxxx 1547  1547   557 1677  1548   490
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1013 xxxxx xxxxx 1623 xxxxx xxxxx  126   114   530   75   114   578
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1013 xxxxx xxxxx 1623 xxxxx xxxxx  126   114   530   75   114   578
```


EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 West Ln & West Ln Frontage Rd

```
Cycle (sec):         100                Critical Vol./Cap.(X):         0.660
Loss Time (sec):       9                Average Delay (sec/veh):        20.5
Optimal Cycle:        47                Level Of Service:                  C
Street Name:            West Lane                  West Lane Frontage Road
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected         Permitted        Permitted
Rights:           Include          Include           Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        1  0  1  1  0    1  0  1  1  0    0  1  0  0  1    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:AM Peak Hour
Base Vol:     111  611    52    47  900    69   117   14   116   177   17     4
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  111  611    52    47  900    69   117   14   116   177   17     4
Added Vol:      0  102     0     0  186     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  111  713    52    47 1086    69   117   14   116   177   17     4
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:   121  775    57    51 1180    75   127   15   126   192   18     4
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  121  775    57    51 1180    75   127   15   126   192   18     4
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  121  775    57    51 1180    75   127   15   126   192   18     4
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.93 0.92  0.92  0.93 0.92  0.92  0.71 0.71  0.83  0.58 0.95  0.95
Lanes:       1.00 1.86  0.14  1.00 1.88  0.12  0.89 0.11  1.00  1.00 0.81  0.19
Final Sat.:  1769 3264   238  1769 3297   209  1199  143  1583  1104 1465   345
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.07 0.24  0.24  0.03 0.36  0.36  0.11 0.11  0.08  0.17 0.01  0.01
Crit Moves:  ****                ****                           ****
Green/Cycle: 0.10 0.58  0.58  0.07 0.54  0.54  0.26 0.26  0.26  0.26 0.26  0.26
Volume/Cap:  0.66 0.41  0.41  0.41 0.66  0.66  0.40 0.40  0.30  0.66 0.05  0.05
Delay/Veh:   51.7 11.9  11.9  46.7 17.2  17.2  31.0 31.0  29.8  38.3 27.5  27.5
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  51.7 11.9  11.9  46.7 17.2  17.2  31.0 31.0  29.8  38.3 27.5  27.5
LOS by Move:    D    B     B     D    B     B     C    C     C     D    C     C
HCM2k95thQ:   180  226   226   101  525   525   181  181   149   299   24    24
```

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        1  0  1  1  0    1  0  1  1  0    0  1  0  0  1    1  0  0  1  0
Lane Group:    L   RT     RT    L   RT     RT   LT   LT     R     L   RT     RT
#LnsInGrps:     1    2     2     1    2     2     1    1     1     1    1     1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:         8                8                8                8
% Hev Veh:           2                2                2                2
Grade:              0%               0%               0%               0%
Parking/Hr:         No               No               No               No
Bus Stp/Hr:          0                0                0                0
Area Type:    < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:         0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:          0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx     1 xxxx  xxxx     5    5  xxxx     2 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Hev Veh Adj: 0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
Grade Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Parking Adj: xxxx 1.00  1.00  xxxx 1.00  1.00  xxxx xxxx  1.00  xxxx 1.00  1.00
Bus Stp Adj: xxxx 1.00  1.00  xxxx 1.00  1.00  xxxx xxxx  1.00  xxxx 1.00  1.00
Area Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
RT Adj:      xxxx 0.99  0.99  xxxx 0.99  0.99  xxxx xxxx  0.85  xxxx 0.97  0.97
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.72 0.72 xxxxx  0.59 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.93 0.97  0.97  0.93 0.97  0.97  0.71 0.71  0.83  0.58 0.95  0.95
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 0.95  0.95  1.00 0.95  0.95  1.00 1.00  1.00  1.00 1.00  1.00
Fnl Sat Adj: 0.93 0.92  0.92  0.93 0.92  0.92  0.71 0.71  0.83  0.58 0.95  0.95
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > >
>
DelAdjFctr:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
```


EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North	South	East	West
Cycle Length, C:	xxxxxx	xxxxxx	100	100
Actual Green Time Per Lane Group, G:	xxxxxx	xxxxxx	25.40	25.40
Effective Green Time Per Lane Group, g:	xxxxxx	xxxxxx	26.40	26.40
Opposing Effective Green Time, go:	xxxxxx	xxxxxx	26.40	26.40
Number Of Opposing Lanes, No:	xxxxxx	xxxxxx	1	1
Number Of Lanes In Lane Group, N:	xxxxxx	xxxxxx	1	1
Adjusted Left-Turn Flow Rate, Vlt:	xxxxxx	xxxxxx	127	192
Proportion of Left Turns in Lane Group, Plt:	xxxxxx	xxxxxx	0.89	1.00
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	xxxxxx	xxxxxx	3.53	5.34
Adjusted Opposing Flow Rate, Vo:	xxxxxx	xxxxxx	23	142
Opposing Flow Per Lane Per Cycle, Volc:	xxxxxx	xxxxxx	0.64	3.94
Opposing Platoon Ratio, Rpo:	xxxxxx	xxxxxx	1.33	1.33
Lost Time Per Phase, tl:	xxxxxx	xxxxxx	3.00	3.00
Eff grn until arrival of left-turn car, gf:	xxxxxx	xxxxxx	0.00	0.00
Opposing Queue Ratio, qro:	xxxxxx	xxxxxx	0.65	0.65
Eff grn blocked by opposing queue, gq:	xxxxxx	xxxxxx	0.00	2.71
Eff grn while left turns filter thru, gu:	xxxxxx	xxxxxx	26.40	23.69
Max opposing cars arriving during gq-gf, n:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	0.86	0.79
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	0.89	1.00
Through-car Equivalents, el1:	xxxxxx	xxxxxx	1.43	1.51
Single Lane Through-car Equivalents, el2:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	xxxxxx	xxxxxx	0.14	0.15
Single Lane Left Turn Adjustment Factor, fm:	xxxxxx	xxxxxx	0.72	0.59
Left Turn Adjustment Factor, flt:	xxxxxx	xxxxxx	0.72	0.59

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.10	0.58	0.58	0.07	0.54	0.54	0.26	0.26	0.26	0.26	0.26	0.26
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.61	0.61	0.98	0.74	0.74	0.92	0.92	0.91	0.95	0.88	0.88
Q1:	3.2	4.1	4.1	1.3	9.7	9.7	3.0	3.0	2.5	4.5	0.4	0.4
UpstreamVC:	0.45	0.45	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.89	0.89	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.24	0.68	0.68	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.4	0.5	0.5	0.7	1.9	1.9	0.7	0.7	0.4	1.7	0.1	0.1
HCM2KQueue:	3.6	4.6	4.6	2.0	11.6	11.6	3.6	3.6	3.0	6.2	0.5	0.5
70th%Factor:	1.19	1.19	1.19	1.20	1.17	1.17	1.19	1.19	1.19	1.19	1.20	1.20
HCM2k70thQ:	4.3	5.5	5.5	2.4	13.6	13.6	4.3	4.3	3.5	7.4	0.6	0.6
85th%Factor:	1.57	1.56	1.56	1.58	1.50	1.50	1.57	1.57	1.57	1.54	1.60	1.60
HCM2k85thQ:	5.7	7.2	7.2	3.1	17.4	17.4	5.7	5.7	4.7	9.6	0.7	0.7
90th%Factor:	1.73	1.72	1.72	1.76	1.62	1.62	1.73	1.73	1.74	1.69	1.79	1.79
HCM2k90thQ:	6.3	7.9	7.9	3.5	18.8	18.8	6.3	6.3	5.2	10.5	0.8	0.8
95th%Factor:	1.99	1.96	1.96	2.04	1.82	1.82	1.99	1.99	2.01	1.92	2.08	2.08
HCM2k95thQ:	7.2	9.0	9.0	4.1	21.0	21.0	7.2	7.2	6.0	12.0	1.0	1.0
98th%Factor:	2.46	2.40	2.40	2.56	2.11	2.11	2.46	2.46	2.50	2.32	2.66	2.66
HCM2k98thQ:	8.9	11.1	11.1	5.1	24.4	24.4	8.9	8.9	7.4	14.4	1.2	1.2

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 West Lane & Knickerbocker Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.518
Loss Time (sec): 12 Average Delay (sec/veh): 23.8
Optimal Cycle: 42 Level Of Service: C

Street Name:	West Lane						Knickerbocker Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:	AM Peak Hour											
Base Vol:	24	681	78	124	995	48	70	56	39	192	88	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	24	681	78	124	995	48	70	56	39	192	88	30
Added Vol:	0	102	0	0	186	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	24	783	78	124	1181	48	70	56	39	192	88	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	26	851	85	135	1284	52	76	61	42	209	96	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	851	85	135	1284	52	76	61	42	209	96	33
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	26	851	85	135	1284	52	76	61	42	209	96	33
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.89	0.93	0.92	0.92	0.93	0.94	0.94
Lanes:	1.00	3.00	1.00	1.00	2.88	0.12	1.00	0.59	0.41	1.00	0.75	0.25
Final Sat.:	1769	5083	1583	1769	4855	197	1769	1030	717	1769	1336	455
Capacity Analysis Module:												
Vol/Sat:	0.01	0.17	0.05	0.08	0.26	0.26	0.04	0.06	0.06	0.12	0.07	0.07
Crit Moves:	****				****			****		****		
Green/Cycle:	0.03	0.37	0.37	0.17	0.51	0.51	0.13	0.11	0.11	0.23	0.21	0.21
Volume/Cap:	0.52	0.45	0.14	0.45	0.52	0.52	0.34	0.52	0.52	0.52	0.34	0.34
Delay/Veh:	57.1	24.0	21.1	38.5	16.5	16.5	40.6	44.1	44.1	35.0	33.8	33.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	57.1	24.0	21.1	38.5	16.5	16.5	40.6	44.1	44.1	35.0	33.8	33.8
LOS by Move:	E	C	C	D	B	B	D	D	D	D	C	C
HCM2k95thQ:	43	294	70	171	345	345	119	181	181	282	166	166

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0	3 0	1	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Lane Group:	L	T	R	L	RT	RT	L	RT	RT	L	RT	RT
#LnsInGrps:	1	3	1	1	3	3	1	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:		8			8			8			8	
% Hev Veh:		2			2			2			2	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:		Include			Include			Include			Include	
% RT Prtct:		0			0			0			0	
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	1.00	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	0.99	0.99	xxxx	0.94	0.94	xxxx	0.96	0.96
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.97	0.97	0.93	0.92	0.92	0.93	0.94	0.94
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.93	0.89	0.83	0.93	0.89	0.89	0.93	0.92	0.92	0.93	0.94	0.94
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

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EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.03	0.37	0.37	0.17	0.51	0.51	0.13	0.11	0.11	0.23	0.21	0.21
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.86	0.82	0.96	0.74	0.74	0.97	0.98	0.98	0.94	0.93	0.93
Q1:		0.7	5.6	1.3	3.2	6.7	6.7	1.9	2.6	2.6	4.8	2.8	2.8
UpstreamVC:	0.34	0.34	0.34	0.66	0.66	0.66	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.95	0.95	0.95	0.70	0.70	0.70	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.12	0.56	0.51	0.25	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00
Q2:		0.1	0.5	0.1	0.2	0.5	0.5	0.5	1.0	1.0	0.5	0.5
HCM2KQueue:		0.8	6.1	1.4	3.4	7.3	7.3	2.4	3.6	3.6	5.8	3.3	3.3
70th%Factor:	1.20	1.19	1.20	1.19	1.18	1.18	1.19	1.19	1.19	1.19	1.19	1.19
HCM2k70thQ:		1.0	7.2	1.6	4.1	8.6	8.6	2.8	4.3	4.3	6.9	4.0	4.0
85th%Factor:	1.59	1.54	1.59	1.57	1.54	1.54	1.58	1.57	1.57	1.55	1.57	1.57
HCM2k85thQ:		1.3	9.4	2.2	5.4	11.1	11.1	3.7	5.7	5.7	9.0	5.2	5.2
90th%Factor:	1.78	1.69	1.77	1.74	1.68	1.68	1.76	1.73	1.73	1.70	1.74	1.74
HCM2k90thQ:		1.5	10.3	2.4	6.0	12.2	12.2	4.1	6.3	6.3	9.9	5.8	5.8
95th%Factor:	2.07	1.93	2.06	2.00	1.90	1.90	2.03	1.99	1.99	1.93	2.00	2.00
HCM2k95thQ:		1.7	11.8	2.8	6.9	13.8	13.8	4.8	7.2	7.2	11.3	6.6	6.6
98th%Factor:	2.64	2.33	2.60	2.47	2.27	2.27	2.53	2.46	2.46	2.34	2.47	2.47
HCM2k98thQ:		2.2	14.2	3.6	8.5	16.5	16.5	6.0	8.9	8.9	13.6	8.2	8.2

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EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.588
Loss Time (sec): 12 | Average Delay (sec/veh): 32.7
Optimal Cycle: 47 | Level Of Service: C

Street Name:	West Lane						Hammer Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	4 0	1	2 0	4 0	1	2 0	4 0	1	2 0	4 0	1
Volume Module:	AM Peak Hour											
Base Vol:	217	458	119	168	917	196	311	843	219	383	654	59
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	217	458	119	168	917	196	311	843	219	383	654	59
Added Vol:	0	102	0	0	186	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	217	560	119	168	1103	196	311	843	219	383	654	59
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	236	609	129	183	1199	213	338	916	238	416	711	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	236	609	129	183	1199	213	338	916	238	416	711	64
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	236	609	129	183	1199	213	338	916	238	416	711	64
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.07	0.09	0.08	0.05	0.18	0.13	0.10	0.14	0.15	0.12	0.10	0.04
Crit Moves:	****				****				****	****		
Green/Cycle:	0.12	0.26	0.26	0.16	0.30	0.30	0.22	0.26	0.26	0.21	0.24	0.24
Volume/Cap:	0.59	0.34	0.31	0.34	0.59	0.45	0.44	0.53	0.59	0.59	0.44	0.17
Delay/Veh:	44.1	30.0	30.1	38.1	30.1	28.9	33.8	32.3	34.8	37.1	32.6	30.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.1	30.0	30.1	38.1	30.1	28.9	33.8	32.3	34.8	37.1	32.6	30.4
LOS by Move:	D	C	C	D	C	C	C	C	C	D	C	C
HCM2k95thQ:	217	195	154	120	368	228	229	321	324	276	228	70

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2 0	4 0	1	2 0	4 0	1	2 0	4 0	1	2 0	4 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	4	1	2	4	1	2	4	1	2	4	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Fnl Sat Adj:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.12	0.26	0.26	0.16	0.30	0.30	0.22	0.26	0.26	0.21	0.24	0.24
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.91	0.91	0.96	0.92	0.90	0.94	0.93	0.94	0.96	0.93	0.91
Q1:	3.1	3.4	2.6	2.2	7.2	4.3	3.9	5.6	5.4	5.2	4.3	1.3
UpstreamVC:	0.00	0.00	0.00	0.52	0.52	0.52	0.00	0.00	0.00	0.29	0.29	0.29
UpstreamAdj:	0.00	0.00	0.00	0.84	0.84	0.84	0.00	0.00	0.00	0.97	0.97	0.97
EarlyArrAdj:	1.00	1.00	1.00	0.29	0.44	0.40	1.00	1.00	1.00	0.39	0.44	0.40
Q2:	1.3	0.5	0.4	0.1	0.6	0.3	0.8	1.1	1.3	0.5	0.3	0.1
HCM2KQueue:	4.4	3.9	3.1	2.4	7.8	4.6	4.7	6.7	6.8	5.7	4.6	1.4
70th%Factor:	1.19	1.19	1.19	1.19	1.18	1.19	1.19	1.18	1.18	1.19	1.19	1.20
HCM2k70thQ:	5.2	4.7	3.7	2.8	9.2	5.5	5.6	7.9	8.0	6.8	5.5	1.6
85th%Factor:	1.56	1.56	1.57	1.58	1.53	1.56	1.56	1.54	1.54	1.55	1.56	1.59
HCM2k85thQ:	6.9	6.2	4.8	3.8	11.9	7.2	7.3	10.3	10.5	8.8	7.2	2.2
90th%Factor:	1.72	1.73	1.74	1.76	1.67	1.72	1.72	1.69	1.68	1.70	1.72	1.77
HCM2k90thQ:	7.6	6.8	5.3	4.2	13.0	8.0	8.0	11.3	11.4	9.7	8.0	2.4
95th%Factor:	1.97	1.98	2.01	2.03	1.89	1.96	1.96	1.91	1.91	1.94	1.96	2.06
HCM2k95thQ:	8.7	7.8	6.2	4.8	14.7	9.1	9.2	12.8	13.0	11.0	9.1	2.8
98th%Factor:	2.41	2.44	2.49	2.53	2.25	2.40	2.40	2.30	2.29	2.35	2.40	2.60
HCM2k98thQ:	10.6	9.6	7.6	6.0	17.5	11.1	11.2	15.4	15.6	13.4	11.1	3.6

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.879
Loss Time (sec):	12	Average Delay (sec/veh):	38.1
Optimal Cycle:	101	Level Of Service:	D

Street Name:	Hammer Lane						Holman Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	3 0	1	2 0	3 1	0	2 0	3 1	0
Volume Module:	AM Peak Hour											
Base Vol:	466	393	241	97	657	92	129	777	412	645	696	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	466	393	241	97	657	92	129	777	412	645	696	29
Added Vol:	0	7	0	0	13	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	466	400	241	97	670	92	129	777	412	645	696	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	507	435	262	105	728	100	140	845	448	701	757	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	507	435	262	105	728	100	140	845	448	701	757	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	507	435	262	105	728	100	140	845	448	701	757	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.84	0.84	0.90	0.89	0.83	0.90	0.85	0.85	0.90	0.89	0.89
Lanes:	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.84	0.16
Final Sat.:	3432	3199	1600	3432	5083	1583	3432	4819	1606	3432	6468	269
Capacity Analysis Module:												
Vol/Sat:	0.15	0.14	0.16	0.03	0.14	0.06	0.04	0.18	0.28	0.20	0.12	0.12
Crit Moves:	****				****				****	****		
Green/Cycle:	0.17	0.28	0.28	0.05	0.16	0.16	0.14	0.32	0.32	0.23	0.41	0.41
Volume/Cap:	0.88	0.49	0.59	0.59	0.88	0.39	0.29	0.55	0.88	0.88	0.29	0.29
Delay/Veh:	55.1	30.4	31.9	51.4	51.6	38.4	38.7	28.6	38.8	48.1	20.0	20.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	55.1	30.4	31.9	51.4	51.6	38.4	38.7	28.6	38.8	48.1	20.0	20.0
LOS by Move:	E	C	C	D	D	D	D	C	D	D	B	B
HCM2k95thQ:	498	290	368	87	420	130	93	334	661	615	182	182

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	1	0	2	0 3	0	1	2	0 3	1	0	2	0 3	1	0
Lane Group:	L	RT		RT	L	T		R	L	RT		RT	L	RT		RT
#LnsInGrps:	2	3		3	2	3		1	2	4		4	2	4		4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.94	0.94		xxxx	xxxx	0.85		xxxx	0.95	0.95		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.93	0.93		0.93	0.98	0.83		0.93	0.93	0.93		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	0.91		0.97	0.91	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.84	0.84		0.90	0.89	0.83		0.90	0.85	0.85		0.90	0.89	0.89	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Proj Alt AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.17	0.28	0.28		0.05	0.16	0.16		0.14	0.32	0.32		0.23	0.41	0.41	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.92	0.93		0.99	0.99	0.96		0.96	0.91	0.97		0.98	0.81	0.81	
Q1:	7.0	5.1	6.4		1.5	7.2	2.4		1.7	6.5	12.6		9.5	3.3	3.3	
UpstreamVC:	0.00	0.00	0.00		0.22	0.22	0.22		0.53	0.53	0.53		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.98	0.98	0.98		0.84	0.84	0.84		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		0.17	0.35	0.32		0.27	0.43	0.43		1.00	1.00	1.00	
Q2:	3.9	0.9	1.4		0.2	1.8	0.2		0.1	0.5	2.5		4.3	0.4	0.4	
HCM2KQueue:	10.9	6.0	7.8		1.7	9.0	2.6		1.8	7.0	15.0		13.8	3.7	3.7	
70th%Factor:	1.18	1.19	1.18		1.20	1.18	1.19		1.20	1.18	1.17		1.17	1.19	1.19	
HCM2k70thQ:	12.8	7.1	9.2		2.0	10.6	3.1		2.2	8.3	17.5		16.2	4.4	4.4	
85th%Factor:	1.51	1.55	1.53		1.58	1.52	1.58		1.58	1.54	1.48		1.49	1.57	1.57	
HCM2k85thQ:	16.5	9.3	11.9		2.7	13.7	4.1		2.9	10.8	22.2		20.6	5.7	5.7	
90th%Factor:	1.63	1.70	1.67		1.77	1.65	1.75		1.77	1.68	1.59		1.60	1.73	1.73	
HCM2k90thQ:	17.8	10.2	13.0		3.0	14.9	4.5		3.2	11.8	23.9		22.1	6.3	6.3	
95th%Factor:	1.83	1.93	1.89		2.05	1.86	2.02		2.04	1.91	1.76		1.78	1.99	1.99	
HCM2k95thQ:	19.9	11.6	14.7		3.5	16.8	5.2		3.7	13.4	26.4		24.6	7.3	7.3	
98th%Factor:	2.13	2.33	2.25		2.58	2.20	2.52		2.57	2.28	2.02		2.05	2.45	2.45	
HCM2k98thQ:	23.3	14.0	17.5		4.4	19.8	6.5		4.7	16.0	30.3		28.3	9.0	9.0	

EPAP + Reduce Proj Alt AM Pk Hr

Future Queue Length Report (feet)

Node	Intersection	Northbound L	Northbound --	Northbound T	Northbound --	Northbound R	Southbound L	Southbound --	Southbound T	Southbound --	Southbound R	Eastbound L	Eastbound --	Eastbound T	Eastbound --	Eastbound R	Westbound L	Westbound --	Westbound T	Westbound --	Westbound R
#3	[HCM2k95thQ]:	911		38		95	19		629		629	368		652		349	153		1097		1097
#4	[HCM2k95thQ]:	493		125		181	30		465		465	167		732		732	359		468		5
#5	[HCM2k95thQ]:	104		350		851	238		604		116	184		1037		21	766		453		54
#6	[HCM2k95thQ]:	30		391		391	338		283		283	358		358		358	385		385		385
#7	[HCM2k95thQ]:	48		48		48	108		108		108	23		58		0	35		54		54
#8	[HCM2k95thQ]:	844		156		116	73		595		454	341		495		1086	382		445		23
#9	[2Way95thQ]:	xxxx		xxxx		xxxx	13.5		xxxx		1.2	0.7		xxxx		xxxx	xxxx		xxxx		xxxx
#10	[HCM2k95thQ]:	109		0		130	34		0		44	9		58		58	69		22		22
#11	[HCM2k95thQ]:	59		0		0	10		0		70	96		28		2	0		91		1
#14	[2Way95thQ]:	xxxx		xxxx		xxxx	33.6		33.6		xxxx	xxxx		xxxx		xxxx	8.4		xxxx		37.9
#15	[2Way95thQ]:	15.0		15.0		xxxx	xxxx		xxxx		xxxx	73.9		xxxx		6.3	xxxx		xxxx		xxxx
#17	[HCM2k95thQ]:	164		54		89	28		118		12	15		161		153	188		73		73
#18	[HCM2k95thQ]:	110		380		327	320		391		34	113		53		117	176		24		338
#19	[HCM2k95thQ]:	313		59		178	377		101		257	239		345		268	244		231		236
#20	[2Way95thQ]:	xxxx		xxxx		xxxx	3.7		3.7		xxxx	xxxx		xxxx		xxxx	142		xxxx		2.9
#21	[2Way95thQ]:	24.3		24.3		xxxx	xxxx		xxxx		xxxx	164		xxxx		67.3	xxxx		xxxx		xxxx
#24	[HCM2k95thQ]:	180		226		226	101		525		525	181		181		149	299		24		24
#25	[HCM2k95thQ]:	43		294		70	171		345		345	119		181		181	282		166		166
#26	[HCM2k95thQ]:	217		195		154	120		368		228	229		321		324	276		228		70
#27	[HCM2k95thQ]:	498		290		368	87		420		130	93		334		661	615		182		182

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EPAP + Reduce Proj Alt PM Pk Hr

Scenario Report

Scenario:	EPAP + Red Proj Alt PM
Command:	EPAP + Red Proj Alt PM
Volume:	EPAP PM
Geometry:	EPAP Proj
Impact Fee:	Default Impact Fee
Trip Generation:	PM Pk Hr
Trip Distribution:	EPAP PM
Paths:	EPAP Proj
Routes:	Default Route
Configuration:	Default Configuration

EPAP + Reduce Proj Alt PM Pk Hr

Trip Generation Report

Forecast for PM Pk Hr

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Village West	725.00	ElemSchStudent	0.07	0.08	51	58	109	12.2
1	Village West	0.00	Tra Vigne SFDU	0.51	0.30	0	0	0	0.0
1	Village West	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
1	Village West	0.00	GP Alt Com KSF	2.63	2.85	0	0	0	0.0
1	Village West	613.00	Red Proj SFDU	0.53	0.31	325	190	515	57.4
1	Village West	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
1	Village West	0.00	GP Alt MFDU	0.41	0.22	0	0	0	0.0
1	Village West	0.00	Tra V Internal	-64.00	-64.00	0	0	0	0.0
1	Village West	0.00	GP Alt Interna	-76.00	-76.00	0	0	0	0.0
1	Village West	0.00	GP Alt Pass-By	-106.00	-111.00	0	0	0	0
	Zone 1 Subtotal					376	248	624	69.6
2	Village East	0.00	Tra Vigne SFDU	0.51	0.30	0	0	0	0.0
2	Village East	0.00	GP Alt SFDU	0.48	0.28	0	0	0	0.0
2	Village East	325.00	Red Proj SFDU	0.53	0.31	172	101	273	30.4
2	Village East	0.00	Red Dens SFDU	0.52	0.31	0	0	0	0.0
	Zone 2 Subtotal					172	101	273	30.4
TOTAL						548	349	897	100.0

EPAP + Reduce Proj Alt PM Pk Hr

Trip Distribution Report

Percent Of Trips EPAP PM

Zone	To Gates 1	2	5	6	8	9	10	11	14	15	16
1	2.0	1.0	2.0	4.0	7.0	2.0	3.0	3.0	1.0	3.0	8.0
2	2.0	1.0	2.0	4.0	7.0	2.0	3.0	3.0	1.0	3.0	8.0

Zone	To Gates 17	18	19	20	22	23
1	2.0	3.0	32.0	5.0	2.0	20.0
2	2.0	3.0	32.0	5.0	2.0	20.0

EPAP + Reduce Proj Alt PM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in D/V
# 3 Eight Mile Rd & Thornton Rd	D	42.4	0.915	D	43.1	0.934	+ 0.656
# 4 Eight Mile Rd & Davis Rd	C	29.0	0.812	C	29.7	0.832	+ 0.714
# 5 Eight Mile & Lower Sacto Rd	D	41.4	0.918	D	50.0	0.999	+ 8.642
# 6 West Lane & Armstrong Road	C	33.0	0.721	C	33.0	0.726	+ 0.021
# 7 West Lane & Ham Lane	A	4.2	0.254	A	4.2	0.259	-0.019
# 8 Eight Mile Rd & West Ln	E	55.2	1.014	E	64.8	1.049	+ 9.618
# 9 Eight Mile Road & Ham Lane	C	22.5	0.099	D	30.4	0.150	+ 7.891
# 10 Eight Mile & Leach Rd/St J	A	1.3	0.304	A	8.4	0.377	+ 7.113
# 11 Eight Mile & MickeGrove/Holman	A	2.7	0.317	A	8.1	0.418	+ 5.350
# 14 SR99 W Front & SB Ramps 8 Mile	B	11.8	0.374	B	12.2	0.387	+ 0.339
# 15 SR99 E Front & NB Ramps 8 Mile	C	24.8	0.658	E	38.8	0.837	+13.985
# 17 Holman & Lt Col Mark Taylor	C	29.1	0.412	C	29.2	0.412	+ 0.022
# 18 Morada Lane & West Lane	C	26.3	0.500	C	27.2	0.621	+ 0.832
# 19 Morada Lane & Holman Road	C	32.1	0.514	C	32.2	0.516	+ 0.085
# 20 SR99 W Front & SB Ramps Morada	C	23.3	0.693	C	24.4	0.706	+ 1.005
# 21 SR99 E Front & NB Ramps Morada	D	27.3	0.796	D	31.4	0.851	+ 4.039
# 24 West Ln & West Ln Frontage Rd	B	19.6	0.545	B	19.1	0.589	-0.505
# 25 West Lane & Knickerbocker Dr	C	24.8	0.540	C	23.7	0.583	-1.086
# 26 West Lane & Hammer Lane	D	35.8	0.728	D	35.7	0.728	-0.110
# 27 Hammer Lane & Holman Road	D	39.8	0.904	D	39.8	0.904	+ 0.005

EPAP + Reduce Proj Alt PM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 9 Eight Mile Road & Ham Lane	??? / ???	No / No
# 14 SR99 W Front & SB Ramps 8 Mile	??? / ???	No / No
# 15 SR99 E Front & NB Ramps 8 Mile	??? / ???	No / No
# 20 SR99 W Front & SB Ramps Morada	??? / ???	No / No
# 21 SR99 E Front & NB Ramps Morada	??? / ???	Yes / Yes

EPAP + Reduce Proj Alt PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #9 Eight Mile Road & Ham Lane

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0	1	0	0	0	1	0	2	0	0	0	1	1	0
Initial Vol:	0	0	0		14	0	13		6	855	0		0	991	20		
ApproachDel:	xxxxxx				30.4				xxxxxx				xxxxxx				

Approach[southbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=27]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1899]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + Reduce Proj Alt PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #9 Eight Mile Road & Ham Lane

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	1	0	0	0	1	1	0	2	0	0	0	0	1	1	0
Initial Vol:	0		0		0	14		0		13	6		855		0	0		991		20

Major Street Volume: 1872
Minor Approach Volume: 27
Minor Approach Volume Threshold: 104 [less than minimum of 150]

SIGNAL WARRANT DISCLAIMER
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EPAP + Reduce Proj Alt PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	112		7		302	143		0		0		0		0	26		0		329
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					12.2				

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.2]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=355]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=919]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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EPAP + Reduce Proj Alt PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	112			7	302	143			0	0		0		0	26		0	329	

Major Street Volume: 564
Minor Approach Volume: 355
Minor Approach Volume Threshold: 473

SIGNAL WARRANT DISCLAIMER
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EPAP + Reduce Proj Alt PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	60	234			0	0	204		180		338		0		50	0		0		0
ApproachDel:	xxxxxx					xxxxxx					38.8					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=4.2]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=388]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1066]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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EPAP + Reduce Proj Alt PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	60	234			0		0	204	180		338		0		50		0		0	0

Major Street Volume: 678
Minor Approach Volume: 388
Minor Approach Volume Threshold: 541

SIGNAL WARRANT DISCLAIMER
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EPAP + Reduce Proj Alt PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #20 SR99 W Front & SB Ramps Morada

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	73		315		30	101		0		0		0		0	372		0		16
ApproachDel:	xxxxxx					xxxxxx					xxxxxx						24.4			

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=2.6]
   FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=388]
   SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=907]
   SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Reduce Proj Alt PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #20 SR99 W Front & SB Ramps Morada

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0		73		315	30		101		0	0		0		0	372		0		16

Major Street Volume: 519
Minor Approach Volume: 388
Minor Approach Volume Threshold: 499

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Reduce Proj Alt PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #21 SR99 E Front & NB Ramps Morada

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0
Initial Vol:	190		223		0	0		262		13	120		0		585	0		0		0
ApproachDel:	xxxxxx					xxxxxx					31.4					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=6.1]
SUCCEED - Vehicle-hours >= 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=705]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1393]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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EPAP + Reduce Proj Alt PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #21 SR99 E Front & NB Ramps Morada

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0 0	0	0 0	0 1	0	1 0	0 0	1	0 0	0 0	0
Initial Vol:	190	223	0	0	262	13	120	0	585	0	0	0

Major Street Volume: 688
Minor Approach Volume: 705
Minor Approach Volume Threshold: 410

SIGNAL WARRANT DISCLAIMER
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EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.934
Loss Time (sec):	12	Average Delay (sec/veh):	43.1
Optimal Cycle:	128	Level Of Service:	D

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	0 1	0	1 0	2 0	1	1 0	1 1	0
Volume Module:PM Peak Hour												
Base Vol:	422	20	49	18	61	219	174	1454	583	73	1229	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	422	20	49	18	61	219	174	1454	583	73	1229	5
Added Vol:	0	0	5	0	0	0	0	33	0	3	21	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	422	20	54	18	61	219	174	1487	583	76	1250	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	459	22	59	20	66	238	189	1616	634	83	1359	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	459	22	59	20	66	238	189	1616	634	83	1359	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	459	22	59	20	66	238	189	1616	634	83	1359	5
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.87	0.87	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	2.00	1.00	1.00	1.00	0.22	0.78	1.00	2.00	1.00	1.00	1.99	0.01
Final Sat.:	3432	1862	1583	1769	358	1286	1769	3538	1583	1769	3520	14
Capacity Analysis Module:												
Vol/Sat:	0.13	0.01	0.04	0.01	0.19	0.19	0.11	0.46	0.40	0.05	0.39	0.39
Crit Moves:	****				****			****		****		
Green/Cycle:	0.14	0.26	0.26	0.08	0.20	0.20	0.12	0.49	0.49	0.05	0.42	0.42
Volume/Cap:	0.93	0.04	0.14	0.14	0.93	0.93	0.91	0.93	0.82	0.93	0.91	0.91
Delay/Veh:	67.6	27.5	28.4	43.4	72.7	72.7	83.3	34.0	28.7	121.4	36.2	36.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.6	27.5	28.4	43.4	72.7	72.7	83.3	34.0	28.7	121.4	36.2	36.2
LOS by Move:	E	C	C	D	E	E	F	C	C	F	D	D
HCM2k95thQ:	501	23	66	34	592	592	263	917	598	154	894	894

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 1	0 1		1	0 0	1 0		1	0 2	0 1		1	0 1	1 0	
Lane Group:	L	T	R		L	RT	RT		L	T	R		L	RT	RT	
#LnsInGrps:	2	1	1		1	1	1		1	2	1		1	2	2	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.88	0.88		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.87	0.87		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	0.95	
Fnl Sat Adj:	0.90	0.98	0.83		0.93	0.87	0.87		0.93	0.93	0.83		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.14	0.26	0.26		0.08	0.20	0.20		0.12	0.49	0.49		0.05	0.42	0.42	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.88	0.89		0.98	0.99	0.99		1.00	0.95	0.88		1.00	0.96	0.96	
Q1:		6.5	0.4	1.1		0.5	8.3	8.3		5.2	21.0	13.1		2.3	18.0	18.0
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		1.00	1.00	1.00		0.69	0.69	0.69	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.09	0.09	0.09		0.67	0.67	0.67	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.03	0.06	0.06		0.11	0.42	0.42	
Q2:		4.5	0.0	0.2		0.2	5.0	5.0		0.2	0.8	0.3		0.8	3.3	3.3
HCM2KQueue:		11.0	0.4	1.3		0.7	13.2	13.2		5.4	21.9	13.4		3.1	21.2	21.2
70th%Factor:	1.18	1.20	1.20		1.20	1.17	1.17		1.19	1.16	1.17		1.19	1.16	1.16	
HCM2k70thQ:		12.9	0.5	1.5		0.8	15.5	15.5		6.4	25.3	15.7		3.7	24.6	24.6
85th%Factor:	1.51	1.60	1.59		1.59	1.49	1.49		1.55	1.44	1.49		1.57	1.45	1.45	
HCM2k85thQ:		16.5	0.7	2.0		1.0	19.8	19.8		8.4	31.6	20.0		4.8	30.8	30.8
90th%Factor:	1.63	1.79	1.78		1.79	1.61	1.61		1.71	1.53	1.60		1.74	1.54	1.54	
HCM2k90thQ:		17.9	0.8	2.3		1.2	21.3	21.3		9.2	33.5	21.5		5.3	32.7	32.7
95th%Factor:	1.83	2.09	2.06		2.08	1.79	1.79		1.94	1.68	1.78		2.01	1.68	1.68	
HCM2k95thQ:		20.0	0.9	2.6		1.4	23.7	23.7		10.5	36.7	23.9		6.2	35.8	35.8
98th%Factor:	2.13	2.67	2.61		2.65	2.06	2.06		2.36	1.89	2.06		2.49	1.90	1.90	
HCM2k98thQ:		23.4	1.2	3.3		1.7	27.3	27.3		12.8	41.2	27.6		7.6	40.3	40.3

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.832
Loss Time (sec):	12	Average Delay (sec/veh):	29.7
Optimal Cycle:	85	Level Of Service:	C

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	1	0	0	1	0	1	0	1	1	0	1	0	2	0	1
Volume Module:	PM Peak Hour											
Base Vol:	178	85	73	8	98	114	95	1081	265	72	1098	3
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	178	85	73	8	98	114	95	1081	265	72	1098	3
Added Vol:	0	0	16	0	0	0	0	38	0	10	24	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	178	85	89	8	98	114	95	1119	265	82	1122	3
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	193	92	97	9	107	124	103	1216	288	89	1220	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	193	92	97	9	107	124	103	1216	288	89	1220	3
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	193	92	97	9	107	124	103	1216	288	89	1220	3
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.90	0.90	0.93	0.90	0.90	0.93	0.93	0.83
Lanes:	1.00	1.00	1.00	1.00	0.46	0.54	1.00	1.62	0.38	1.00	2.00	1.00
Final Sat.:	1769	1862	1583	1769	791	920	1769	2777	658	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.11	0.05	0.06	0.00	0.13	0.13	0.06	0.44	0.44	0.05	0.34	0.00
Crit Moves:	****				****			****		****		
Green/Cycle:	0.13	0.27	0.27	0.02	0.16	0.16	0.08	0.53	0.53	0.06	0.50	0.50
Volume/Cap:	0.83	0.18	0.23	0.23	0.83	0.83	0.69	0.83	0.83	0.83	0.69	0.00
Delay/Veh:	64.2	28.1	28.5	51.0	59.5	59.5	57.0	23.4	23.4	86.4	20.1	12.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.2	28.1	28.5	51.0	59.5	59.5	57.0	23.4	23.4	86.4	20.1	12.4
LOS by Move:	E	C	C	D	E	E	E	C	C	F	C	B
HCM2k95thQ:	387	101	110	26	433	433	145	721	721	237	582	2

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	1	0 1	1	0	0	1 0	1	0	1	1 0	1	0	2	0 1
Lane Group:	L		T	R	L		RT	RT	L		RT	RT	L		T	R
#LnsInGrps:	1		1	1	1		1	1	1		2	2	1		2	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:			8				8				8				8	
% Hev Veh:			2				2				2				2	
Grade:			0%				0%				0%				0%	
Parking/Hr:			No				No				No				No	
Bus Stp/Hr:			0				0				0				0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:			0				0				0				0	
ExclusiveRT:			Include				Include				Include				Include	
% RT Prtct:			0				0				0				0	
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.92	0.92		xxxx	0.97	0.97		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.90	0.90		0.93	0.95	0.95		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	0.95		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	0.98	0.83		0.93	0.90	0.90		0.93	0.90	0.90		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.13	0.27	0.27	0.02	0.16	0.16	0.08	0.53	0.53	0.06	0.50	0.50
ArrivalType:		4			4			4			4	
ProgFactor:	0.99	0.89	0.90	0.99	0.99	0.99	0.99	0.85	0.85	1.00	0.81	0.67
Q1:	5.2	1.8	1.9	0.2	6.1	6.1	2.8	15.8	15.8	2.4	10.9	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.93	0.93	0.93	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	0.24	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.06	0.17	0.17	1.00	1.00	1.00
Q2:	3.1	0.2	0.3	0.3	3.2	3.2	0.1	0.8	0.8	2.4	2.1	0.0
HCM2KQueue:	8.2	2.0	2.2	0.5	9.3	9.3	2.9	16.6	16.6	4.8	13.0	0.0
70th%Factor:	1.18	1.20	1.19	1.20	1.18	1.18	1.19	1.17	1.17	1.19	1.17	1.20
HCM2k70thQ:	9.7	2.4	2.6	0.6	11.0	11.0	3.4	19.3	19.3	5.8	15.2	0.0
85th%Factor:	1.53	1.58	1.58	1.59	1.52	1.52	1.57	1.47	1.47	1.56	1.49	1.60
HCM2k85thQ:	12.6	3.1	3.4	0.8	14.2	14.2	4.5	24.4	24.4	7.5	19.4	0.1
90th%Factor:	1.66	1.76	1.76	1.79	1.65	1.65	1.75	1.57	1.57	1.71	1.61	1.80
HCM2k90thQ:	13.7	3.5	3.8	0.9	15.4	15.4	5.0	26.1	26.1	8.3	20.9	0.1
95th%Factor:	1.88	2.04	2.03	2.08	1.86	1.86	2.01	1.74	1.74	1.96	1.79	2.10
HCM2k95thQ:	15.5	4.0	4.4	1.1	17.3	17.3	5.8	28.9	28.9	9.5	23.3	0.1
98th%Factor:	2.23	2.56	2.55	2.66	2.19	2.19	2.50	1.98	1.98	2.39	2.07	2.70
HCM2k98thQ:	18.4	5.1	5.5	1.3	20.4	20.4	7.2	32.8	32.8	11.6	26.9	0.1

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.999
Loss Time (sec):	12	Average Delay (sec/veh):	50.0
Optimal Cycle:	180	Level Of Service:	D

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:	PM Peak Hour											
Base Vol:	49	372	339	61	334	112	98	1001	22	375	1111	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	49	372	339	61	334	112	98	1001	22	375	1111	42
Added Vol:	0	0	44	11	0	0	0	55	0	28	35	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	49	372	383	72	334	112	98	1056	22	403	1146	49
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	53	404	416	78	363	122	107	1148	24	438	1246	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	53	404	416	78	363	122	107	1148	24	438	1246	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	53	404	416	78	363	122	107	1148	24	438	1246	53
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.98	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3432	1862	1583	1769	1862	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.02	0.22	0.26	0.04	0.19	0.08	0.06	0.32	0.02	0.25	0.35	0.03
Crit Moves:			****	****				****		****		
Green/Cycle:	0.02	0.26	0.26	0.04	0.28	0.28	0.08	0.32	0.32	0.25	0.49	0.49
Volume/Cap:	0.68	0.82	1.00	1.00	0.68	0.27	0.72	1.00	0.05	1.00	0.72	0.07
Delay/Veh:	70.9	45.6	80.7	149.2	35.5	28.0	60.5	60.1	23.2	80.4	21.7	13.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	70.9	45.6	80.7	149.2	35.5	28.0	60.5	60.1	23.2	80.4	21.7	13.6
LOS by Move:	E	D	F	F	D	C	E	E	C	F	C	B
HCM2k95thQ:	101	614	803	258	479	136	233	1047	23	832	635	32

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

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Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        2  0  1  0  1    1  0  1  0  1    1  0  2  0  1    1  0  2  0  1
Lane Group:    L    T     R     L    T     R     L    T     R     L    T     R
#LnsInGrps:     2    1     1     1    1     1     1    2     1     1    2     1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:          8                8                8                8
% Hev Veh:            2                2                2                2
Grade:               0%               0%               0%               0%
Parking/Hr:          No               No               No               No
Bus Stp/Hr:           0                0                0                0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:          0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:           0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Hev Veh Adj: 0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
Grade Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Parking Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00
Bus Stp Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00
Area Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
RT Adj:      xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx xxxx  0.85
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.93 0.98  0.83  0.93 0.98  0.83  0.93 0.98  0.83  0.93 0.98  0.83
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 0.97 1.00  1.00  1.00 1.00  1.00  1.00 0.95  1.00  1.00 0.95  1.00
Fnl Sat Adj: 0.90 0.98  0.83  0.93 0.98  0.83  0.93 0.93  0.83  0.93 0.93  0.83
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < < < No  > > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
```


EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Green/Cycle: 0.02 0.26  0.26  0.04 0.28  0.28  0.08 0.32  0.32  0.25 0.49  0.49
ArrivalType:         4                4                4                4
ProgFactor:  1.00 0.97  1.00  1.00 0.94  0.89  0.99 1.00  0.84  1.00 0.83  0.69
Q1:           0.8 10.3  11.6   2.2  8.5   2.3   2.9 16.8   0.4  12.2 12.0   0.5
UpstreamVC:  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00
UpstreamAdj: 0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00
EarlyArrAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Q2:           1.2  3.5   7.2   3.1  2.0   0.4   1.9  8.7   0.0   7.4  2.4   0.1
HCM2KQueue:   2.0 13.8  18.8   5.3 10.4   2.7   4.7 25.4   0.4  19.5 14.3   0.6
------------|---------------||---------------||---------------||---------------|
70th%Factor: 1.20 1.17  1.16  1.19 1.18  1.19  1.19 1.15  1.20  1.16 1.17  1.20
HCM2k70thQ:   2.4 16.2  21.8   6.3 12.3   3.2   5.6 29.3   0.5  22.7 16.8   0.7
------------|---------------||---------------||---------------||---------------|
85th%Factor: 1.58 1.49  1.46  1.55 1.51  1.57  1.56 1.43  1.60  1.46 1.49  1.59
HCM2k85thQ:   3.1 20.6  27.4   8.2 15.8   4.3   7.4 36.3   0.7  28.5 21.3   1.0
------------|---------------||---------------||---------------||---------------|
90th%Factor: 1.76 1.60  1.56  1.71 1.64  1.75  1.72 1.51  1.79  1.55 1.60  1.79
HCM2k90thQ:   3.5 22.1  29.2   9.0 17.1   4.7   8.1 38.5   0.8  30.3 22.9   1.1
------------|---------------||---------------||---------------||---------------|
95th%Factor: 2.04 1.78  1.71  1.95 1.84  2.02  1.96 1.65  2.09  1.70 1.77  2.08
HCM2k95thQ:   4.0 24.6  32.1  10.3 19.2   5.5   9.3 41.9   0.9  33.3 25.4   1.3
------------|---------------||---------------||---------------||---------------|
98th%Factor: 2.56 2.05  1.94  2.37 2.15  2.51  2.39 1.84  2.67  1.92 2.03  2.65
HCM2k98thQ:   5.1 28.2  36.3  12.5 22.4   6.8  11.4 46.8   1.2  37.6 29.1   1.6
```

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.726
Loss Time (sec):	12	Average Delay (sec/veh):	33.0
Optimal Cycle:	63	Level Of Service:	C

Street Name:	West Lane						Armstrong Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	0	1	1	0	0	0	1!	0	0	0	0	1!	0	0
Volume Module:PM Peak Hour												
Base Vol:	3	582	41	132	476	35	29	60	4	78	202	208
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	582	41	132	476	35	29	60	4	78	202	208
Added Vol:	0	14	0	0	22	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	596	41	132	498	35	29	60	4	78	202	208
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	3	648	45	143	541	38	32	65	4	85	220	226
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	648	45	143	541	38	32	65	4	85	220	226
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	648	45	143	541	38	32	65	4	85	220	226
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.92	0.92	0.93	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92
Lanes:	1.00	1.87	0.13	1.00	1.87	0.13	0.31	0.65	0.04	0.16	0.41	0.43
Final Sat.:	1769	3277	225	1769	3272	230	568	1176	78	278	720	742
Capacity Analysis Module:												
Vol/Sat:	0.00	0.20	0.20	0.08	0.17	0.17	0.06	0.06	0.06	0.30	0.30	0.30
Crit Moves:		****		****					****	****		
Green/Cycle:	0.00	0.27	0.27	0.11	0.38	0.38	0.08	0.08	0.08	0.42	0.42	0.42
Volume/Cap:	0.44	0.73	0.73	0.73	0.44	0.44	0.73	0.73	0.73	0.73	0.73	0.73
Delay/Veh:	85.5	35.8	35.8	55.6	23.3	23.3	62.5	62.5	62.5	27.9	27.9	27.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	85.5	35.8	35.8	55.6	23.3	23.3	62.5	62.5	62.5	27.9	27.9	27.9
LOS by Move:	F	D	D	E	C	C	E	E	E	C	C	C
HCM2k95thQ:	27	506	506	282	295	295	227	227	227	596	596	596

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	1	0	1	1	0		1	0	1	1	0		0	0	1!	0	0		0	0	1!	0	0	
Lane Group:	L		RT		RT		L		RT		RT		LTR		LTR		LTR		LTR		LTR		LTR	
#LnsInGrps:	1		2		2		1		2		2		1		1		1		1		1		1	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:			8						8						8						8			
% Hev Veh:			2						2						2						2			
Grade:			0%						0%						0%						0%			
Parking/Hr:			No						No						No						No			
Bus Stp/Hr:			0						0						0						0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0						0						0						0			
ExclusiveRT:			Include						Include						Include						Include			
% RT Prtct:			0						0						0						0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx		xxxx			1	xxxx		xxxx			4		4		4		4		4		4	
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
Hev Veh Adj:	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98	0.98	0.98		0.98		0.98
Grade Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
Parking Adj:	xxxx	1.00		1.00		xxxx	xxxx	1.00		1.00		xxxx	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
Bus Stp Adj:	xxxx	1.00		1.00		xxxx	xxxx	1.00		1.00		xxxx	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
Area Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
RT Adj:	xxxx	0.99		0.99		xxxx	0.99	0.99		0.99		xxxx	0.99	0.99		0.99		0.99	0.94	0.94		0.94		0.94
LT Adj:	0.95	xxxx		xxxxx		0.95	xxxx	xxxxx				0.95	0.99	0.99		0.99		0.99	0.99	0.99		0.99		0.99
PedBike Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
HCM Sat Adj:	0.93	0.97		0.97		0.93	0.97	0.97		0.96		0.96	0.96	0.96		0.96		0.96	0.92	0.92		0.92		0.92
Usr Sat Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
MLF Sat Adj:	1.00	0.95		0.95		1.00	0.95	0.95		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00
Fnl Sat Adj:	0.93	0.92		0.92		0.93	0.92	0.92		0.96		0.96	0.96	0.96		0.96		0.96	0.92	0.92		0.92		0.92
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00		1.00		1.00

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.00	0.27	0.27	0.11	0.38	0.38	0.08	0.08	0.08	0.42	0.42	0.42
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.95	0.95	0.99	0.85	0.85	0.99	0.99	0.99	0.89	0.89	0.89
Q1:	0.1	8.8	8.8	3.8	5.4	5.4	2.7	2.7	2.7	10.9	10.9	10.9
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.4	2.3	2.3	2.0	0.8	0.8	1.9	1.9	1.9	2.4	2.4	2.4
HCM2KQueue:	0.5	11.1	11.1	5.8	6.1	6.1	4.6	4.6	4.6	13.4	13.4	13.4
70th%Factor:	1.20	1.18	1.18	1.19	1.19	1.19	1.19	1.19	1.19	1.17	1.17	1.17
HCM2k70thQ:	0.6	13.0	13.0	6.9	7.3	7.3	5.5	5.5	5.5	15.6	15.6	15.6
85th%Factor:	1.59	1.51	1.51	1.55	1.54	1.54	1.56	1.56	1.56	1.49	1.49	1.49
HCM2k85thQ:	0.8	16.7	16.7	9.0	9.5	9.5	7.2	7.2	7.2	19.9	19.9	19.9
90th%Factor:	1.79	1.63	1.63	1.70	1.69	1.69	1.72	1.72	1.72	1.61	1.61	1.61
HCM2k90thQ:	0.9	18.1	18.1	9.9	10.4	10.4	7.9	7.9	7.9	21.4	21.4	21.4
95th%Factor:	2.08	1.82	1.82	1.93	1.93	1.93	1.96	1.96	1.96	1.79	1.79	1.79
HCM2k95thQ:	1.1	20.2	20.2	11.3	11.8	11.8	9.1	9.1	9.1	23.8	23.8	23.8
98th%Factor:	2.66	2.13	2.13	2.34	2.32	2.32	2.40	2.40	2.40	2.06	2.06	2.06
HCM2k98thQ:	1.4	23.6	23.6	13.7	14.2	14.2	11.1	11.1	11.1	27.5	27.5	27.5

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec): 100 Critical Vol./Cap.(X): 0.259
Loss Time (sec): 9 Average Delay (sec/veh): 4.2
Optimal Cycle: 24 Level Of Service: A

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0 1	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Volume Module:	PM Peak Hour											
Base Vol:	0	2	21	18	0	1	5	669	0	16	545	45
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2	21	18	0	1	5	669	0	16	545	45
Added Vol:	0	0	0	0	0	0	0	14	0	1	21	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2	21	18	0	1	5	683	0	17	566	45
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	2	23	20	0	1	5	742	0	18	615	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2	23	20	0	1	5	742	0	18	615	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2	23	20	0	1	5	742	0	18	615	49
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.86	0.86	0.71	1.00	0.71	0.93	0.93	0.95	0.93	0.92	0.92
Lanes:	0.00	0.09	0.91	0.95	0.00	0.05	1.00	2.00	0.00	1.00	1.85	0.15
Final Sat.:	0	142	1491	1275	0	71	1769	3538	0	1769	3241	258
Capacity Analysis Module:												
Vol/Sat:	0.00	0.02	0.02	0.02	0.00	0.02	0.00	0.21	0.00	0.01	0.19	0.19
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.06	0.06	0.06	0.00	0.06	0.01	0.81	0.00	0.04	0.84	0.84
Volume/Cap:	0.00	0.26	0.26	0.26	0.00	0.26	0.23	0.26	0.00	0.26	0.23	0.23
Delay/Veh:	0.0	46.4	46.4	46.7	0.0	46.7	53.6	2.3	0.0	48.5	1.7	1.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	46.4	46.4	46.7	0.0	46.7	53.6	2.3	0.0	48.5	1.7	1.7
LOS by Move:	A	D	D	D	A	D	D	A	A	D	A	A
HCM2k95thQ:	0	51	51	45	0	45	21	18	0	43	15	15

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        0  0  0  1  0    0  0  1! 0  0    1  0  1  1  0    1  0  1  1  0
Lane Group:  xxxx  RT     RT   LTR  LTR   LTR    L   RT     RT    L   RT     RT
#LnsInGrps:     0    1     1     1    1     1     1    2     2     1    2     2
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:         8                8                8                8
% Hev Veh:           2                2                2                2
Grade:              0%               0%               0%               0%
Parking/Hr:         No               No               No               No
Bus Stp/Hr:          0                0                0                0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:         0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:          0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:  xxxx xxxx  xxxx     5 xxxx     5     1 xxxx  xxxx     1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  xxxx 1.00  1.00  1.00 xxxx  1.00  1.00 1.00 xxxxx  1.00 1.00  1.00
Hev Veh Adj: xxxx 0.98  0.98  0.98 xxxx  0.98  0.98 0.98 xxxxx  0.98 0.98  0.98
Grade Adj:   xxxx 1.00  1.00  1.00 xxxx  1.00  1.00 1.00 xxxxx  1.00 1.00  1.00
Parking Adj: xxxx 1.00  1.00  1.00 xxxx  1.00  xxxx 1.00 xxxxx  xxxx 1.00  1.00
Bus Stp Adj: xxxx 1.00  1.00  1.00 xxxx  1.00  xxxx 1.00 xxxxx  xxxx 1.00  1.00
Area Adj:    xxxx 1.00  1.00  1.00 xxxx  1.00  1.00 1.00 xxxxx  1.00 1.00  1.00
RT Adj:      xxxx 0.88  0.88  0.99 xxxx  0.99  xxxx xxxx xxxxx  xxxx 0.99  0.99
LT Adj:      xxxx xxxx xxxxx  0.73 xxxx  0.73  0.95 xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 1.00 0.86  0.86  0.71 1.00  0.71  0.93 0.98  1.00  0.93 0.97  0.97
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 0.95  0.95  1.00 0.95  0.95
Fnl Sat Adj: 1.00 0.86  0.86  0.71 1.00  0.71  0.93 0.93  0.95  0.93 0.92  0.92
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  0.00 1.00  1.00  1.00 0.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
```


EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	xxxxxx	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	xxxxxx	4.92	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	xxxxxx	5.92	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	xxxxxx	5.92	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	xxxxxx	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	xxxxxx	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	xxxxxx	20	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	xxxxxx	0.95	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	0.00	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	xxxxxx	0.54	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	xxxxxx	25	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	xxxxxx	0.69	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	xxxxxx	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	xxxxxx	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	xxxxxx	0.00	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	xxxxxx	0.92	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	xxxxxx	0.43	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	xxxxxx	5.49	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	xxxxxx	0.22	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	1.00	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	xxxxxx	1.44	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	xxxxxx	1.00	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	xxxxxx	0.66	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	xxxxxx	0.73	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	xxxxxx	0.73	xxxxxx	xxxxxx

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.00	0.06	0.06	0.06	0.00	0.06	0.01	0.81	0.00	0.04	0.84	0.84
ArrivalType:	4				4				4				4			
ProgFactor:	1.00	0.98	0.98	0.98	1.00	0.98	1.00	0.00	1.00	0.99	0.00	0.00
Q1:	0.0	0.7	0.7	0.5	0.0	0.5	0.1	0.0	0.0	0.5	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Q2:	0.0	0.3	0.3	0.3	0.0	0.3	0.3	0.3	0.0	0.3	0.3	0.3
HCM2KQueue:	0.0	1.0	1.0	0.9	0.0	0.9	0.4	0.3	0.0	0.8	0.3	0.3
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	0.0	1.2	1.2	1.0	0.0	1.0	0.5	0.4	0.0	1.0	0.4	0.4
85th%Factor:	1.60	1.59	1.59	1.59	1.60	1.59	1.60	1.60	1.60	1.59	1.60	1.60
HCM2k85thQ:	0.0	1.6	1.6	1.4	0.0	1.4	0.7	0.6	0.0	1.3	0.5	0.5
90th%Factor:	1.80	1.78	1.78	1.78	1.80	1.78	1.79	1.79	1.80	1.78	1.79	1.79
HCM2k90thQ:	0.0	1.8	1.8	1.6	0.0	1.6	0.7	0.6	0.0	1.5	0.5	0.5
95th%Factor:	2.10	2.07	2.07	2.07	2.10	2.07	2.09	2.09	2.10	2.07	2.09	2.09
HCM2k95thQ:	0.0	2.0	2.0	1.8	0.0	1.8	0.9	0.7	0.0	1.7	0.6	0.6
98th%Factor:	2.70	2.63	2.63	2.64	2.70	2.64	2.67	2.67	2.70	2.64	2.68	2.68
HCM2k98thQ:	0.0	2.6	2.6	2.3	0.0	2.3	1.1	0.9	0.0	2.2	0.8	0.8

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	1.049
Loss Time (sec):	12	Average Delay (sec/veh):	64.8
Optimal Cycle:	180	Level Of Service:	E

Street Name:	West Lane								Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	2	0 1	1	0	2	0 1	1	0	2	0 1	1	0	2	0 1
Volume Module:	PM Peak Hour															
Base Vol:	528	385	84		14	320	204		264	728	458		68	865	3	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	528	385	84		14	320	204		264	728	458		68	865	3	
Added Vol:	30	6	65		12	9	0		0	63	46		51	40	8	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	558	391	149		26	329	204		264	791	504		119	905	11	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	607	425	162		28	358	222		287	860	548		129	984	12	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	607	425	162		28	358	222		287	860	548		129	984	12	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	607	425	162		28	358	222		287	860	548		129	984	12	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Lanes:	1.00	2.00	1.00		1.00	2.00	1.00		1.00	2.00	1.00		1.00	2.00	1.00	
Final Sat.:	1769	3538	1583		1769	3538	1583		1769	3538	1583		1769	3538	1583	
Capacity Analysis Module:																
Vol/Sat:	0.34	0.12	0.10		0.02	0.10	0.14		0.16	0.24	0.35		0.07	0.28	0.01	
Crit Moves:	****						****		****					****		
Green/Cycle:	0.33	0.41	0.41		0.05	0.13	0.13		0.15	0.35	0.35		0.07	0.27	0.27	
Volume/Cap:	1.05	0.30	0.25		0.30	0.76	1.05		1.05	0.70	1.00		1.00	1.05	0.03	
Delay/Veh:	84.6	20.1	19.8		47.2	48.7	118.8		110.2	30.1	70.8		125.1	79.9	27.2	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	84.6	20.1	19.8		47.2	48.7	118.8		110.2	30.1	70.8		125.1	79.9	27.2	
LOS by Move:	F	C	B		D	D	F		F	C	E		F	E	C	
HCM2k95thQ:	1029	181	129		59	348	547		655	549	975		262	905	12	

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	2	0 1	1	0	2	0 1	1	0	2	0 1	1	0	2	0 1
Lane Group:	L		T	R	L		T	R	L		T	R	L		T	R
#LnsInGrps:	1		2	1	1		2	1	1		2	1	1		2	1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12		12	12	12		12	12	12		12	12	12		12	12
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.93	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Green/Cycle:	0.33	0.41	0.41		0.05	0.13	0.13		0.15	0.35	0.35		0.07	0.27	0.27	
ArrivalType:	4				4				4				4			
ProgFactor:	1.00	0.81	0.80		0.99	0.99	1.00		1.00	0.92	1.00		1.00	1.00	0.88	
Q1:	16.8	3.4	2.4		0.7	5.0	6.2		8.0	10.0	15.2		3.6	14.4	0.2	
UpstreamVC:	0.41	0.41	0.41		0.00	0.00	0.00		0.00	0.00	0.00		0.35	0.35	0.35	
UpstreamAdj:	0.91	0.91	0.91		0.00	0.00	0.00		0.00	0.00	0.00		0.94	0.94	0.94	
EarlyArrAdj:	0.48	0.57	0.52		1.00	1.00	1.00		1.00	1.00	1.00		0.20	0.45	0.41	
Q2:	8.1	0.2	0.2		0.4	2.4	6.0		6.9	2.2	8.2		1.8	7.1	0.0	
HCM2KQueue:	24.9	3.6	2.6		1.1	7.3	12.1		14.9	12.2	23.4		5.4	21.5	0.2	
70th%Factor:	1.15	1.19	1.19		1.20	1.18	1.17		1.17	1.17	1.16		1.19	1.16	1.20	
HCM2k70thQ:	28.8	4.3	3.1		1.4	8.7	14.2		17.4	14.3	27.1		6.4	24.9	0.3	
85th%Factor:	1.43	1.57	1.58		1.59	1.53	1.50		1.48	1.50	1.44		1.55	1.45	1.60	
HCM2k85thQ:	35.7	5.7	4.0		1.8	11.3	18.2		22.0	18.2	33.7		8.4	31.1	0.4	
90th%Factor:	1.51	1.73	1.75		1.78	1.68	1.62		1.59	1.62	1.52		1.71	1.54	1.80	
HCM2k90thQ:	37.8	6.3	4.5		2.0	12.3	19.6		23.6	19.7	35.7		9.2	33.1	0.4	
95th%Factor:	1.65	1.99	2.02		2.06	1.90	1.81		1.76	1.81	1.66		1.94	1.68	2.09	
HCM2k95thQ:	41.1	7.2	5.2		2.4	13.9	21.9		26.2	22.0	39.0		10.5	36.2	0.5	
98th%Factor:	1.85	2.46	2.52		2.62	2.27	2.09		2.02	2.09	1.86		2.36	1.89	2.68	
HCM2k98thQ:	46.1	8.9	6.5		3.0	16.6	25.4		30.0	25.4	43.7		12.7	40.7	0.6	

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: D[30.4]

Street Name:	Ham Lane							Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled			
Rights:	Include			Include			Include			Include			
Lanes:	0 0 0 0 0			1 0 0 0 1			1 0 2 0 0			0 0 1 1 0			
Volume Module:PM Peak Hour													
Base Vol:	0	0	0	13	0	13	6	726	0	0	851	20	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Initial Bse:	0	0	0	13	0	13	6	726	0	0	851	20	
Added Vol:	0	0	0	1	0	0	0	129	0	0	140	0	
Pass-By:	0	0	0	0	0	0	0	0	0	0	0	0	
Initial Fut:	0	0	0	14	0	13	6	855	0	0	991	20	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
PHF Volume:	0	0	0	15	0	14	7	929	0	0	1077	22	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
FinalVolume:	0	0	0	15	0	14	7	929	0	0	1077	22	
Critical Gap Module:													
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Capacity Module:													
Cnflict Vol:	xxxx	xxxx	xxxxx	1566	xxxx	549	1099	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	xxxxx	102	xxxx	479	631	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	xxxxx	101	xxxx	479	631	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	xxxx	0.15	xxxx	0.03	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	
Level Of Service Module:													
2Way95thQ:	xxxx	xxxx	xxxxx	12.7	xxxx	2.3	0.8	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx	46.8	xxxx	12.7	10.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*	E	*	B	B	*	*	*	*	*	
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*	
ApproachDel:	xxxxxx			30.4			xxxxxx			xxxxxx			
ApproachLOS:	*			D			*			*			

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
HevVeh:	2%			2%			2%			2%			
Grade:	0%			0%			0%			0%			
Peds/Hour:	0			0			0			0			
Pedestrian Walk Speed: 4.00 feet/sec													
LaneWidth:	12 feet			12 feet			12 feet			12 feet			
Time Period: 0.25 hour													
Upstream Signals:													
Link Index:							#23			#26			
Dist(miles):							0.250			0.250			
Speed (mph):							1.00			1.00			
SignalIndex:							#53			#10			
Cycle Time:							100 secs			100 secs			
InitVolume:							0	897		35	959		
Saturation:							0	3538		1769	3516		
ArrivalType:							0	4		4	4		
G/C:							0.00	0.68		0.07	0.79		
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection													
P:							0.000	0.909		0.097	1.048		
gq1:							0.00	2.32		1.79	-1.30		
gq2:							0.00	1.18		0.05	-0.74		
gq:							0.00	3.50		1.84	-2.04		
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons													
alpha:							0.500			0.500			
beta:							0.667			0.667			
ta (secs):							900.000			900.000			
F:							0.003			0.003			
f:							1.000	1.000		1.000	1.000		
vcmax:							0	41		11	-24		
vcg:							0	265		11	283		
vcmin:							2000	2000		2000	2000		
tp:							0.0	0.0		0.0	0.0		
p:							0.000			0.000			
*** Computation 3: Platoon Event Periods													
pdom/psubo:							0.000/0.000/Unconstrained						
*** Computation 4: Conflicting Flows During Each Unblocked Period													
InitCnflVol:	1481	2041	465	1566	2030	549	1099	xxxxx	xxxxx	0	xxxxx	xxxxx	
AdjCnflVol:	1481	2041	465	1566	2030	549	1099	xxxxx	xxxxx	0	xxxxx	xxxxx	
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	
ConflictVol:	1481	2041	465	1566	2030	549	1099	xxxxx	xxxxx	0	xxxxx	xxxxx	
*** Computation 5: Capacity for Subject Movement During Unblocked Period													
InitPotCap:	87	56	544	102	57	479	631	xxxxx	xxxxx	1622	xxxxx	xxxxx	
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	
Potent Cap.:	87	56	544	102	57	479	631	xxxxx	xxxxx	1622	xxxxx	xxxxx	

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St J

Cycle (sec):	100	Critical Vol./Cap.(X):	0.377
Loss Time (sec):	12	Average Delay (sec/veh):	8.4
Optimal Cycle:	34	Level Of Service:	A

Street Name:	Leach Road/Street J						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0
Volume Module:PM Peak Hour												
Base Vol:	0	0	0	6	0	5	6	681	0	0	854	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	6	0	5	6	681	0	0	854	5
Added Vol:	35	0	41	0	0	0	0	69	60	70	105	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	35	0	41	6	0	5	6	750	60	70	959	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	38	0	45	7	0	5	7	815	65	76	1042	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	38	0	45	7	0	5	7	815	65	76	1042	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	38	0	45	7	0	5	7	815	65	76	1042	5
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	0.93	1.00	0.83	0.93	0.92	0.92	0.93	0.93	0.93
Lanes:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.85	0.15	1.00	1.99	0.01
Final Sat.:	1769	0	1583	1769	0	1583	1769	3240	259	1769	3516	18
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.03	0.00	0.00	0.00	0.00	0.25	0.25	0.04	0.30	0.30
Crit Moves:			****	****			****				****	
Green/Cycle:	0.07	0.00	0.07	0.01	0.00	0.01	0.01	0.68	0.68	0.12	0.79	0.79
Volume/Cap:	0.30	0.00	0.38	0.38	0.00	0.35	0.38	0.37	0.37	0.37	0.38	0.38
Delay/Veh:	45.2	0.0	46.1	62.5	0.0	62.5	62.5	7.0	7.0	41.9	3.3	3.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.2	0.0	46.1	62.5	0.0	62.5	62.5	7.0	7.0	41.9	3.3	3.3
LOS by Move:	D	A	D	E	A	E	E	A	A	D	A	A
HCM2k95thQ:	71	0	88	33	0	29	11	116	116	125	31	31

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	1	0	0	1	0		1	0	0	1	0		1	0	1	1	0		1	0	1	1	0	
Lane Group:	L		RT		RT		L		RT		RT		L		RT		RT		L		RT		RT	
#LnsInGrps:	1		1		1		1		1		1		1		2		2		1		2		2	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:			8						8						8						8			
% Hev Veh:			2						2						2						2			
Grade:			0%						0%						0%						0%			
Parking/Hr:			No						No						No						No			
Bus Stp/Hr:			0						0						0						0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:			0						0						0						0			
ExclusiveRT:			Include						Include						Include						Include			
% RT Prtct:			0						0						0						0			
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx			1	xxxx		xxxx		
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	xxxx		1.00			1.00	xxxx		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
Hev Veh Adj:	0.98	xxxx		0.98			0.98	xxxx		0.98			0.98	0.98		0.98			0.98	0.98		0.98		
Grade Adj:	1.00	xxxx		1.00			1.00	xxxx		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
Parking Adj:	xxxx	xxxx		1.00			xxxx	xxxx		1.00			xxxx	1.00		1.00			xxxx	1.00		1.00		
Bus Stp Adj:	xxxx	xxxx		1.00			xxxx	xxxx		1.00			xxxx	1.00		1.00			xxxx	1.00		1.00		
Area Adj:	1.00	xxxx		1.00			1.00	xxxx		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
RT Adj:	xxxx	xxxx		0.85			xxxx	xxxx		0.85			xxxx	0.99		0.99			xxxx	1.00		1.00		
LT Adj:	0.95	xxxx		xxxxx			0.95	xxxx		xxxxx			0.95	xxxx		xxxxx			0.95	xxxx		xxxxx		
PedBike Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
HCM Sat Adj:	0.93	1.00		0.83			0.93	1.00		0.83			0.93	0.97		0.97			0.93	0.98		0.98		
Usr Sat Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
MLF Sat Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	0.95		0.95			1.00	0.95		0.95		
Fnl Sat Adj:	0.93	1.00		0.83			0.93	1.00		0.83			0.93	0.92		0.92			0.93	0.93		0.93		
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	0.00		1.00			1.00	0.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.07	0.00	0.07	0.01	0.00	0.01	0.01	0.68	0.68	0.12	0.79	0.79
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	1.00	0.98	1.00	1.00	1.00	1.00	0.33	0.33	0.97	0.00	0.00
Q1:	1.0	0.0	1.2	0.2	0.0	0.1	0.2	1.8	1.8	1.9	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.40	0.40	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.92	0.92	0.92	0.00	0.00	0.00
EarlyArrAdj:	1.00	0.00	1.00	1.00	0.00	1.00	0.06	0.77	0.77	1.00	1.00	1.00
Q2:	0.4	0.0	0.6	0.5	0.0	0.4	0.0	0.5	0.5	0.6	0.6	0.6
HCM2KQueue:	1.4	0.0	1.7	0.6	0.0	0.6	0.2	2.3	2.3	2.5	0.6	0.6
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.19	1.19	1.19	1.20	1.20
HCM2k70thQ:	1.7	0.0	2.1	0.8	0.0	0.7	0.3	2.7	2.7	2.9	0.7	0.7
85th%Factor:	1.59	1.60	1.58	1.59	1.60	1.59	1.60	1.58	1.58	1.58	1.59	1.59
HCM2k85thQ:	2.2	0.0	2.7	1.0	0.0	0.9	0.3	3.6	3.6	3.9	1.0	1.0
90th%Factor:	1.77	1.80	1.77	1.79	1.80	1.79	1.80	1.76	1.76	1.75	1.79	1.79
HCM2k90thQ:	2.5	0.0	3.1	1.1	0.0	1.0	0.4	4.0	4.0	4.3	1.1	1.1
95th%Factor:	2.06	2.10	2.05	2.08	2.10	2.08	2.09	2.03	2.03	2.02	2.08	2.08
HCM2k95thQ:	2.9	0.0	3.5	1.3	0.0	1.2	0.4	4.6	4.6	5.0	1.3	1.3
98th%Factor:	2.60	2.70	2.58	2.65	2.70	2.66	2.68	2.54	2.54	2.53	2.65	2.65
HCM2k98thQ:	3.6	0.0	4.5	1.7	0.0	1.5	0.6	5.8	5.8	6.2	1.6	1.6

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Cycle (sec): 100 Critical Vol./Cap.(X): 0.418
Loss Time (sec): 12 Average Delay (sec/veh): 8.1
Optimal Cycle: 36 Level Of Service: A

Street Name:	Micke Grove Road/Holman Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	0 1	1	0 1	0 1	1	0 2	0 1	1	0 2	0 1
Volume Module:	PM Peak Hour											
Base Vol:	0	0	0	18	0	8	6	767	0	0	861	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	18	0	8	6	767	0	0	861	11
Added Vol:	37	0	0	0	0	38	24	62	23	0	99	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	37	0	0	18	0	46	30	829	23	0	960	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	40	0	0	20	0	50	33	901	25	0	1043	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	40	0	0	20	0	50	33	901	25	0	1043	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	40	0	0	20	0	50	33	901	25	0	1043	12
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	1.00	0.93	1.00	0.83	0.93	0.93	0.83	1.00	0.93	0.83
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1769	1900	1900	1769	1900	1583	1769	3538	1583	1900	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.00	0.01	0.00	0.03	0.02	0.25	0.02	0.00	0.29	0.01
Crit Moves:	****					****	****				****	
Green/Cycle:	0.05	0.00	0.00	0.13	0.00	0.08	0.04	0.75	0.75	0.00	0.71	0.71
Volume/Cap:	0.42	0.00	0.00	0.09	0.00	0.42	0.42	0.34	0.02	0.00	0.42	0.01
Delay/Veh:	48.7	0.0	0.0	38.4	0.0	46.5	50.1	4.3	3.2	0.0	6.2	4.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.7	0.0	0.0	38.4	0.0	46.5	50.1	4.3	3.2	0.0	6.2	4.4
LOS by Move:	D	A	A	D	A	D	D	A	A	A	A	A
HCM2k95thQ:	88	0	0	29	0	100	78	27	1	0	96	1

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

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Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        1  0  1  0  1    1  0  1  0  1    1  0  2  0  1    1  0  2  0  1
Lane Group:    L    T     R     L    T     R     L    T     R     L    T     R
#LnsInGrps:     1    1     1     1    1     1     1    2     1     1    2     1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:          8                8                8                8
% Hev Veh:            2                2                2                2
Grade:               0%               0%               0%               0%
Parking/Hr:          No               No               No               No
Bus Stp/Hr:           0                0                0                0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:          0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:           0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 xxxx xxxxx  1.00 xxxx  1.00  1.00 1.00  1.00  xxxx 1.00  1.00
Hev Veh Adj: 0.98 xxxx xxxxx  0.98 xxxx  0.98  0.98 0.98  0.98  xxxx 0.98  0.98
Grade Adj:   1.00 xxxx xxxxx  1.00 xxxx  1.00  1.00 1.00  1.00  xxxx 1.00  1.00
Parking Adj: xxxx xxxx xxxxx  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00
Bus Stp Adj: xxxx xxxx xxxxx  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00
Area Adj:    1.00 xxxx xxxxx  1.00 xxxx  1.00  1.00 1.00  1.00  xxxx 1.00  1.00
RT Adj:      xxxx xxxx xxxxx  xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx xxxx  0.85
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx  xxxx xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.93 1.00  1.00  0.93 1.00  0.83  0.93 0.98  0.83  1.00 0.98  0.83
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 0.95  1.00  1.00 0.95  1.00
Fnl Sat Adj: 0.93 1.00  1.00  0.93 1.00  0.83  0.93 0.93  0.83  1.00 0.93  0.83
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 0.00  0.00  1.00 0.00  1.00  1.00 1.00  1.00  0.00 1.00  1.00
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EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Green/Cycle: 0.05 0.00  0.00  0.13 0.00  0.08  0.04 0.75  0.75  0.00 0.71  0.71
ArrivalType:         4                4                4                4
ProgFactor:  0.99 1.00  1.00  0.95 1.00  0.98  0.99 0.00  0.00  1.00 0.23  0.20
Q1:           1.1  0.0   0.0   0.5  0.0   1.3   0.9  0.0   0.0   0.0  1.5   0.0
UpstreamVC:  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.70  0.70
UpstreamAdj: 0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.65  0.65
EarlyArrAdj: 1.00 0.00  0.00  1.00 0.00  1.00  1.00 1.00  1.00  0.00 0.56  0.51
Q2:           0.7  0.0   0.0   0.1  0.0   0.7   0.6  0.5   0.0   0.0  0.4   0.0
HCM2KQueue:   1.7  0.0   0.0   0.5  0.0   2.0   1.5  0.5   0.0   0.0  1.9   0.0
------------|---------------||---------------||---------------||---------------|
70th%Factor: 1.20 1.20  1.20  1.20 1.20  1.20  1.20 1.20  1.20  1.20 1.20  1.20
HCM2k70thQ:   2.1  0.0   0.0   0.7  0.0   2.4   1.8  0.6   0.0   0.0  2.3   0.0
------------|---------------||---------------||---------------||---------------|
85th%Factor: 1.58 1.60  1.60  1.59 1.60  1.58  1.59 1.59  1.60  1.60 1.58  1.60
HCM2k85thQ:   2.7  0.0   0.0   0.9  0.0   3.1   2.4  0.8   0.0   0.0  3.0   0.0
------------|---------------||---------------||---------------||---------------|
90th%Factor: 1.77 1.80  1.80  1.79 1.80  1.76  1.77 1.79  1.80  1.80 1.76  1.80
HCM2k90thQ:   3.0  0.0   0.0   1.0  0.0   3.5   2.7  0.9   0.0   0.0  3.3   0.0
------------|---------------||---------------||---------------||---------------|
95th%Factor: 2.05 2.10  2.10  2.08 2.10  2.04  2.05 2.08  2.10  2.10 2.04  2.10
HCM2k95thQ:   3.5  0.0   0.0   1.1  0.0   4.0   3.1  1.1   0.0   0.0  3.8   0.1
------------|---------------||---------------||---------------||---------------|
98th%Factor: 2.58 2.70  2.70  2.66 2.70  2.56  2.59 2.66  2.70  2.70 2.56  2.70
HCM2k98thQ:   4.4  0.0   0.0   1.5  0.0   5.0   3.9  1.4   0.1   0.0  4.8   0.1
```

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Average Delay (sec/veh): 7.4 Worst Case Level Of Service: B[12.2]

Street Name:	SR 99 West Frontage Rd						SR 99 SB Ramps (Eight Mile Rd)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 1 0 0 0			0 0 0 0 0			1 0 0 0 1		
Volume Module:PM Peak Hour												
Base Vol:	0	112	7	257	143	0	0	0	0	26	0	318
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	112	7	257	143	0	0	0	0	26	0	318
Added Vol:	0	0	0	45	0	0	0	0	0	0	0	11
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	112	7	302	143	0	0	0	0	26	0	329
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	122	8	328	155	0	0	0	0	28	0	358
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	122	8	328	155	0	0	0	0	28	0	358
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	129	xxxx	xxxxx	xxxx	xxxx	xxxxx	937	xxxx	126
Potent Cap.:	xxxx	xxxx	xxxxx	1456	xxxx	xxxxx	xxxx	xxxx	xxxxx	294	xxxx	925
Move Cap.:	xxxx	xxxx	xxxxx	1456	xxxx	xxxxx	xxxx	xxxx	xxxxx	231	xxxx	925
Volume/Cap:	xxxx	xxxx	xxxx	0.23	xxxx	xxxx	xxxx	xxxx	xxxx	0.12	xxxx	0.39
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	21.7	xxxx	xxxxx	xxxx	xxxx	xxxxx	10.3	xxxx	46.1
Control Del:	xxxxx	xxxx	xxxxx	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	22.7	xxxx	11.3
LOS by Move:	*	*	*	A	*	*	*	*	*	C	*	B
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			12.2		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:	#218			#183								
Dist(miles):	0.250			0.250								
Speed (mph):	1.00			1.00								
SignalIndex:	#22			#12								
Cycle Time:	100 secs			100 secs								
InitVolume:	255	15		116	40							
Saturation:	1769	890		1769	999							
ArrivalType:	4	4		4	4							
G/C:	0.18	0.28		0.11	0.06							
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:	0.240	0.368		0.147	0.083							
gq1:	10.95	1.07		5.59	3.67							
gq2:	2.61	0.02		0.54	0.21							
gq:	13.56	1.09		6.13	3.88							
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:	0.550			0.550								
beta:	0.645			0.645								
ta (secs):	900.000			900.000								
F:	0.003			0.003								
f:	0.479	1.000		1.000	1.000							
vcmax:	35	3		34	12							
vcg:	37	4		35	12							
vcmin:	1000	1000		1000	1000							
tp:	0.0	0.0		0.0	0.0							
p:	0.000			0.000								
*** Computation 3: Platoon Event Periods												
pdom/psubo:	0.000/0.000/Unconstrained											
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	0	xxxxx	xxxxx	129	xxxxx	xxxxx	1116	941	155	937	937	126
AdjCnflVol:	0	xxxxx	xxxxx	129	xxxxx	xxxxx	1116	941	155	937	937	126
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	0	xxxxx	xxxxx	129	xxxxx	xxxxx	1116	941	155	937	937	126
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	1623	xxxxx	xxxxx	1456	xxxxx	xxxxx	185	263	890	294	265	925
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
Potent Cap.:	1623	xxxxx	xxxxx	1456	xxxxx	xxxxx	185	263	890	294	265	925

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Average Delay (sec/veh): 14.6 Worst Case Level Of Service: E[38.8]

Street Name:	SR 99 East Frontage Rd								SR 99 NB Ramps (Eight Mile Rd)							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Volume Module:PM Peak Hour																				
Base Vol:	60	234	0	0	204	173	266	0	50	0	0	0								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	60	234	0	0	204	173	266	0	50	0	0	0								
Added Vol:	0	0	0	0	0	7	72	0	0	0	0	0								
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0								
Initial Fut:	60	234	0	0	204	180	338	0	50	0	0	0								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92								
PHF Volume:	65	254	0	0	222	196	367	0	54	0	0	0								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	65	254	0	0	222	196	367	0	54	0	0	0								
Critical Gap Module:																				
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx								
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	417	xxxx	xxxxx	xxxx	xxxx	xxxxx	607	xxxx	222	xxxx	xxxx	xxxxx								
Potent Cap.:	1142	xxxx	xxxxx	xxxx	xxxx	xxxxx	460	xxxx	818	xxxx	xxxx	xxxxx								
Move Cap.:	1142	xxxx	xxxxx	xxxx	xxxx	xxxxx	439	xxxx	818	xxxx	xxxx	xxxxx								
Volume/Cap:	0.06	xxxx	xxxx	xxxx	xxxx	xxxx	0.84	xxxx	0.07	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	4.5	xxxx	xxxxx	xxxx	xxxx	xxxxx	202	xxxx	5.3	xxxx	xxxx	xxxxx								
Control Del:	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	43.1	xxxx	9.7	xxxxx	xxxx	xxxxx								
LOS by Move:	A	*	*	*	*	*	E	*	A	*	*	*								
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx			xxxxxx			38.8			xxxxxx										
ApproachLOS:	*			*			E			*										

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HevVeh:	2%				2%				2%				2%			
Grade:	0%				0%				0%				0%			
Peds/Hour:	0				0				0				0			
Pedestrian Walk Speed: 4.00 feet/sec																
LaneWidth:	12 feet				12 feet				12 feet				12 feet			
Time Period: 0.25 hour																
Upstream Signals:																
Link Index:	#222				#188											
Dist(miles):	0.250				0.250											
Speed (mph):	1.00				1.00											
SignalIndex:	#23				#13											
Cycle Time:	100 secs				100 secs											
InitVolume:	327	48			41	22										
Saturation:	1165	810			1769	1348										
ArrivalType:	4	4			4	4										
G/C:	0.31	0.22			0.04	0.07										
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection																
P:	0.411	0.287			0.049	0.091										
gq1:	16.54	4.23			2.20	1.48										
gq2:	9.90	0.36			0.07	0.03										
gq:	26.44	4.59			2.27	1.52										
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons																
alpha:	0.550				0.550											
beta:	0.645				0.645											
ta (secs):	900.000				900.000											
F:	0.003				0.003											
f:	0.852	1.000			1.000	1.000										
vcmax:	79	12			13	6										
vcg:	83	14			13	7										
vcmin:	1000	1000			1000	1000										
tp:	0.0	0.0			0.0	0.0										
p:	0.000				0.000											
*** Computation 3: Platoon Event Periods																
pdom/psubo:	0.000/0.000/Unconstrained															
*** Computation 4: Conflicting Flows During Each Unblocked Period																
InitCnflVol:	417	xxxxx	xxxxx	0	xxxxx	xxxxx	607	607	222	732	802	254				
AdjCnflVol:	417	xxxxx	xxxxx	0	xxxxx	xxxxx	607	607	222	732	802	254				
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000				
ConflictVol:	417	xxxxx	xxxxx	0	xxxxx	xxxxx	607	607	222	732	802	254				
*** Computation 5: Capacity for Subject Movement During Unblocked Period																
InitPotCap:	1142	xxxxx	xxxxx	1623	xxxxx	xxxxx	460	411	818	337	317	784				
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000				
Potent Cap.:	1142	xxxxx	xxxxx	1623	xxxxx	xxxxx	460	411	818	337	317	784				

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Holman & Lt Col Mark Taylor

Cycle (sec):	100	Critical Vol./Cap.(X):	0.412
Loss Time (sec):	12	Average Delay (sec/veh):	29.2
Optimal Cycle:	36	Level Of Service:	C

Street Name:	Holman Road											Lt. Col. Mark Taylor Street											
Approach:	North Bound				South Bound				East Bound				West Bound										
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected							
Rights:	Include					Include					Include					Include							
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0					
Y+R:	4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0					
Lanes:	1	0	2	0	1	1	0	3	0	1	1	0	1	0	1	1	0	0	1	0			
Volume Module:	PM Peak Hour																						
Base Vol:	145	202	208			11	157	7			14	178	142			177	134	8					
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00					
Initial Bse:	145	202	208			11	157	7			14	178	142			177	134	8					
Added Vol:	0	10	0			0	6	0			0	0	0			0	0	0					
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0					
Initial Fut:	145	212	208			11	163	7			14	178	142			177	134	8					
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00					
PHF Adj:	0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92					
PHF Volume:	158	230	226			12	177	8			15	193	154			192	146	9					
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0					
Reduced Vol:	158	230	226			12	177	8			15	193	154			192	146	9					
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00					
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00					
FinalVolume:	158	230	226			12	177	8			15	193	154			192	146	9					
Saturation Flow Module:																							
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900					
Adjustment:	0.93	0.93	0.83			0.93	0.89	0.83			0.93	0.98	0.83			0.93	0.97	0.97					
Lanes:	1.00	2.00	1.00			1.00	3.00	1.00			1.00	1.00	1.00			1.00	0.94	0.06					
Final Sat.:	1769	3538	1583			1769	5083	1583			1769	1862	1583			1769	1743	104					
Capacity Analysis Module:																							
Vol/Sat:	0.09	0.07	0.14			0.01	0.03	0.00			0.01	0.10	0.10			0.11	0.08	0.08					
Crit Moves:			****			****						****				****							
Green/Cycle:	0.26	0.35	0.35			0.02	0.10	0.10			0.05	0.25	0.25			0.26	0.47	0.47					
Volume/Cap:	0.34	0.19	0.41			0.41	0.34	0.05			0.18	0.41	0.39			0.41	0.18	0.18					
Delay/Veh:	30.4	22.9	25.4			57.9	42.2	40.6			46.7	31.8	31.6			31.0	15.5	15.5					
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00					
AdjDel/Veh:	30.4	22.9	25.4			57.9	42.2	40.6			46.7	31.8	31.6			31.0	15.5	15.5					
LOS by Move:	C	C	C			E	D	D			D	C	C			C	B	B					
HCM2k95thQ:	173	107	222			46	108	12			23	220	176			232	103	103					

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes:	1	0	2	0	1	1	0	3	0	1	1	0	1	0	1	1	0	0	1	0
Lane Group:	L		T		R	L		T		R	L		T		R	L		RT		RT
#LnsInGrps:	1		2		1	1		3		1	1		1		1	1		1		1
HCM Ops Adjusted Lane Utilization Module:																				
HCM Ops Input Saturation Adj Module:																				
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12
CrsswalkWid:			8					8					8					8		
% Hev Veh:			2					2					2					2		
Grade:			0%					0%					0%					0%		
Parking/Hr:			No					No					No					No		
Bus Stp/Hr:			0					0					0					0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																			
Cnft Ped/Hr:			0					0					0					0		
ExclusiveRT:			Include					Include					Include					Include		
% RT Prtct:			0					0					0					0		
HCM Ops f(lt) Adj Case Module:																				
f(lt) Case:	1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx		
HCM Ops Saturation Adj Module:																				
Ln Wid Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Hev Veh Adj:	0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98			0.98	0.98	0.98		
Grade Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Parking Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00		
Bus Stp Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00		
Area Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
RT Adj:	xxxx	xxxx	0.85			xxxx	xxxx	0.85			xxxx	xxxx	0.85			xxxx	0.99	0.99		
LT Adj:	0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx		
PedBike Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
HCM Sat Adj:	0.93	0.98	0.83			0.93	0.98	0.83			0.93	0.98	0.83			0.93	0.97	0.97		
Usr Sat Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Sat Adj:	1.00	0.95	1.00			1.00	0.91	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Fnl Sat Adj:	0.93	0.93	0.83			0.93	0.89	0.83			0.93	0.98	0.83			0.93	0.97	0.97		
Delay Adjustment Factor Module:																				
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																			
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >																			
DelAdjFctr:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #17 Holman & Lt Col Mark Taylor

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.26	0.35	0.35	0.02	0.10	0.10	0.05	0.25	0.25	0.26	0.47	0.47
ArrivalType:		4			4			4			4	
ProgFactor:	0.91	0.84	0.87	1.00	0.97	0.96	0.99	0.92	0.92	0.92	0.73	0.73
Q1:	3.2	2.0	4.2	0.3	1.6	0.2	0.4	4.1	3.3	4.0	1.8	1.8
UpstreamVC:	0.16	0.16	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.99	0.99	0.99	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
EarlyArrAdj:	0.46	0.56	0.51	1.00	1.00	1.00	0.17	0.47	0.42	1.00	1.00	1.00
Q2:	0.2	0.1	0.4	0.6	0.5	0.0	0.0	0.3	0.3	0.7	0.2	0.2
HCM2KQueue:	3.5	2.1	4.5	0.9	2.1	0.2	0.4	4.5	3.5	4.7	2.0	2.0
70th%Factor:	1.19	1.19	1.19	1.20	1.19	1.20	1.20	1.19	1.19	1.19	1.20	1.20
HCM2k70thQ:	4.1	2.5	5.4	1.1	2.6	0.3	0.5	5.3	4.2	5.6	2.4	2.4
85th%Factor:	1.57	1.58	1.56	1.59	1.58	1.60	1.60	1.56	1.57	1.56	1.58	1.58
HCM2k85thQ:	5.4	3.3	7.0	1.4	3.4	0.4	0.7	7.0	5.5	7.4	3.2	3.2
90th%Factor:	1.74	1.76	1.72	1.78	1.76	1.80	1.79	1.72	1.74	1.72	1.76	1.76
HCM2k90thQ:	6.0	3.7	7.8	1.6	3.8	0.4	0.8	7.7	6.1	8.1	3.6	3.6
95th%Factor:	1.99	2.03	1.97	2.07	2.03	2.09	2.09	1.97	1.99	1.96	2.04	2.04
HCM2k95thQ:	6.9	4.3	8.9	1.8	4.3	0.5	0.9	8.8	7.0	9.3	4.1	4.1
98th%Factor:	2.47	2.55	2.41	2.63	2.55	2.68	2.67	2.41	2.46	2.39	2.56	2.56
HCM2k98thQ:	8.6	5.4	10.9	2.3	5.4	0.6	1.2	10.8	8.7	11.3	5.2	5.2

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.621
Loss Time (sec): 12 | Average Delay (sec/veh): 27.2
Optimal Cycle: 50 | Level Of Service: C

Street Name:	West Lane						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module: PM Peak Hour												
Base Vol:	82	674	250	266	580	30	41	54	56	296	55	198
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	82	674	250	266	580	30	41	54	56	296	55	198
Added Vol:	0	175	0	36	112	7	11	0	0	0	0	55
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	82	849	250	302	692	37	52	54	56	296	55	253
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	89	923	272	328	752	40	57	59	61	322	60	275
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	923	272	328	752	40	57	59	61	322	60	275
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	923	272	328	752	40	57	59	61	322	60	275
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.90	0.93	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3432	3538	1583	3432	3538	1583	3432	5083	1583	3432	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.26	0.17	0.10	0.21	0.03	0.02	0.01	0.04	0.09	0.01	0.17
Crit Moves:		****		****			****					****
Green/Cycle:	0.06	0.42	0.42	0.15	0.51	0.51	0.03	0.09	0.09	0.22	0.28	0.28
Volume/Cap:	0.42	0.62	0.41	0.62	0.42	0.05	0.62	0.13	0.43	0.43	0.04	0.62
Delay/Veh:	46.4	23.6	20.7	41.9	15.3	12.3	60.7	42.1	45.3	34.2	26.3	34.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.4	23.6	20.7	41.9	15.3	12.3	60.7	42.1	45.3	34.2	26.3	34.1
LOS by Move:	D	C	C	D	B	B	E	D	D	C	C	C
HCM2k95thQ:	95	489	244	278	271	22	97	35	116	220	22	367

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0	1	2	0	2	0	1	2	0	3	0	1	2
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	2	1		2	2	1		2	3	1		2	3	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		0.97	0.95	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.93	0.83		0.90	0.93	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.06	0.42	0.42		0.15	0.51	0.51		0.03	0.09	0.09		0.22	0.28	0.28	
ArrivalType:	4				4				4				4			
ProgFactor:	0.99	0.86	0.82		0.97	0.72	0.66		1.00	0.97	0.98		0.94	0.87	0.94	
Q1:	1.2	9.1	4.3		4.3	4.9	0.4		0.8	0.5	1.6		3.7	0.4	6.2	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.7	1.6	0.7		1.5	0.7	0.1		1.1	0.1	0.7		0.7	0.0	1.5	
HCM2KQueue:	1.9	10.7	5.0		5.8	5.6	0.4		1.9	0.7	2.3		4.5	0.4	7.8	
70th%Factor:	1.20	1.18	1.19		1.19	1.19	1.20		1.20	1.20	1.19		1.19	1.20	1.18	
HCM2k70thQ:	2.2	12.6	5.9		6.8	6.6	0.5		2.3	0.8	2.7		5.3	0.5	9.2	
85th%Factor:	1.58	1.51	1.55		1.55	1.55	1.60		1.58	1.59	1.58		1.56	1.60	1.53	
HCM2k85thQ:	3.0	16.1	7.8		8.9	8.7	0.7		3.0	1.1	3.6		7.0	0.7	11.9	
90th%Factor:	1.76	1.63	1.71		1.70	1.70	1.79		1.76	1.79	1.76		1.72	1.79	1.67	
HCM2k90thQ:	3.3	17.5	8.5		9.8	9.5	0.8		3.3	1.2	4.0		7.7	0.8	13.0	
95th%Factor:	2.04	1.83	1.95		1.94	1.94	2.09		2.04	2.08	2.03		1.97	2.09	1.89	
HCM2k95thQ:	3.8	19.6	9.8		11.1	10.8	0.9		3.9	1.4	4.6		8.8	0.9	14.7	
98th%Factor:	2.57	2.14	2.38		2.34	2.35	2.67		2.56	2.65	2.54		2.41	2.67	2.25	
HCM2k98thQ:	4.8	22.9	11.9		13.5	13.1	1.1		4.9	1.8	5.8		10.8	1.2	17.5	

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.516
Loss Time (sec):	12	Average Delay (sec/veh):	32.2
Optimal Cycle:	42	Level Of Service:	C

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:	PM Peak Hour											
Base Vol:	193	192	202	100	139	91	122	355	161	231	501	200
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	193	192	202	100	139	91	122	355	161	231	501	200
Added Vol:	4	7	0	0	5	2	3	25	2	0	38	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	197	199	202	100	144	93	125	380	163	231	539	200
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	214	216	220	109	157	101	136	413	177	251	586	217
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	214	216	220	109	157	101	136	413	177	251	586	217
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	214	216	220	109	157	101	136	413	177	251	586	217
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.12	0.04	0.14	0.06	0.03	0.06	0.08	0.08	0.11	0.14	0.12	0.14
Crit Moves:			****	****					****	****		
Green/Cycle:	0.25	0.27	0.27	0.12	0.13	0.13	0.18	0.22	0.22	0.28	0.32	0.32
Volume/Cap:	0.48	0.16	0.52	0.52	0.23	0.48	0.44	0.37	0.52	0.52	0.37	0.44
Delay/Veh:	32.5	28.0	32.1	43.6	38.9	41.7	37.7	33.6	35.9	31.6	26.6	27.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.5	28.0	32.1	43.6	38.9	41.7	37.7	33.6	35.9	31.6	26.6	27.8
LOS by Move:	C	C	C	D	D	D	D	C	D	C	C	C
HCM2k95thQ:	243	80	249	153	75	139	196	195	250	273	207	218

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	3 0	1	1	1 0	3 0	1	1	1 0	3 0	1	1	1 0	3 0	1	1
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	1	3	1		1	3	1		1	3	1		1	3	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00		1.00	0.91	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83		0.93	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.25	0.27	0.27	0.12	0.13	0.13	0.18	0.22	0.22	0.28	0.32	0.32
ArrivalType:		4			4			4			4	
ProgFactor:	0.93	0.89	0.93	0.98	0.96	0.97	0.96	0.94	0.95	0.92	0.88	0.89
Q1:	4.7	1.5	4.8	2.8	1.4	2.5	3.2	3.4	4.1	5.4	4.1	4.3
UpstreamVC:	0.68	0.68	0.68	0.34	0.34	0.34	0.00	0.00	0.00	0.87	0.87	0.87
UpstreamAdj:	0.67	0.67	0.67	0.95	0.95	0.95	0.00	0.00	0.00	0.37	0.37	0.37
EarlyArrAdj:	0.31	0.33	0.30	0.27	0.30	0.28	1.00	1.00	1.00	0.18	0.20	0.18
Q2:	0.3	0.1	0.3	0.3	0.1	0.2	0.7	0.6	1.0	0.2	0.1	0.1
HCM2KQueue:	5.0	1.6	5.1	3.1	1.5	2.8	4.0	3.9	5.1	5.6	4.2	4.4
70th%Factor:	1.19	1.20	1.19	1.19	1.20	1.19	1.19	1.19	1.19	1.19	1.19	1.19
HCM2k70thQ:	5.9	1.9	6.1	3.6	1.7	3.3	4.7	4.7	6.1	6.7	5.0	5.3
85th%Factor:	1.55	1.58	1.55	1.57	1.59	1.57	1.56	1.56	1.55	1.55	1.56	1.56
HCM2k85thQ:	7.7	2.5	7.9	4.8	2.3	4.4	6.2	6.2	8.0	8.7	6.5	6.9
90th%Factor:	1.71	1.77	1.71	1.74	1.77	1.75	1.73	1.73	1.71	1.70	1.72	1.72
HCM2k90thQ:	8.5	2.8	8.7	5.3	2.6	4.8	6.8	6.8	8.8	9.6	7.2	7.6
95th%Factor:	1.96	2.05	1.95	2.01	2.05	2.01	1.98	1.98	1.95	1.94	1.98	1.97
HCM2k95thQ:	9.7	3.2	10.0	6.1	3.0	5.6	7.8	7.8	10.0	10.9	8.3	8.7
98th%Factor:	2.38	2.59	2.37	2.49	2.59	2.51	2.44	2.44	2.37	2.35	2.42	2.41
HCM2k98thQ:	11.8	4.0	12.1	7.6	3.8	6.9	9.7	9.6	12.2	13.2	10.2	10.7

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 SR99 W Front & SB Ramps Morada

Average Delay (sec/veh): 10.7 Worst Case Level Of Service: C[24.4]

Street Name:	SR 99 West Frontage Rd						SR 99 SB Ramps (Morada Lane)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0	1 0	0	1 0	0 0	0 0	0	0 0	1 0	0	0 1
Volume Module:	PM Peak Hour											
Base Vol:	0	73	290	30	101	0	0	0	0	372	0	16
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	73	290	30	101	0	0	0	0	372	0	16
Added Vol:	0	0	25	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	73	315	30	101	0	0	0	0	372	0	16
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	79	342	33	110	0	0	0	0	404	0	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	79	342	33	110	0	0	0	0	404	0	17
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	422	xxxx	xxxxx	xxxx	xxxx	xxxxx	426	xxxx	251
Potent Cap.:	xxxx	xxxx	xxxxx	1137	xxxx	xxxxx	xxxx	xxxx	xxxxx	586	xxxx	788
Move Cap.:	xxxx	xxxx	xxxxx	1137	xxxx	xxxxx	xxxx	xxxx	xxxxx	573	xxxx	788
Volume/Cap:	xxxx	xxxx	xxxx	0.03	xxxx	xxxx	xxxx	xxxx	xxxx	0.71	xxxx	0.02
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxx	xxxx	xxxxx	142	xxxx	1.7
Control Del:	xxxxx	xxxx	xxxxx	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	25.0	xxxx	9.7
LOS by Move:	*	*	*	A	*	*	*	*	*	C	*	A
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			24.4		
ApproachLOS:	*			*			*			C		

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #20 SR99 W Front & SB Ramps Morada

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HevVeh:		2%				2%				2%				2%		
Grade:		0%				0%				0%				0%		
Peds/Hour:		0				0				0				0		
Pedestrian Walk Speed: 4.00 feet/sec																
LaneWidth:		12 feet				12 feet				12 feet				12 feet		
Time Period: 0.25 hour																
Upstream Signals:																
Link Index:		#218				#183										
Dist(miles):		0.250				0.250										
Speed (mph):		1.00				1.00										
SignalIndex:		#22				#12										
Cycle Time:		100 secs				100 secs										
InitVolume:	255	15			116	40										
Saturation:	1769	890			1769	999										
ArrivalType:	4	4			4	4										
G/C:	0.18	0.28			0.11	0.06										
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection																
P:	0.240	0.368			0.147	0.083										
gq1:	10.95	1.07			5.59	3.67										
gq2:	2.61	0.02			0.54	0.21										
gq:	13.56	1.09			6.13	3.88										
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons																
alpha:		0.550				0.550										
beta:		0.645				0.645										
ta (secs):		900.000				900.000										
F:		0.003				0.003										
f:	1.000	1.000			0.913	1.000										
vcmax:	73	3			31	12										
vcg:	77	4			32	12										
vcmin:	1000	1000			1000	1000										
tp:	0.0	0.0			0.0	0.0										
p:		0.000				0.000										
*** Computation 3: Platoon Event Periods																
pdom/psubo:		0.000/0.000/Unconstrained														
*** Computation 4: Conflicting Flows During Each Unblocked Period																
InitCnflVol:	0	xxxxx	xxxxx	422	xxxxx	xxxxx	434	597	110	426	426	251				
AdjCnflVol:	0	xxxxx	xxxxx	422	xxxxx	xxxxx	434	597	110	426	426	251				
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000				
ConflictVol:	0	xxxxx	xxxxx	422	xxxxx	xxxxx	434	597	110	426	426	251				
*** Computation 5: Capacity for Subject Movement During Unblocked Period																
InitPotCap:	1623	xxxxx	xxxxx	1137	xxxxx	xxxxx	532	416	944	586	521	788				
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000				
Potent Cap.:	1623	xxxxx	xxxxx	1137	xxxxx	xxxxx	532	416	944	586	521	788				

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #21 SR99 E Front & NB Ramps Morada

Average Delay (sec/veh): 17.0 Worst Case Level Of Service: D[31.4]

Street Name:	SR 99 East Frontage Rd								SR 99 NB Ramps (Morada Lane)							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	1	0	0	0	0	0	0	1	0	1	0	0	1	0	0
Volume Module: PM Peak Hour																
Base Vol:	190	223	0	0	262	13	120	0	547	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	190	223	0	0	262	13	120	0	547	0	0	0				
Added Vol:	0	0	0	0	0	0	0	0	38	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	190	223	0	0	262	13	120	0	585	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92				
PHF Volume:	207	242	0	0	285	14	130	0	636	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	207	242	0	0	285	14	130	0	636	0	0	0				
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx				
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	299	xxxx	xxxxx	xxxx	xxxx	xxxxx	947	xxxx	292	xxxx	xxxx	xxxxx				
Potent Cap.:	1262	xxxx	xxxxx	xxxx	xxxx	xxxxx	290	xxxx	747	xxxx	xxxx	xxxxx				
Move Cap.:	1262	xxxx	xxxxx	xxxx	xxxx	xxxxx	249	xxxx	747	xxxx	xxxx	xxxxx				
Volume/Cap:	0.16	xxxx	xxxx	xxxx	xxxx	xxxx	0.52	xxxx	0.85	xxxx	xxxx	xxxx				
Level Of Service Module:																
2Way95thQ:	14.6	xxxx	xxxxx	xxxx	xxxx	xxxxx	69.7	xxxx	249.3	xxxx	xxxx	xxxxx				
Control Del:	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	34.4	xxxx	30.8	xxxxx	xxxx	xxxxx				
LOS by Move:	A	*	*	*	*	*	D	*	D	*	*	*				
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT				
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	0.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*				
ApproachDel:	xxxxxx			xxxxxx			31.4			xxxxxx						
ApproachLOS:	*			*			D			*						

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #21 SR99 E Front & NB Ramps Morada

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:	#222			#188								
Dist(miles):	0.250			0.250								
Speed (mph):	1.00			1.00								
SignalIndex:	#23			#13								
Cycle Time:	100 secs			100 secs								
InitVolume:	327	48		41	22							
Saturation:	1165	810		1769	1348							
ArrivalType:	4	4		4	4							
G/C:	0.31	0.22		0.04	0.07							
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:	0.411	0.287		0.049	0.091							
gq1:	16.54	4.23		2.20	1.48							
gq2:	9.90	0.36		0.07	0.03							
gq:	26.44	4.59		2.27	1.52							
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:	0.550			0.550								
beta:	0.645			0.645								
ta (secs):	900.000			900.000								
F:	0.003			0.003								
f:	1.000	1.000		1.000	1.000							
vcmax:	92	12		13	6							
vcg:	97	14		13	7							
vcmin:	1000	1000		1000	1000							
tp:	0.0	0.0		0.0	0.0							
p:	0.000			0.000								
*** Computation 3: Platoon Event Periods												
pdom/psubo:	0.000/0.000/Unconstrained											
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	299	xxxxx	xxxxx	0	xxxxx	xxxxx	947	947	292	1265	954	242
AdjCnflVol:	299	xxxxx	xxxxx	0	xxxxx	xxxxx	947	947	292	1265	954	242
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	299	xxxxx	xxxxx	0	xxxxx	xxxxx	947	947	292	1265	954	242
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	1262	xxxxx	xxxxx	1623	xxxxx	xxxxx	290	261	747	146	259	796
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
Potent Cap.:	1262	xxxxx	xxxxx	1623	xxxxx	xxxxx	290	261	747	146	259	796

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 West Ln & West Ln Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.589
Loss Time (sec):	9	Average Delay (sec/veh):	19.1
Optimal Cycle:	40	Level Of Service:	B

Street Name:	West Lane						West Lane Frontage Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	1	0	1	0 1	1	0	0 1	0 0	1	1 0 0 1 0
Volume Module: PM Peak Hour												
Base Vol:	196	912	148	38	742	63	82	9	107	141	16	9
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	196	912	148	38	742	63	82	9	107	141	16	9
Added Vol:	0	175	0	0	112	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	196	1087	148	38	854	63	82	9	107	141	16	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	213	1182	161	41	928	68	89	10	116	153	17	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	213	1182	161	41	928	68	89	10	116	153	17	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	213	1182	161	41	928	68	89	10	116	153	17	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.91	0.91	0.93	0.92	0.92	0.71	0.71	0.83	0.64	0.93	0.93
Lanes:	1.00	1.76	0.24	1.00	1.86	0.14	0.90	0.10	1.00	1.00	0.64	0.36
Final Sat.:	1769	3058	416	1769	3262	241	1218	134	1583	1210	1127	634
Capacity Analysis Module:												
Vol/Sat:	0.12	0.39	0.39	0.02	0.28	0.28	0.07	0.07	0.07	0.13	0.02	0.02
Crit Moves:		****		****						****		
Green/Cycle:	0.21	0.66	0.66	0.04	0.49	0.49	0.21	0.21	0.21	0.21	0.21	0.21
Volume/Cap:	0.58	0.59	0.59	0.59	0.58	0.58	0.34	0.34	0.34	0.59	0.07	0.07
Delay/Veh:	38.2	10.1	10.1	59.8	18.8	18.8	34.0	34.0	33.9	38.8	31.4	31.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.2	10.1	10.1	59.8	18.8	18.8	34.0	34.0	33.9	38.8	31.4	31.4
LOS by Move:	D	B	B	E	B	B	C	C	C	D	C	C
HCM2k95thQ:	269	290	290	113	442	442	135	135	154	243	33	33

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 1	1	0	1	0 1	1	0	0	1 0	0	1	1	0 0	1	0
Lane Group:	L	RT		RT	L	RT		RT	LT	LT		R	L	RT		RT
#LnsInGrps:	1	2		2	1	2		2	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		5	5	xxxx		2	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.98	0.98		xxxx	0.99	0.99		xxxx	xxxx	0.85		xxxx	0.95	0.95	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.73	0.73	xxxxx		0.65	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.96	0.96		0.93	0.97	0.97		0.71	0.71	0.83		0.64	0.93	0.93	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	0.95		1.00	0.95	0.95		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.91	0.91		0.93	0.92	0.92		0.71	0.71	0.83		0.64	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North	South	East	West
Cycle Length, C:	xxxxxx	xxxxxx	100	100
Actual Green Time Per Lane Group, G:	xxxxxx	xxxxxx	20.47	20.47
Effective Green Time Per Lane Group, g:	xxxxxx	xxxxxx	21.47	21.47
Opposing Effective Green Time, go:	xxxxxx	xxxxxx	21.47	21.47
Number Of Opposing Lanes, No:	xxxxxx	xxxxxx	1	1
Number Of Lanes In Lane Group, N:	xxxxxx	xxxxxx	1	1
Adjusted Left-Turn Flow Rate, Vlt:	xxxxxx	xxxxxx	89	153
Proportion of Left Turns in Lane Group, Plt:	xxxxxx	xxxxxx	0.90	1.00
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	xxxxxx	xxxxxx	2.48	4.26
Adjusted Opposing Flow Rate, Vo:	xxxxxx	xxxxxx	27	99
Opposing Flow Per Lane Per Cycle, Volc:	xxxxxx	xxxxxx	0.75	2.75
Opposing Platoon Ratio, Rpo:	xxxxxx	xxxxxx	1.33	1.33
Lost Time Per Phase, tl:	xxxxxx	xxxxxx	3.00	3.00
Eff grn until arrival of left-turn car, gf:	xxxxxx	xxxxxx	0.78	0.00
Opposing Queue Ratio, qro:	xxxxxx	xxxxxx	0.71	0.71
Eff grn blocked by opposing queue, gq:	xxxxxx	xxxxxx	0.00	1.24
Eff grn while left turns filter thru, gu:	xxxxxx	xxxxxx	20.69	20.23
Max opposing cars arriving during gq-gf, n:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	0.86	0.81
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	0.90	1.00
Through-car Equivalents, el1:	xxxxxx	xxxxxx	1.44	1.45
Single Lane Through-car Equivalents, el2:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	xxxxxx	xxxxxx	0.18	0.19
Single Lane Left Turn Adjustment Factor, fm:	xxxxxx	xxxxxx	0.73	0.65
Left Turn Adjustment Factor, flt:	xxxxxx	xxxxxx	0.73	0.65

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.21	0.66	0.66	0.04	0.49	0.49	0.21	0.21	0.21	0.21	0.21	0.21
ArrivalType:		4			4			4			4	
ProgFactor:	0.96	0.46	0.46	0.99	0.79	0.79	0.93	0.93	0.93	0.95	0.91	0.91
Q1:	5.1	5.1	5.1	1.1	8.2	8.2	2.2	2.2	2.6	3.7	0.5	0.5
UpstreamVC:	0.58	0.58	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.79	0.79	0.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.32	0.64	0.64	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.4	0.9	0.9	1.1	1.4	1.4	0.5	0.5	0.5	1.3	0.1	0.1
HCM2KQueue:	5.5	6.0	6.0	2.2	9.5	9.5	2.7	2.7	3.1	5.0	0.6	0.6
70th%Factor:	1.19	1.19	1.19	1.19	1.18	1.18	1.19	1.19	1.19	1.19	1.20	1.20
HCM2k70thQ:	6.6	7.1	7.1	2.7	11.3	11.3	3.2	3.2	3.7	5.9	0.8	0.8
85th%Factor:	1.55	1.55	1.55	1.58	1.52	1.52	1.57	1.57	1.57	1.55	1.59	1.59
HCM2k85thQ:	8.6	9.3	9.3	3.5	14.5	14.5	4.2	4.2	4.8	7.7	1.0	1.0
90th%Factor:	1.70	1.70	1.70	1.76	1.65	1.65	1.75	1.75	1.74	1.71	1.79	1.79
HCM2k90thQ:	9.4	10.2	10.2	3.9	15.7	15.7	4.7	4.7	5.3	8.5	1.1	1.1
95th%Factor:	1.94	1.93	1.93	2.03	1.85	1.85	2.02	2.02	2.01	1.96	2.08	2.08
HCM2k95thQ:	10.8	11.6	11.6	4.5	17.7	17.7	5.4	5.4	6.2	9.7	1.3	1.3
98th%Factor:	2.35	2.33	2.33	2.54	2.18	2.18	2.51	2.51	2.49	2.38	2.65	2.65
HCM2k98thQ:	13.0	14.0	14.0	5.6	20.8	20.8	6.7	6.7	7.6	11.8	1.7	1.7

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 West Lane & Knickerbocker Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.583
Loss Time (sec): 12 Average Delay (sec/veh): 23.7
Optimal Cycle: 47 Level Of Service: C

Street Name:	West Lane						Knickerbocker Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:PM Peak Hour												
Base Vol:	72	1115	86	112	824	58	99	95	44	135	74	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	72	1115	86	112	824	58	99	95	44	135	74	58
Added Vol:	0	175	0	0	112	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	72	1290	86	112	936	58	99	95	44	135	74	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	78	1402	93	122	1017	63	108	103	48	147	80	63
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	78	1402	93	122	1017	63	108	103	48	147	80	63
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	78	1402	93	122	1017	63	108	103	48	147	80	63
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.88	0.88	0.93	0.93	0.93	0.93	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	2.82	0.18	1.00	0.68	0.32	1.00	0.56	0.44
Final Sat.:	1769	5083	1583	1769	4744	294	1769	1212	561	1769	975	764
Capacity Analysis Module:												
Vol/Sat:	0.04	0.28	0.06	0.07	0.21	0.21	0.06	0.09	0.09	0.08	0.08	0.08
Crit Moves:		****		****				****		****		
Green/Cycle:	0.10	0.47	0.47	0.12	0.49	0.49	0.12	0.15	0.15	0.14	0.17	0.17
Volume/Cap:	0.44	0.58	0.12	0.58	0.44	0.44	0.50	0.58	0.58	0.58	0.50	0.50
Delay/Veh:	44.0	19.5	14.8	45.9	16.7	16.7	42.8	43.2	43.2	43.6	39.2	39.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.0	19.5	14.8	45.9	16.7	16.7	42.8	43.2	43.2	43.6	39.2	39.2
LOS by Move:	D	B	B	D	B	B	D	D	D	D	D	D
HCM2k95thQ:	110	423	57	172	278	278	181	248	248	244	218	218

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	3	0	1	0	2	1	0	0	1	0	1	0	0	1	0
Lane Group:	L	T	R		L	RT	RT		L	RT	RT		L	RT	RT		
#LnsInGrps:	1	3	1		1	3	3		1	1	1		1	1	1		
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12		
CrsswalkWid:	8				8				8				8				
% Hev Veh:	2				2				2				2				
Grade:	0%				0%				0%				0%				
Parking/Hr:	No				No				No				No				
Bus Stp/Hr:	0				0				0				0				
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >																
Cnft Ped/Hr:	0				0				0				0				
ExclusiveRT:	Include				Include				Include				Include				
% RT Prtct:	0				0				0				0				
HCM Ops f(lt) Adj Case Module:																	
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		
HCM Ops Saturation Adj Module:																	
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
RT Adj:	xxxx	xxxx	0.85		xxxx	0.99	0.99		xxxx	0.95	0.95		xxxx	0.93	0.93		
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.97	0.97		0.93	0.93	0.93		0.93	0.92	0.92		
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00		
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.88	0.88		0.93	0.93	0.93		0.93	0.92	0.92		
Delay Adjustment Factor Module:																	
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >																
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >																
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.10	0.47	0.47		0.12	0.49	0.49		0.12	0.15	0.15		0.14	0.17	0.17	
ArrivalType:	4				4				4				4			
ProgFactor:	0.98	0.80	0.72		0.98	0.75	0.75		0.97	0.97	0.97		0.97	0.96	0.96	
Q1:	2.0	8.3	1.0		3.1	5.3	5.3		2.7	3.8	3.8		3.7	3.5	3.5	
UpstreamVC:	0.56	0.56	0.56		0.58	0.58	0.58		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.81	0.81	0.81		0.79	0.79	0.79		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	0.21	0.55	0.50		0.23	0.54	0.54		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.2	0.8	0.1		0.3	0.4	0.4		0.9	1.3	1.3		1.3	0.9	0.9	
HCM2KQueue:	2.2	9.1	1.1		3.4	5.8	5.8		3.6	5.1	5.1		5.0	4.4	4.4	
70th%Factor:	1.19	1.18	1.20		1.19	1.19	1.19		1.19	1.19	1.19		1.19	1.19	1.19	
HCM2k70thQ:	2.6	10.7	1.3		4.1	6.8	6.8		4.3	6.0	6.0		5.9	5.3	5.3	
85th%Factor:	1.58	1.52	1.59		1.57	1.55	1.55		1.57	1.55	1.55		1.55	1.56	1.56	
HCM2k85thQ:	3.4	13.8	1.8		5.4	8.9	8.9		5.7	7.9	7.9		7.7	6.9	6.9	
90th%Factor:	1.76	1.65	1.78		1.74	1.70	1.70		1.73	1.71	1.71		1.71	1.72	1.72	
HCM2k90thQ:	3.8	15.0	2.0		6.0	9.8	9.8		6.3	8.7	8.7		8.5	7.6	7.6	
95th%Factor:	2.03	1.86	2.06		2.00	1.94	1.94		1.99	1.95	1.95		1.95	1.97	1.97	
HCM2k95thQ:	4.4	16.9	2.3		6.9	11.1	11.1		7.3	9.9	9.9		9.7	8.7	8.7	
98th%Factor:	2.55	2.20	2.62		2.47	2.34	2.34		2.46	2.38	2.38		2.38	2.41	2.41	
HCM2k98thQ:	5.5	20.0	2.9		8.5	13.5	13.5		9.0	12.1	12.1		11.9	10.7	10.7	

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.728
Loss Time (sec):	12	Average Delay (sec/veh):	35.7
Optimal Cycle:	63	Level Of Service:	D

Street Name:	West Lane						Hammer Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	4 0	1	2 0	4 0	1	2 0	4 0	1	2 0	4 0	1
Volume Module:	PM Peak Hour											
Base Vol:	485	876	189	247	637	242	450	1224	181	368	1112	122
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	485	876	189	247	637	242	450	1224	181	368	1112	122
Added Vol:	0	175	0	0	112	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	485	1051	189	247	749	242	450	1224	181	368	1112	122
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	527	1142	205	268	814	263	489	1330	197	400	1209	133
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	527	1142	205	268	814	263	489	1330	197	400	1209	133
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	527	1142	205	268	814	263	489	1330	197	400	1209	133
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.15	0.17	0.13	0.08	0.12	0.17	0.14	0.20	0.12	0.12	0.18	0.08
Crit Moves:	****					****	****				****	
Green/Cycle:	0.21	0.30	0.30	0.14	0.23	0.23	0.20	0.28	0.28	0.16	0.24	0.24
Volume/Cap:	0.73	0.56	0.43	0.56	0.53	0.73	0.73	0.71	0.45	0.71	0.73	0.34
Delay/Veh:	40.5	29.8	28.8	41.7	34.2	43.0	41.7	33.9	30.6	43.7	36.4	31.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.5	29.8	28.8	41.7	34.2	43.0	41.7	33.9	30.6	43.7	36.4	31.6
LOS by Move:	D	C	C	D	C	D	D	C	C	D	D	C
HCM2k95thQ:	423	376	239	191	271	352	404	497	241	284	419	148

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2 0	4 0	1		2 0	4 0	1		2 0	4 0	1		2 0	4 0	1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	4	1		2	4	1		2	4	1		2	4	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.21	0.30	0.30	0.14	0.23	0.23	0.20	0.28	0.28	0.16	0.24	0.24
ArrivalType:		4			4			4			4	
ProgFactor:	0.97	0.92	0.90	0.97	0.94	0.97	0.97	0.95	0.92	0.98	0.96	0.92
Q1:	6.8	6.7	4.1	3.5	5.1	6.5	6.4	8.7	4.1	5.3	8.1	2.8
UpstreamVC:	0.00	0.00	0.00	0.44	0.44	0.44	0.00	0.00	0.00	0.65	0.65	0.65
UpstreamAdj:	0.00	0.00	0.00	0.90	0.90	0.90	0.00	0.00	0.00	0.71	0.71	0.71
EarlyArrAdj:	1.00	1.00	1.00	0.29	0.40	0.36	1.00	1.00	1.00	0.25	0.33	0.30
Q2:	2.3	1.2	0.7	0.4	0.4	0.9	2.2	2.2	0.8	0.6	0.8	0.2
HCM2KQueue:	9.1	8.0	4.9	3.9	5.6	7.4	8.6	10.9	4.9	5.9	9.0	2.9
70th%Factor:	1.18	1.18	1.19	1.19	1.19	1.18	1.18	1.18	1.19	1.19	1.18	1.19
HCM2k70thQ:	10.7	9.4	5.8	4.6	6.6	8.8	10.2	12.8	5.9	7.0	10.6	3.5
85th%Factor:	1.52	1.53	1.55	1.56	1.55	1.53	1.52	1.51	1.55	1.55	1.52	1.57
HCM2k85thQ:	13.8	12.2	7.6	6.0	8.6	11.4	13.2	16.4	7.7	9.1	13.7	4.6
90th%Factor:	1.65	1.67	1.71	1.73	1.70	1.68	1.66	1.63	1.71	1.70	1.66	1.75
HCM2k90thQ:	15.0	13.3	8.4	6.7	9.5	12.4	14.3	17.7	8.4	10.0	14.9	5.1
95th%Factor:	1.86	1.89	1.96	1.98	1.94	1.90	1.87	1.83	1.96	1.93	1.86	2.01
HCM2k95thQ:	16.9	15.0	9.6	7.6	10.8	14.1	16.2	19.9	9.6	11.4	16.7	5.9
98th%Factor:	2.20	2.24	2.39	2.44	2.35	2.26	2.21	2.13	2.38	2.34	2.20	2.50
HCM2k98thQ:	20.0	17.9	11.7	9.4	13.1	16.8	19.1	23.2	11.8	13.7	19.8	7.4

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.904
Loss Time (sec):	12	Average Delay (sec/veh):	39.8
Optimal Cycle:	111	Level Of Service:	D

Street Name:	Hammer Lane						Holman Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2 1	0	2	0 3	0 1	2	0 3	1 0	2	0 3 1 0
Volume Module:	PM Peak Hour											
Base Vol:	558	764	512	198	508	119	338	1081	324	473	963	75
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	558	764	512	198	508	119	338	1081	324	473	963	75
Added Vol:	0	11	0	0	7	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	558	775	512	198	515	119	338	1081	324	473	963	75
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	607	842	557	215	560	129	367	1175	352	514	1047	82
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	607	842	557	215	560	129	367	1175	352	514	1047	82
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	607	842	557	215	560	129	367	1175	352	514	1047	82
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.84	0.84	0.90	0.89	0.83	0.90	0.86	0.86	0.90	0.88	0.88
Lanes:	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.08	0.92	2.00	3.71	0.29
Final Sat.:	3432	3186	1593	3432	5083	1583	3432	5032	1508	3432	6219	484
Capacity Analysis Module:												
Vol/Sat:	0.18	0.26	0.35	0.06	0.11	0.08	0.11	0.23	0.23	0.15	0.17	0.17
Crit Moves:			****	****				****		****		
Green/Cycle:	0.28	0.39	0.39	0.07	0.18	0.18	0.16	0.26	0.26	0.17	0.26	0.26
Volume/Cap:	0.63	0.68	0.90	0.90	0.63	0.47	0.65	0.90	0.90	0.90	0.65	0.65
Delay/Veh:	32.7	26.6	36.8	80.0	39.7	38.3	41.7	43.1	43.1	58.8	33.9	33.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.7	26.6	36.8	80.0	39.7	38.3	41.7	43.1	43.1	58.8	33.9	33.9
LOS by Move:	C	C	D	E	D	D	D	D	D	E	C	C
HCM2k95thQ:	406	528	885	205	277	169	253	587	587	519	418	418

Note: Queue reported is the distance per lane in feet.

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	1	0	2	0 3	0	1	2	0 3	1	0	2	0 3	1	0
Lane Group:	L	RT		RT	L	T		R	L	RT		RT	L	RT		RT
#LnsInGrps:	2	3		3	2	3		1	2	4		4	2	4		4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.94	0.94		xxxx	xxxx	0.85		xxxx	0.97	0.97		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.92	0.92		0.93	0.98	0.83		0.93	0.95	0.95		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	0.91		0.97	0.91	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.84	0.84		0.90	0.89	0.83		0.90	0.86	0.86		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

EPAP + Reduce Proj Alt PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.28	0.39	0.39		0.07	0.18	0.18		0.16	0.26	0.26		0.17	0.26	0.26	
ArrivalType:		4				4				4				4		
ProgFactor:	0.94	0.90	0.96		1.00	0.97	0.96		0.97	0.98	0.98		0.99	0.95	0.95	
Q1:	7.1	9.6	15.4		3.1	5.1	3.1		4.8	11.1	11.1		7.2	7.3	7.3	
UpstreamVC:	0.00	0.00	0.00		0.23	0.23	0.23		0.71	0.71	0.71		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.98	0.98	0.98		0.64	0.64	0.64		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		0.21	0.37	0.33		0.22	0.30	0.30		1.00	1.00	1.00	
Q2:	1.6	2.0	5.6		1.1	0.6	0.3		0.4	2.0	2.0		4.3	1.7	1.7	
HCM2KQueue:	8.7	11.6	21.0		4.2	5.7	3.4		5.2	13.1	13.1		11.4	9.0	9.0	
70th%Factor:	1.18	1.17	1.16		1.19	1.19	1.19		1.19	1.17	1.17		1.18	1.18	1.18	
HCM2k70thQ:	10.3	13.7	24.3		4.9	6.8	4.0		6.2	15.4	15.4		13.4	10.6	10.6	
85th%Factor:	1.52	1.50	1.45		1.56	1.55	1.57		1.55	1.49	1.49		1.50	1.52	1.52	
HCM2k85thQ:	13.3	17.5	30.4		6.5	8.9	5.3		8.1	19.6	19.6		17.2	13.7	13.7	
90th%Factor:	1.66	1.62	1.54		1.72	1.70	1.74		1.71	1.61	1.61		1.63	1.66	1.66	
HCM2k90thQ:	14.4	18.9	32.3		7.2	9.7	5.9		8.9	21.1	21.1		18.6	14.9	14.9	
95th%Factor:	1.87	1.81	1.69		1.98	1.94	2.00		1.95	1.79	1.79		1.82	1.86	1.86	
HCM2k95thQ:	16.3	21.1	35.4		8.2	11.1	6.8		10.1	23.5	23.5		20.8	16.7	16.7	
98th%Factor:	2.21	2.11	1.90		2.43	2.34	2.47		2.37	2.06	2.06		2.12	2.20	2.20	
HCM2k98thQ:	19.2	24.5	39.9		10.1	13.4	8.4		12.3	27.1	27.1		24.2	19.8	19.8	

EPAP + Reduce Proj Alt PM Pk Hr

Future Queue Length Report (feet)

Node	Intersection	Northbound L	Northbound --	Northbound T	Northbound --	Northbound R	Southbound L	Southbound --	Southbound T	Southbound --	Southbound R	Eastbound L	Eastbound --	Eastbound T	Eastbound --	Eastbound R	Westbound L	Westbound --	Westbound T	Westbound --	Westbound R
#3	[HCM2k95thQ]:	501		23		66	34		592		592	263		917		598	154		894		894
#4	[HCM2k95thQ]:	387		101		110	26		433		433	145		721		721	237		582		2
#5	[HCM2k95thQ]:	101		614		803	258		479		136	233		1047		23	832		635		32
#6	[HCM2k95thQ]:	27		506		506	282		295		295	227		227		227	596		596		596
#7	[HCM2k95thQ]:	0		51		51	45		0		45	21		18		0	43		15		15
#8	[HCM2k95thQ]:	1029		181		129	59		348		547	655		549		975	262		905		12
#9	[2Way95thQ]:	xxxx		xxxx		xxxx	12.7		xxxx		2.3	0.8		xxxx		xxxx	xxxx		xxxx		xxxx
#10	[HCM2k95thQ]:	71		0		88	33		0		29	11		116		116	125		31		31
#11	[HCM2k95thQ]:	88		0		0	29		0		100	78		27		1	0		96		1
#14	[2Way95thQ]:	xxxx		xxxx		xxxx	21.7		21.7		xxxx	xxxx		xxxx		xxxx	10.3		xxxx		46.1
#15	[2Way95thQ]:	4.5		4.5		xxxx	xxxx		xxxx		xxxx	202		xxxx		5.3	xxxx		xxxx		xxxx
#17	[HCM2k95thQ]:	173		107		222	46		108		12	23		220		176	232		103		103
#18	[HCM2k95thQ]:	95		489		244	278		271		22	97		35		116	220		22		367
#19	[HCM2k95thQ]:	243		80		249	153		75		139	196		195		250	273		207		218
#20	[2Way95thQ]:	xxxx		xxxx		xxxx	2.2		2.2		xxxx	xxxx		xxxx		xxxx	142		xxxx		1.7
#21	[2Way95thQ]:	14.6		14.6		xxxx	xxxx		xxxx		xxxx	69.7		xxxx		249	xxxx		xxxx		xxxx
#24	[HCM2k95thQ]:	269		290		290	113		442		442	135		135		154	243		33		33
#25	[HCM2k95thQ]:	110		423		57	172		278		278	181		248		248	244		218		218
#26	[HCM2k95thQ]:	423		376		239	191		271		352	404		497		241	284		419		148
#27	[HCM2k95thQ]:	406		528		885	205		277		169	253		587		587	519		418		418

Existing AM Pk Hr

Scenario Report

Scenario:	Existing AM
Command:	Existing AM
Volume:	Exist AM
Geometry:	Existing
Impact Fee:	Default Impact Fee
Trip Generation:	AM Pk Hr
Trip Distribution:	EPAP AM
Paths:	EPAP No Build
Routes:	Default Route
Configuration:	Default Configuration

Existing AM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	C	32.1	0.555	C	32.1	0.555	+ 0.000 D/V
# 4 Eight Mile Rd & Davis Rd	C	29.4	0.655	C	29.4	0.655	+ 0.000 D/V
# 5 Eight Mile & Lower Sacto Rd	D	37.5	0.837	D	37.5	0.837	+ 0.000 D/V
# 6 West Lane & Armstrong Road	C	31.2	0.566	C	31.2	0.566	+ 0.000 D/V
# 7 West Lane & Ham Lane	A	9.3	0.235	A	9.3	0.235	+ 0.000 D/V
# 8 Eight Mile Rd & West Ln	D	36.0	0.737	D	36.0	0.737	+ 0.000 D/V
# 9 Eight Mile Road & Ham Lane	C	18.5	0.666	C	18.5	0.666	+ 0.000 D/V
# 10 Eight Mile & Leach Rd/St J	C	16.7	0.025	C	16.7	0.025	+ 0.000 D/V
# 11 Eight Mile & MickeGrove/Holman	C	16.7	0.050	C	16.7	0.050	+ 0.000 D/V
# 12 Eight Mile & SR 99 W Frontage	C	23.6	0.892	C	23.6	0.892	+ 0.000 V/C
# 13 Eight Mile & SR 99 E Frontage	B	14.6	0.601	B	14.6	0.601	+ 0.000 V/C
# 14 SR99 W Front & SB Ramps 8 Mile	B	10.5	0.270	B	10.5	0.270	+ 0.000 D/V
# 15 SR99 E Front & NB Ramps 8 Mile	C	15.1	0.236	C	15.1	0.236	+ 0.000 D/V
# 18 Morada Lane & West Lane	C	32.3	0.711	C	32.3	0.711	+ 0.000 D/V
# 19 Morada Lane & Holman Road	C	33.3	0.497	C	33.3	0.497	+ 0.000 D/V
# 20 SR99 W Front & SB Ramps Morada	C	18.6	0.505	C	18.6	0.505	+ 0.000 D/V
# 21 SR99 E Front & NB Ramps Morada	D	27.0	0.571	D	27.0	0.571	+ 0.000 D/V
# 23 Morada Ln & SR99 E Frontage Rd	F	103.1	1.336	F	103.1	1.336	+ 0.000 V/C
# 24 West Ln & West Ln Frontage Rd	C	21.1	0.568	C	21.1	0.568	+ 0.000 D/V
# 25 West Lane & Knickerbocker Dr	C	25.5	0.437	C	25.5	0.437	+ 0.000 D/V
# 26 West Lane & Hammer Lane	C	32.7	0.579	C	32.7	0.579	+ 0.000 D/V
# 27 Hammer Lane & Holman Road	C	30.2	0.498	C	30.2	0.498	+ 0.000 D/V

Existing AM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 9 Eight Mile Road & Ham Lane	No / No	??? / ???
# 10 Eight Mile & Leach Rd/St J	No / No	??? / ???
# 11 Eight Mile & MickeGrove/Holman	No / No	??? / ???
# 12 Eight Mile & SR 99 W Frontage	No	???
# 13 Eight Mile & SR 99 E Frontage	No	???
# 14 SR99 W Front & SB Ramps 8 Mile	No / No	??? / ???
# 15 SR99 E Front & NB Ramps 8 Mile	No / No	??? / ???
# 20 SR99 W Front & SB Ramps Morada	No / No	??? / ???
# 21 SR99 E Front & NB Ramps Morada	No / No	??? / ???
# 23 Morada Ln & SR99 E Frontage Rd	Yes	???

Existing AM Pk Hr

Peak Hour Delay Signal Warrant Report

****

Intersection #9 Eight Mile Road & Ham Lane

****

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 0 0 0			0 0 1! 0 0			0 1 0 0 0			0 0 0 1 0		
Initial Vol:	0	0	0	17	0	9	8	515	0	0	421	20
ApproachDel:	xxxxxx			xxxxxx			18.5			14.7		

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=2.7]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=523]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=990]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.8]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=441]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=990]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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Existing AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #9 Eight Mile Road & Ham Lane

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	0	0	1	0
Initial Vol:	0	0		0		17	0		9		8	515		0		0	421		20	

Major Street Volume: 26
Minor Approach Volume: 523
Minor Approach Volume Threshold: 1193

SIGNAL WARRANT DISCLAIMER
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Existing AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #10 Eight Mile & Leach Rd/St J

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	0	0	1	0
Initial Vol:	0	0		0		5	0		5		5	608		0		0	435		5	
ApproachDel:	xxxxxx					16.7					xxxxxx					xxxxxx				

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=10]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1063]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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Existing AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 Eight Mile & Leach Rd/St J

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	0	0	1	0
Initial Vol:	0	0		0		5	0		5		5	608		0		0	435		5	

Major Street Volume: 1053
Minor Approach Volume: 10
Minor Approach Volume Threshold: 206

SIGNAL WARRANT DISCLAIMER
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Existing AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #11 Eight Mile & MickeGrove/Holman

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	0	0	1	0
Initial Vol:	0	0		0		11	0		10		14	524		0		0	440		13	
ApproachDel:	xxxxxx					16.7					xxxxxx					xxxxxx				

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=21]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1012]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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Existing AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #11 Eight Mile & MickeGrove/Holman

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	0	0	1	0
Initial Vol:	0		0		0	11		0		10	14		524		0	0		440		13

Major Street Volume: 991
Minor Approach Volume: 21
Minor Approach Volume Threshold: 222

SIGNAL WARRANT DISCLAIMER
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Existing AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #12 Eight Mile & SR 99 W Frontage

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	1	0	0	1!	0	0	0	1	0	0	1	0	1	0	0	1
Initial Vol:	145		21		156	11		23		7	6		294		232	127		305		12

Major Street Volume: 976
Minor Approach Volume: 322
Minor Approach Volume Threshold: 385

SIGNAL WARRANT DISCLAIMER
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Existing AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #13 Eight Mile & SR 99 E Frontage

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	0	0	1!	0	0
Initial Vol:	158		34		25	4		30		51	23		106		329	66		234		7

Major Street Volume: 765
Minor Approach Volume: 217
Minor Approach Volume Threshold: 489

SIGNAL WARRANT DISCLAIMER
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Existing AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0		86		1	292		88		0	0		0		0	12		0		239
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					10.5				

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.7]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=251]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=718]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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Existing AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0		86		1	292		88		0	0		0		0	12		0		239

Major Street Volume: 467
Minor Approach Volume: 251
Minor Approach Volume Threshold: 532

SIGNAL WARRANT DISCLAIMER
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Existing AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	127		134		0	0		251		178	80		0		42	0		0		0
ApproachDel:	xxxxxx					xxxxxx					15.1					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.5]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=122]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=812]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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Existing AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	127	134			0		0	251	178		80		0		42		0		0	0

Major Street Volume: 690
Minor Approach Volume: 122
Minor Approach Volume Threshold: 534

SIGNAL WARRANT DISCLAIMER

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Existing AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #20 SR99 W Front & SB Ramps Morada

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	52	657		26	42		0		0	0		0		235		0		16	
ApproachDel:	xxxxxx				xxxxxx					xxxxxx						18.6				

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.3]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=251]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1028]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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Existing AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #20 SR99 W Front & SB Ramps Morada

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0		52		657	26		42		0	0		0		0	235		0		16

Major Street Volume: 777
Minor Approach Volume: 251
Minor Approach Volume Threshold: 372

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing AM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #21 SR99 E Front & NB Ramps Morada

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0
Initial Vol:	192		376		0	0		426		2	79		0		178	0		0		0
ApproachDel:	xxxxxx					xxxxxx					27.0					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.9]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=257]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1253]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Existing AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #21 SR99 E Front & NB Ramps Morada

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0
Initial Vol:	192	376			0		0	426		2	79		0	178		0		0		0

Major Street Volume: 996
Minor Approach Volume: 257
Minor Approach Volume Threshold: 294

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Existing AM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #23 Morada Ln & SR99 E Frontage Rd

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Stop Sign					Stop Sign				
Lanes:	0	0	1!	0	0	0	1	0	0	1	0	0	1!	0	0	0	0	1!	0	0
Initial Vol:	32	73		39		46	48		516		457	123		31		37	196		35	

Major Street Volume: 879
Minor Approach Volume: 610
Minor Approach Volume Threshold: 333

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Existing AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.555
Loss Time (sec):	12	Average Delay (sec/veh):	32.1
Optimal Cycle:	45	Level Of Service:	C

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1	0	1	1	0	0	1	0	1	0	2	0	1	1	0	1	1	0
Volume Module:	AM Peak Hour											
Base Vol:	462	113	202	11	73	140	82	380	164	142	441	24
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	462	113	202	11	73	140	82	380	164	142	441	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	502	123	220	12	79	152	89	413	178	154	479	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	502	123	220	12	79	152	89	413	178	154	479	26
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	502	123	220	12	79	152	89	413	178	154	479	26
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.88	0.88	0.93	0.93	0.83	0.93	0.92	0.92
Lanes:	2.00	1.00	1.00	1.00	0.34	0.66	1.00	2.00	1.00	1.00	1.90	0.10
Final Sat.:	3432	1862	1583	1769	575	1103	1769	3538	1583	1769	3328	181
Capacity Analysis Module:												
Vol/Sat:	0.15	0.07	0.14	0.01	0.14	0.14	0.05	0.12	0.11	0.09	0.14	0.14
Crit Moves:	****				****			****		****		
Green/Cycle:	0.26	0.49	0.49	0.02	0.25	0.25	0.10	0.21	0.21	0.16	0.27	0.27
Volume/Cap:	0.55	0.14	0.28	0.28	0.55	0.55	0.53	0.55	0.54	0.55	0.53	0.53
Delay/Veh:	32.5	14.1	15.4	51.7	34.4	34.4	46.2	36.2	36.8	41.4	31.5	31.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.5	14.1	15.4	51.7	34.4	34.4	46.2	36.2	36.8	41.4	31.5	31.5
LOS by Move:	C	B	B	D	C	C	D	D	D	D	C	C
HCM2k95thQ:	333	75	151	36	310	310	131	274	227	207	302	302

Note: Queue reported is the distance per lane in feet.

Existing AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	2	0	1	0	1	1	0	0	1	0	1	0	2	0	1	1	0	1	1	0				
Lane Group:	L		T		R	L		RT		RT	L		T		R	L		RT		RT				
#LnsInGrps:	2		1		1	1		1		1	1		2		1	1		2		2				
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12				
CrsswalkWid:	8					8					8					8								
% Hev Veh:	2					2					2					2								
Grade:	0%					0%					0%					0%								
Parking/Hr:	No					No					No					No								
Bus Stp/Hr:	0					0					0					0								
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:	0					0					0					0								
ExclusiveRT:	Include					Include					Include					Include								
% RT Prtct:	0					0					0					0								
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx		xxxx		1	xxxx		xxxx		1	xxxx		xxxx		1	xxxx		xxxx					
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98												
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
Parking Adj:	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00												
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	1.00	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00												
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
RT Adj:	xxxx	xxxx	0.85	xxxx	0.90	0.90	xxxx	xxxx	0.85	xxxx	0.99	0.99												
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx												
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.88	0.88	0.93	0.98	0.83	0.93	0.97	0.97												
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
MLF Sat Adj:	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95												
Fnl Sat Adj:	0.90	0.98	0.83	0.93	0.88	0.88	0.93	0.93	0.83	0.93	0.92	0.92												
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												

Existing AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.26	0.49	0.49	0.02	0.25	0.25	0.10	0.21	0.21	0.16	0.27	0.27
ArrivalType:	4			4			4			4		
ProgFactor:	0.93	0.70	0.72	0.99	0.94	0.94	0.98	0.95	0.95	0.97	0.93	0.93
Q1:	5.8	1.3	2.6	0.3	5.3	5.3	2.3	5.1	4.2	3.8	5.8	5.8
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.21	0.21	0.49	0.49	0.49
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.99	0.99	0.87	0.87	0.87
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.25	0.41	0.37	0.30	0.42	0.42
Q2:	1.2	0.2	0.4	0.4	1.2	1.2	0.3	0.5	0.4	0.4	0.5	0.5
HCM2KQueue:	7.0	1.5	3.0	0.7	6.5	6.5	2.6	5.6	4.6	4.2	6.3	6.3
70th%Factor:	1.18	1.20	1.19	1.20	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19
HCM2k70thQ:	8.3	1.7	3.6	0.8	7.6	7.6	3.1	6.7	5.5	5.0	7.5	7.5
85th%Factor:	1.54	1.59	1.57	1.59	1.54	1.54	1.58	1.55	1.56	1.56	1.54	1.54
HCM2k85thQ:	10.7	2.3	4.7	1.1	10.0	10.0	4.1	8.7	7.2	6.5	9.7	9.7
90th%Factor:	1.68	1.77	1.74	1.79	1.69	1.69	1.75	1.70	1.72	1.72	1.69	1.69
HCM2k90thQ:	11.7	2.6	5.2	1.2	10.9	10.9	4.5	9.6	7.9	7.2	10.6	10.6
95th%Factor:	1.91	2.05	2.01	2.08	1.92	1.92	2.02	1.94	1.96	1.98	1.92	1.92
HCM2k95thQ:	13.3	3.0	6.0	1.4	12.4	12.4	5.2	11.0	9.1	8.3	12.1	12.1
98th%Factor:	2.28	2.59	2.49	2.65	2.31	2.31	2.52	2.35	2.40	2.42	2.32	2.32
HCM2k98thQ:	16.0	3.8	7.5	1.8	14.9	14.9	6.5	13.3	11.1	10.2	14.6	14.6

Existing AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec): 100 Critical Vol./Cap.(X): 0.655
Loss Time (sec): 12 Average Delay (sec/veh): 29.4
Optimal Cycle: 54 Level Of Service: C

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	0 1	1	0 0	1 0	1	0 1	0 1	1	0 1	0 1
Volume Module:	AM Peak Hour											
Base Vol:	119	145	170	7	170	36	71	502	62	141	412	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	119	145	170	7	170	36	71	502	62	141	412	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	129	158	185	8	185	39	77	546	67	153	448	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	129	158	185	8	185	39	77	546	67	153	448	9
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	129	158	185	8	185	39	77	546	67	153	448	9
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.95	0.95	0.93	0.98	0.83	0.93	0.98	0.83
Lanes:	1.00	1.00	1.00	1.00	0.83	0.17	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1769	1862	1583	1769	1497	317	1769	1862	1583	1769	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.07	0.08	0.12	0.00	0.12	0.12	0.04	0.29	0.04	0.09	0.24	0.01
Crit Moves:	****				****			****		****		
Green/Cycle:	0.11	0.29	0.29	0.01	0.19	0.19	0.09	0.45	0.45	0.13	0.49	0.49
Volume/Cap:	0.65	0.29	0.40	0.40	0.65	0.65	0.49	0.65	0.10	0.65	0.49	0.01
Delay/Veh:	50.3	27.9	29.2	62.7	42.1	42.1	45.8	23.5	16.0	47.8	17.5	13.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.3	27.9	29.2	62.7	42.1	42.1	45.8	23.5	16.0	47.8	17.5	13.0
LOS by Move:	D	C	C	E	D	D	D	C	B	D	B	B
HCM2k95thQ:	244	172	216	37	346	346	111	503	44	271	346	5

Note: Queue reported is the distance per lane in feet.

Existing AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	1	0	1	0	0	1	0	1	0	1	1	0	1	0
Lane Group:	L	T	R		L	RT	RT		L	T	R		L	T	R	
#LnsInGrps:	1	1	1		1	1	1		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.97	0.97		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.95	0.95		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.98	0.83		0.93	0.95	0.95		0.93	0.98	0.83		0.93	0.98	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Existing AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.11	0.29	0.29		0.01	0.19	0.19		0.09	0.45	0.45		0.13	0.49	0.49	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.89	0.90		1.00	0.97	0.97		0.98	0.85	0.74		0.98	0.76	0.68	
Q1:	3.4	3.0	3.7		0.2	5.6	5.6		2.0	10.0	0.8		4.0	6.3	0.1	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.55	0.55	0.55		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.81	0.81	0.81		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.20	0.54	0.49		1.00	1.00	1.00	
Q2:	1.6	0.4	0.7		0.5	1.7	1.7		0.2	1.0	0.1		1.6	0.9	0.0	
HCM2KQueue:	5.0	3.4	4.4		0.7	7.3	7.3		2.2	11.0	0.9		5.6	7.3	0.1	
70th%Factor:	1.19	1.19	1.19		1.20	1.18	1.18		1.19	1.18	1.20		1.19	1.18	1.20	
HCM2k70thQ:	5.9	4.1	5.2		0.8	8.6	8.6		2.6	13.0	1.0		6.6	8.6	0.1	
85th%Factor:	1.55	1.57	1.56		1.59	1.54	1.54		1.58	1.51	1.59		1.55	1.54	1.60	
HCM2k85thQ:	7.7	5.4	6.9		1.1	11.2	11.2		3.5	16.6	1.4		8.7	11.2	0.2	
90th%Factor:	1.71	1.74	1.72		1.79	1.68	1.68		1.76	1.63	1.78		1.70	1.68	1.80	
HCM2k90thQ:	8.5	6.0	7.6		1.3	12.2	12.2		3.9	18.0	1.5		9.5	12.2	0.2	
95th%Factor:	1.95	2.00	1.97		2.08	1.90	1.90		2.03	1.83	2.07		1.94	1.90	2.10	
HCM2k95thQ:	9.7	6.9	8.7		1.5	13.8	13.8		4.5	20.1	1.8		10.9	13.8	0.2	
98th%Factor:	2.38	2.47	2.41		2.65	2.27	2.27		2.54	2.13	2.64		2.35	2.27	2.69	
HCM2k98thQ:	11.9	8.5	10.6		1.9	16.5	16.5		5.6	23.5	2.2		13.2	16.5	0.3	

Existing AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.837
Loss Time (sec):	12	Average Delay (sec/veh):	37.5
Optimal Cycle:	87	Level Of Service:	D

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 0	1	1 0	0 1	0	1 0	0 1	0
Volume Module:AM Peak Hour												
Base Vol:	39	267	273	36	393	83	71	588	18	209	464	39
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	39	267	273	36	393	83	71	588	18	209	464	39
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	42	290	297	39	427	90	77	639	20	227	504	42
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	290	297	39	427	90	77	639	20	227	504	42
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	42	290	297	39	427	90	77	639	20	227	504	42
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.98	0.93	0.97	0.97
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.03	1.00	0.92	0.08
Final Sat.:	1769	1862	1583	1769	1862	1583	1769	1799	55	1769	1697	143
Capacity Analysis Module:												
Vol/Sat:	0.02	0.16	0.19	0.02	0.23	0.06	0.04	0.36	0.36	0.13	0.30	0.30
Crit Moves:	****				****			****		****		
Green/Cycle:	0.03	0.27	0.27	0.03	0.27	0.27	0.07	0.42	0.42	0.15	0.50	0.50
Volume/Cap:	0.84	0.58	0.69	0.69	0.84	0.21	0.59	0.84	0.84	0.84	0.59	0.59
Delay/Veh:	117.9	33.2	37.6	78.9	45.8	28.2	51.8	33.6	33.6	61.0	18.5	18.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	117.9	33.2	37.6	78.9	45.8	28.2	51.8	33.6	33.6	61.0	18.5	18.5
LOS by Move:	F	C	D	E	D	C	D	C	C	E	B	B
HCM2k95thQ:	151	368	421	124	646	101	164	819	819	432	447	447

Note: Queue reported is the distance per lane in feet.

Existing AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	1 0	1		1 0	1 0	1		1 0	0 1	0		1 0	0 1	0	
Lane Group:	L	T	R		L	T	R		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	1.00	1.00		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.98		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.98		0.93	0.97	0.97	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Existing AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.03	0.27	0.27	0.03	0.27	0.27	0.07	0.42	0.42	0.15	0.50	0.50
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.93	0.95	1.00	0.97	0.89	0.99	0.92	0.92	0.99	0.77	0.77
Q1:	1.2	6.5	7.0	1.1	10.9	1.7	2.1	15.1	15.1	6.1	8.3	8.3
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	1.8	1.3	2.0	1.4	3.8	0.3	1.2	4.1	4.1	3.2	1.4	1.4
HCM2KQueue:	3.0	7.8	9.0	2.5	14.6	2.0	3.3	19.2	19.2	9.3	9.7	9.7
70th%Factor:	1.19	1.18	1.18	1.19	1.17	1.20	1.19	1.16	1.16	1.18	1.18	1.18
HCM2k70thQ:	3.6	9.2	10.7	2.9	17.1	2.4	3.9	22.3	22.3	11.0	11.4	11.4
85th%Factor:	1.57	1.53	1.52	1.58	1.48	1.58	1.57	1.46	1.46	1.52	1.52	1.52
HCM2k85thQ:	4.7	11.9	13.8	3.9	21.7	3.1	5.1	28.0	28.0	14.1	14.7	14.7
90th%Factor:	1.74	1.67	1.65	1.75	1.59	1.76	1.74	1.55	1.55	1.65	1.65	1.65
HCM2k90thQ:	5.3	13.0	14.9	4.3	23.3	3.5	5.7	29.8	29.8	15.4	15.9	15.9
95th%Factor:	2.01	1.89	1.86	2.02	1.77	2.04	2.00	1.71	1.71	1.86	1.85	1.85
HCM2k95thQ:	6.1	14.7	16.8	5.0	25.8	4.0	6.5	32.8	32.8	17.3	17.9	17.9
98th%Factor:	2.49	2.25	2.20	2.53	2.02	2.56	2.48	1.93	1.93	2.19	2.18	2.18
HCM2k98thQ:	7.5	17.5	19.9	6.2	29.6	5.1	8.1	37.0	37.0	20.4	21.0	21.0

Existing AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.566
Loss Time (sec): 12 Average Delay (sec/veh): 31.2
Optimal Cycle: 45 Level Of Service: C

Street Name:	West Lane						Armstrong Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	0 0	1!	0 0	0 0	1!	0 0
Volume Module:AM Peak Hour												
Base Vol:	4	354	62	166	483	36	49	166	5	48	93	77
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	354	62	166	483	36	49	166	5	48	93	77
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	4	385	67	180	525	39	53	180	5	52	101	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	385	67	180	525	39	53	180	5	52	101	84
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	385	67	180	525	39	53	180	5	52	101	84
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.91	0.91	0.93	0.92	0.92	0.97	0.97	0.97	0.92	0.92	0.92
Lanes:	1.00	1.70	0.30	1.00	1.86	0.14	0.22	0.76	0.02	0.22	0.43	0.35
Final Sat.:	1769	2944	516	1769	3259	243	409	1385	42	386	748	619
Capacity Analysis Module:												
Vol/Sat:	0.00	0.13	0.13	0.10	0.16	0.16	0.13	0.13	0.13	0.14	0.14	0.14
Crit Moves:		****		****					****	****		
Green/Cycle:	0.01	0.23	0.23	0.18	0.40	0.40	0.23	0.23	0.23	0.24	0.24	0.24
Volume/Cap:	0.40	0.57	0.57	0.57	0.40	0.40	0.57	0.57	0.57	0.57	0.57	0.57
Delay/Veh:	71.6	35.0	35.0	39.8	21.3	21.3	35.9	35.9	35.9	35.3	35.3	35.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	71.6	35.0	35.0	39.8	21.3	21.3	35.9	35.9	35.9	35.3	35.3	35.3
LOS by Move:	E	C	C	D	C	C	D	D	D	D	D	D
HCM2k95thQ:	29	324	324	273	266	266	325	325	325	321	321	321

Note: Queue reported is the distance per lane in feet.

Existing AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 1	1	0	1	0 1	1	0	0	0 1!	0	0	0	0 1!	0	0
Lane Group:	L	RT		RT	L	RT		RT	LTR	LTR		LTR	LTR	LTR		LTR
#LnsInGrps:	1	2		2	1	2		2	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		4	4		4	4	4		4
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98		0.98	0.98	0.98		0.98
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
RT Adj:	xxxx	0.98	0.98		xxxx	0.99	0.99		1.00	1.00		1.00	0.95	0.95		0.95
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.99	0.99		0.99	0.99	0.99		0.99
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
HCM Sat Adj:	0.93	0.96	0.96		0.93	0.97	0.97		0.97	0.97		0.97	0.92	0.92		0.92
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
MLF Sat Adj:	1.00	0.95	0.95		1.00	0.95	0.95		1.00	1.00		1.00	1.00	1.00		1.00
Fnl Sat Adj:	0.93	0.91	0.91		0.93	0.92	0.92		0.97	0.97		0.97	0.92	0.92		0.92
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00

Existing AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.01	0.23	0.23		0.18	0.40	0.40		0.23	0.23	0.23		0.24	0.24	0.24	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.95	0.95		0.96	0.83	0.83		0.95	0.95	0.95		0.94	0.94	0.94	
Q1:	0.1	5.5	5.5		4.4	4.8	4.8		5.6	5.6	5.6		5.5	5.5	5.5	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.4	1.2	1.2		1.2	0.7	0.7		1.2	1.2	1.2		1.2	1.2	1.2	
HCM2KQueue:	0.6	6.8	6.8		5.6	5.5	5.5		6.8	6.8	6.8		6.7	6.7	6.7	
70th%Factor:	1.20	1.18	1.18		1.19	1.19	1.19		1.18	1.18	1.18		1.18	1.18	1.18	
HCM2k70thQ:	0.7	8.0	8.0		6.7	6.5	6.5		8.1	8.1	8.1		7.9	7.9	7.9	
85th%Factor:	1.59	1.54	1.54		1.55	1.55	1.55		1.54	1.54	1.54		1.54	1.54	1.54	
HCM2k85thQ:	0.9	10.4	10.4		8.7	8.5	8.5		10.5	10.5	10.5		10.3	10.3	10.3	
90th%Factor:	1.79	1.69	1.69		1.70	1.70	1.70		1.68	1.68	1.68		1.69	1.69	1.69	
HCM2k90thQ:	1.0	11.4	11.4		9.6	9.3	9.3		11.5	11.5	11.5		11.3	11.3	11.3	
95th%Factor:	2.08	1.91	1.91		1.94	1.94	1.94		1.91	1.91	1.91		1.91	1.91	1.91	
HCM2k95thQ:	1.2	13.0	13.0		10.9	10.7	10.7		13.0	13.0	13.0		12.8	12.8	12.8	
98th%Factor:	2.66	2.29	2.29		2.35	2.36	2.36		2.29	2.29	2.29		2.30	2.30	2.30	
HCM2k98thQ:	1.5	15.5	15.5		13.2	12.9	12.9		15.6	15.6	15.6		15.4	15.4	15.4	

Existing AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.235
Loss Time (sec):	9	Average Delay (sec/veh):	9.3
Optimal Cycle:	24	Level Of Service:	A

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0	1	1	0
Volume Module:AM Peak Hour												
Base Vol:	9	5	17	4	8	54	13	413	0	10	524	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	5	17	4	8	54	13	413	0	10	524	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	10	5	18	4	9	59	14	449	0	11	570	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	5	18	4	9	59	14	449	0	11	570	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	10	5	18	4	9	59	14	449	0	11	570	4
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.85	0.85	0.85	0.86	0.86	0.86	0.93	0.93	0.95	0.93	0.93	0.93
Lanes:	0.29	0.16	0.55	0.06	0.12	0.82	1.00	2.00	0.00	1.00	1.98	0.02
Final Sat.:	468	260	883	99	199	1341	1769	3538	0	1769	3507	27
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.04	0.04	0.04	0.01	0.13	0.00	0.01	0.16	0.16
Crit Moves:					****		****				****	
Green/Cycle:	0.19	0.19	0.19	0.19	0.19	0.19	0.03	0.69	0.00	0.03	0.69	0.69
Volume/Cap:	0.11	0.11	0.11	0.24	0.24	0.24	0.24	0.18	0.00	0.18	0.24	0.24
Delay/Veh:	34.0	34.0	34.0	35.0	35.0	35.0	49.1	5.5	0.0	48.5	5.8	5.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.0	34.0	34.0	35.0	35.0	35.0	49.1	5.5	0.0	48.5	5.8	5.8
LOS by Move:	C	C	C	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	44	44	44	97	97	97	35	44	0	26	60	60

Note: Queue reported is the distance per lane in feet.

Existing AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L - T - R						L - T - R						L - T - R						L - T - R					
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0	1	1	0	1	0	1	1	0	1	0	1	1	0		
Lane Group:	LTR	LTR	LTR	LTR	LTR	LTR	L	RT	RT	L	RT	RT												
#LnsInGrps:	1	1	1	1	1	1	1	2	2	1	2	2												
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12												
CrsswalkWid:	8			8			8			8														
% Hev Veh:	2			2			2			2														
Grade:	0%			0%			0%			0%														
Parking/Hr:	No			No			No			No														
Bus Stp/Hr:	0			0			0			0														
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:	0			0			0			0														
ExclusiveRT:	Include			Include			Include			Include														
% RT Prtct:	0			0			0			0														
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	5	5	5	5	5	5	1	xxxx	xxxx	1	xxxx	xxxx												
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	xxxxx	1.00	1.00	1.00												
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	xxxxx	0.98	0.98	0.98												
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	xxxxx	1.00	1.00	1.00												
Parking Adj:	1.00	1.00	1.00	1.00	1.00	1.00	xxxx	1.00	xxxxx	xxxx	1.00	1.00												
Bus Stp Adj:	1.00	1.00	1.00	1.00	1.00	1.00	xxxx	1.00	xxxxx	xxxx	1.00	1.00												
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	xxxxx	1.00	1.00	1.00												
RT Adj:	0.93	0.93	0.93	0.89	0.89	0.89	xxxx	xxxx	xxxxx	xxxx	1.00	1.00												
LT Adj:	0.93	0.93	0.93	0.99	0.99	0.99	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx												
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
HCM Sat Adj:	0.85	0.85	0.85	0.86	0.86	0.86	0.93	0.98	1.00	0.93	0.98	0.98												
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95												
Fnl Sat Adj:	0.85	0.85	0.85	0.86	0.86	0.86	0.93	0.93	0.95	0.93	0.93	0.93												
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00												

Existing AM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Base Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	100	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	17.60	17.60	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	18.60	18.60	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	18.60	18.60	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	1	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	1	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	10	4	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	0.29	0.06	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	0.06	0.29	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	0.27	0.12	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	72	34	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	2.00	0.94	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	1.33	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	3.00	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	9.05	11.02	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	0.75	0.75	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	3.20	0.50	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	9.55	7.58	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	0.00	0.00	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	0.94	0.71	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	1.51	1.45	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	1.00	1.00	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	0.14	0.11	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	0.93	0.99	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	0.93	0.99	xxxxxx	xxxxxx

Existing AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.19	0.19	0.19	0.19	0.19	0.19	0.03	0.69	0.00	0.03	0.69	0.69
ArrivalType:	4			4			4			4		
ProgFactor:	0.93	0.93	0.93	0.94	0.94	0.94	0.99	0.27	1.00	0.99	0.28	0.28
Q1:	0.7	0.7	0.7	1.6	1.6	1.6	0.4	0.6	0.0	0.3	0.9	0.9
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Q2:	0.1	0.1	0.1	0.3	0.3	0.3	0.3	0.2	0.0	0.2	0.3	0.3
HCM2KQueue:	0.9	0.9	0.9	1.9	1.9	1.9	0.7	0.9	0.0	0.5	1.2	1.2
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	1.0	1.0	1.0	2.3	2.3	2.3	0.8	1.0	0.0	0.6	1.4	1.4
85th%Factor:	1.59	1.59	1.59	1.58	1.58	1.58	1.59	1.59	1.60	1.59	1.59	1.59
HCM2k85thQ:	1.4	1.4	1.4	3.0	3.0	3.0	1.1	1.4	0.0	0.8	1.9	1.9
90th%Factor:	1.78	1.78	1.78	1.76	1.76	1.76	1.79	1.78	1.80	1.79	1.78	1.78
HCM2k90thQ:	1.5	1.5	1.5	3.3	3.3	3.3	1.2	1.5	0.0	0.9	2.1	2.1
95th%Factor:	2.07	2.07	2.07	2.04	2.04	2.04	2.08	2.07	2.10	2.08	2.06	2.06
HCM2k95thQ:	1.8	1.8	1.8	3.9	3.9	3.9	1.4	1.8	0.0	1.1	2.4	2.4
98th%Factor:	2.64	2.64	2.64	2.56	2.56	2.56	2.65	2.64	2.70	2.66	2.61	2.61
HCM2k98thQ:	2.2	2.2	2.2	4.9	4.9	4.9	1.8	2.2	0.0	1.4	3.0	3.0

Existing AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.737
Loss Time (sec):	12	Average Delay (sec/veh):	36.0
Optimal Cycle:	65	Level Of Service:	D

Street Name:	West Lane								Eight Mile Road			
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 1	1	0	1	0 1	1	0	1	0 1	0	1	1	0 0	1	0
Volume Module:	AM Peak Hour															
Base Vol:	264	294	59		28	458	120		130	420	342		94	328	7	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	264	294	59		28	458	120		130	420	342		94	328	7	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	287	320	64		30	498	130		141	457	372		102	357	8	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	287	320	64		30	498	130		141	457	372		102	357	8	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	287	320	64		30	498	130		141	457	372		102	357	8	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.91	0.91		0.93	0.90	0.90		0.93	0.98	0.83		0.93	0.98	0.98	
Lanes:	1.00	1.67	0.33		1.00	1.58	0.42		1.00	1.00	1.00		1.00	0.98	0.02	
Final Sat.:	1769	2873	577		1769	2716	712		1769	1862	1583		1769	1818	39	
Capacity Analysis Module:																
Vol/Sat:	0.16	0.11	0.11		0.02	0.18	0.18		0.08	0.25	0.23		0.06	0.20	0.20	
Crit Moves:	****					****				****			****			
Green/Cycle:	0.22	0.41	0.41		0.06	0.25	0.25		0.12	0.33	0.33		0.08	0.29	0.29	
Volume/Cap:	0.74	0.27	0.27		0.27	0.74	0.74		0.67	0.74	0.71		0.74	0.67	0.67	
Delay/Veh:	43.5	20.0	20.0		46.0	38.0	38.0		50.4	34.1	33.5		63.7	34.4	34.4	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	43.5	20.0	20.0		46.0	38.0	38.0		50.4	34.1	33.5		63.7	34.4	34.4	
LOS by Move:	D	B	B		D	D	D		D	C	C		E	C	C	
HCM2k95thQ:	388	163	163		60	483	483		263	581	483		166	434	434	

Note: Queue reported is the distance per lane in feet.

Existing AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 1	1	0	1	0 1	1	0	1	0 1	0	1	1	0 0	1	0
Lane Group:	L	RT		RT	L	RT		RT	L	T		R	L	RT		RT
#LnsInGrps:	1	2		2	1	2		2	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.98	0.98		xxxx	0.97	0.97		xxxx	xxxx	0.85		xxxx	1.00	1.00	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.96	0.96		0.93	0.95	0.95		0.93	0.98	0.83		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	0.95		1.00	0.95	0.95		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.91	0.91		0.93	0.90	0.90		0.93	0.98	0.83		0.93	0.98	0.98	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Existing AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.22	0.41	0.41	0.06	0.25	0.25	0.12	0.33	0.33	0.08	0.29	0.29
ArrivalType:		4			4			4			4	
ProgFactor:	0.97	0.81	0.81	0.98	0.96	0.96	0.98	0.94	0.93	0.99	0.94	0.94
Q1:	7.2	3.0	3.0	0.8	8.1	8.1	3.7	10.5	8.4	2.8	8.4	8.4
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00
EarlyArrAdj:	0.42	0.61	0.61	1.00	1.00	1.00	1.00	1.00	1.00	0.22	0.51	0.51
Q2:	1.1	0.2	0.2	0.4	2.4	2.4	1.7	2.5	2.2	0.6	1.0	1.0
HCM2KQueue:	8.3	3.3	3.3	1.2	10.5	10.5	5.4	13.0	10.5	3.3	9.4	9.4
70th%Factor:	1.18	1.19	1.19	1.20	1.18	1.18	1.19	1.17	1.18	1.19	1.18	1.18
HCM2k70thQ:	9.8	3.9	3.9	1.4	12.4	12.4	6.4	15.2	12.4	4.0	11.0	11.0
85th%Factor:	1.53	1.57	1.57	1.59	1.51	1.51	1.55	1.49	1.51	1.57	1.52	1.52
HCM2k85thQ:	12.6	5.1	5.1	1.8	15.9	15.9	8.4	19.4	15.9	5.2	14.2	14.2
90th%Factor:	1.66	1.74	1.74	1.78	1.64	1.64	1.71	1.61	1.64	1.74	1.65	1.65
HCM2k90thQ:	13.8	5.7	5.7	2.1	17.2	17.2	9.2	20.9	17.2	5.8	15.4	15.4
95th%Factor:	1.88	2.00	2.00	2.06	1.83	1.83	1.94	1.79	1.83	2.00	1.86	1.86
HCM2k95thQ:	15.5	6.5	6.5	2.4	19.3	19.3	10.5	23.3	19.3	6.6	17.4	17.4
98th%Factor:	2.23	2.48	2.48	2.61	2.14	2.14	2.36	2.07	2.15	2.47	2.19	2.19
HCM2k98thQ:	18.4	8.1	8.1	3.0	22.6	22.6	12.7	26.8	22.6	8.2	20.5	20.5

Existing AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Average Delay (sec/veh): 16.4 Worst Case Level Of Service: C[18.5]

Street Name:	Ham Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Volume Module:	AM Peak Hour											
Base Vol:	0	0	0	17	0	9	8	515	0	0	421	20
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	17	0	9	8	515	0	0	421	20
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	18	0	10	9	560	0	0	458	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	18	0	10	9	560	0	0	458	22
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	xxxxx	xxxxx	6.5	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	xxxxx	xxxxx	4.0	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	0	xxxx	xxxxx	271	42	xxxxx	xxxx	47	0
Potent Cap.:	xxxx	xxxx	xxxxx	1623	xxxx	xxxxx	682	850	xxxxx	xxxx	845	1085
Move Cap.:	xxxx	xxxx	xxxxx	1623	xxxx	xxxxx	375	840	xxxxx	xxxx	835	1085
Volume/Cap:	xxxx	xxxx	xxxx	0.01	xxxx	xxxx	0.02	0.67	xxxx	xxxx	0.55	0.02
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.9	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	7.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	825	xxxx	xxxxx	xxxx	xxxx	844
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	5.7	xxxx	xxxxx	xxxxx	xxxx	3.7
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	18.5	xxxx	xxxxx	xxxxx	xxxx	14.7
Shared LOS:	*	*	*	*	*	*	C	*	*	*	*	B
ApproachDel:	xxxxxx			xxxxxx			18.5			14.7		
ApproachLOS:	*			*			C			B		

Note: Queue reported is the distance per lane in feet.

Existing AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:       #144             #83
Dist(miles):      0.000            0.000
Speed (mph):       0.00             0.00
SignalIndex:      #46              #7
Cycle Time:           0 secs           0 secs
InitVolume:     0     0          0     0
Saturation:     0     0          0     0
ArrivalType:    0     0          0     0
G/C:         0.00  0.00       0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:          0.000 0.000      0.000 0.000
gq1:         0.00  0.00       0.00  0.00
gq2:         0.00  0.00       0.00  0.00
gq:          0.00  0.00       0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:            0.000            0.000
beta:             0.000            0.000
ta (secs):        0.000            0.000
F:                0.000            0.000
f:          0.000 0.000      0.000 0.000
vcmax:          0     0          0     0
vcg:            0     0          0     0
vcmin:          0     0          0     0
tp:           0.0   0.0        0.0   0.0
p:                0.000            0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx    0 xxxxx xxxxx  271    42     5  322    47     0
AdjCnflVol:    0 xxxxx xxxxx    0 xxxxx xxxxx  271    42     5  322    47     0
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx    0 xxxxx xxxxx  271    42     5  322    47     0
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1623 xxxxx xxxxx 1623 xxxxx xxxxx  682   850  1078  631   845  1085
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1623 xxxxx xxxxx 1623 xxxxx xxxxx  682   850  1078  631   845  1085
```


Existing AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St J

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: C[16.7]

```
Street Name:       Leach Road/Street J                 Eight Mile Road
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  0    0  0  1! 0  0    0  1  0  0  0    0  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:AM Peak Hour
Base Vol:       0    0     0     5    0     5     5  608     0     0  435     5
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0     5    0     5     5  608     0     0  435     5
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0     0     5    0     5     5  661     0     0  473     5
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     0     5    0     5     5  661     0     0  473     5
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   6.4  6.5   6.2   4.1 xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx   3.5  4.0   3.3   2.2 xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  1147 1147   476   478 xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx   220  199   589  1084 xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx   219  198   589  1084 xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  0.02 0.00  0.01  0.01 xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.4 xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.3 xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx  319 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx  0.1 xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx 16.7 xxxxx   8.3 xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    C     *     A    *     *     *    *     *
ApproachDel:    xxxxxx             16.7           xxxxxx           xxxxxx
ApproachLOS:        *               C               *                *
```

Note: Queue reported is the distance per lane in feet.

Existing AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												

Existing AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: C[16.7]

Street Name:	Micke Grove Road/Holman Road									Eight Mile Road		
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 0			0 0 1! 0 0			0 1 0 0 0			0 0 0 1 0		
Volume Module:AM Peak Hour												
Base Vol:	0	0	0	11	0	10	14	524	0	0	440	13
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	11	0	10	14	524	0	0	440	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	12	0	11	15	570	0	0	478	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	12	0	11	15	570	0	0	478	14
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	1085	1085	485	492	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	240	216	582	1071	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	237	213	582	1071	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.05	0.00	0.02	0.01	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1.1	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	330	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	16.7	xxxxx	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	C	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			16.7			xxxxxx			xxxxxx		
ApproachLOS:	*			C			*			*		

Note: Queue reported is the distance per lane in feet.

Existing AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			12 feet			12 feet			12 feet	
Time Period: 0.25 hour												

Existing AM Pk Hr

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #12 Eight Mile & SR 99 W Frontage

Cycle (sec):	100	Critical Vol./Cap.(X):	0.892
Loss Time (sec):	12	Average Delay (sec/veh):	23.6
Optimal Cycle:	0	Level Of Service:	C

Street Name:	SR 99 West Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1	0	0 1	0 0	1!	0 0	0 1	0	0 1	0 1	0	0 1
Volume Module:AM Peak Hour												
Base Vol:	145	21	156	11	23	7	6	294	232	127	305	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	145	21	156	11	23	7	6	294	232	127	305	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	158	23	170	12	25	8	7	320	252	138	332	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	158	23	170	12	25	8	7	320	252	138	332	13
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	158	23	170	12	25	8	7	320	252	138	332	13
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.87	0.13	1.00	0.27	0.56	0.17	0.02	0.98	1.00	0.29	0.71	1.00
Final Sat.:	392	57	523	110	229	70	11	525	597	155	372	585
Capacity Analysis Module:												
Vol/Sat:	0.40	0.40	0.32	0.11	0.11	0.11	0.61	0.61	0.42	0.89	0.89	0.02
Crit Moves:		****			****			****			****	
Delay/Veh:	15.2	15.2	12.2	12.0	12.0	12.0	18.6	18.6	12.7	41.8	41.8	8.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.2	15.2	12.2	12.0	12.0	12.0	18.6	18.6	12.7	41.8	41.8	8.8
LOS by Move:	C	C	B	B	B	B	C	C	B	E	E	A
ApproachDel:		13.8			12.0			16.0			40.9	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		13.8			12.0			16.0			40.9	
LOS by Appr:		B			B			C			E	
AllWayAvgQ:	15.0	15.0	10.7	2.6	2.6	2.6	34.8	34.8	16.9	118	118	0.5

Note: Queue reported is the distance per lane in feet.

Existing AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM 4-Way Stop Method
Base Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Time Period: 0.25 hour																
HevVeh:	2%				2%				2%				2%			
Alpha Value: 0.01																
GroupType:	5				4B				5				5			
P[C1]:	0.02				0.01				0.04				0.09			
P[C2]:	0.00				0.02				0.34				0.29			
P[C3]:	0.27				0.12				0.06				0.13			
P[C4]:	0.64				0.46				0.51				0.44			
P[C5]:	0.07				0.39				0.05				0.04			
Padj[C1]:	0.027				0.032				0.022				0.021			
Padj[C2]:	0.017				0.022				0.009				0.009			
Padj[C3]:	-0.000				0.009				0.004				0.001			
Padj[C4]:	-0.038				-0.024				-0.030				-0.026			
Padj[C5]:	-0.007				-0.039				-0.005				-0.004			
Lanes:	L1		L2		L1		L2		L1		L2		L1		L2	
LaneType:	RITE		LTTHRU		LTR		NOLANE		RITE		LTTHRU		RITE		LTTHRU	
HeadwayAdj:	-0.666		0.471		-0.015		xx.xxx		-0.666		0.044		-0.666		0.181	
Volume:	170		180		45		xxxxxx		252		326		13		470	
Capacity:	523		449		408		xxxxx		597		536		585		526	
DegOfUtil:	0.31		0.39		0.10		x.xx		0.41		0.60		0.02		0.89	
DepHeadway:	6.60		7.73		8.12		xx.xx		5.89		6.60		5.94		6.79	
ServiceTime:	4.3		5.4		6.1		xx.x		3.6		4.3		3.6		4.5	
Delay:	12.2		15.2		12.0		xxx.x		12.7		18.6		8.8		41.8	
Queue:	0.4		0.6		0.1		xxx.x		0.7		1.4		0.0		4.7	

Approach:	North Bound	South Bound	East Bound	West Bound
ApproachDel:	13.8	12.0	16.0	40.9
Delay Adj:	1.00	1.00	1.00	1.00
ApprAdjDel:	13.8	12.0	16.0	40.9
LOS by Appr:	B	B	C	E

OverallDel: 23.6
OverallLOS: C

Existing AM Pk Hr

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #13 Eight Mile & SR 99 E Frontage

Cycle (sec): 100 Critical Vol./Cap.(X): 0.601
Loss Time (sec): 12 Average Delay (sec/veh): 14.6
Optimal Cycle: 0 Level Of Service: B

Street Name:	SR 99 East Frontage Road								Eight Mile Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	0	1	0	0 1	0	1	0	0 1	0	1	0	0 1	0	0	1!	0 0
Volume Module: AM Peak Hour																
Base Vol:	158	34	25		4	30	51		23	106	329		66	234	7	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	158	34	25		4	30	51		23	106	329		66	234	7	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	172	37	27		4	33	55		25	115	358		72	254	8	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	172	37	27		4	33	55		25	115	358		72	254	8	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	172	37	27		4	33	55		25	115	358		72	254	8	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	0.82	0.18	1.00		0.12	0.88	1.00		0.18	0.82	1.00		0.21	0.77	0.02	
Final Sat.:	389	84	552		53	398	499		101	464	645		119	423	13	
Capacity Analysis Module:																
Vol/Sat:	0.44	0.44	0.05		0.08	0.08	0.11		0.25	0.25	0.55		0.60	0.60	0.60	
Crit Moves:	****						****				****			****		
Delay/Veh:	15.0	15.0	9.1		10.5	10.5	9.9		10.9	10.9	14.3		17.8	17.8	17.8	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	15.0	15.0	9.1		10.5	10.5	9.9		10.9	10.9	14.3		17.8	17.8	17.8	
LOS by Move:	B	B	A		B	B	A		B	B	B		C	C	C	
ApproachDel:	14.3				10.1				13.3				17.8			
Delay Adj:	1.00				1.00				1.00				1.00			
ApprAdjDel:	14.3				10.1				13.3				17.8			
LOS by Appr:	B				B				B				C			
AllWayAvgQ:	16.7	16.7	1.1		1.8	1.8	2.5		7.7	7.7	27.5		32.9	32.9	32.9	

Note: Queue reported is the distance per lane in feet.

Existing AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM 4-Way Stop Method
Base Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Time Period: 0.25 hour																
HevVeh:	2%				2%				2%				2%			
Alpha Value: 0.01																
GroupType:	5				5				5				4B			
P[C1]:	0.12				0.08				0.19				0.16			
P[C2]:	0.02				0.06				0.27				0.30			
P[C3]:	0.40				0.26				0.19				0.16			
P[C4]:	0.40				0.42				0.30				0.33			
P[C5]:	0.06				0.17				0.04				0.05			
Padj[C1]:	0.023				0.025				0.017				0.018			
Padj[C2]:	0.014				0.015				0.007				0.007			
Padj[C3]:	-0.007				-0.000				-0.002				-0.001			
Padj[C4]:	-0.023				-0.024				-0.018				-0.019			
Padj[C5]:	-0.006				-0.017				-0.004				-0.005			

Lanes:	L1	L2	L1	L2	L1	L2	L1	L2
LaneType:	RITE	LTTHRU	RITE	LTTHRU	RITE	LTTHRU	LTR	NOLANE
HeadwayAdj:	-0.666	0.445	-0.666	0.093	-0.666	0.123	0.063	xx.xxx
Volume:	27	209	55	37	358	140	334	xxxxxx
Capacity:	552	473	499	451	645	564	555	xxxxx
DegOfUtil:	0.05	0.42	0.10	0.07	0.54	0.24	0.59	x.xx
DepHeadway:	6.09	7.21	6.44	7.20	5.42	6.21	6.31	xx.xx
ServiceTime:	3.8	4.9	4.1	4.9	3.1	3.9	4.3	xx.x
Delay:	9.1	15.0	9.9	10.5	14.3	10.9	17.8	xxx.x
Queue:	0.0	0.7	0.1	0.1	1.1	0.3	1.3	xxx.x

Approach:	North Bound	South Bound	East Bound	West Bound
ApproachDel:	14.3	10.1	13.3	17.8
Delay Adj:	1.00	1.00	1.00	1.00
ApprAdjDel:	14.3	10.1	13.3	17.8
LOS by Appr:	B	B	B	C

OverallDel: 14.6
OverallLOS: B

Existing AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Average Delay (sec/veh): 7.0 Worst Case Level Of Service: B[10.5]

Street Name:	SR 99 West Frontage Rd								SR 99 SB Ramps (Eight Mile Rd)							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	1 0	0	1	0	0 0	0	0	0	0 0	1	0	0	0 1
Volume Module:AM Peak Hour																
Base Vol:	0	86		1	292	88		0	0	0		0	12	0		239
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	0	86		1	292	88		0	0	0		0	12	0		239
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92
PHF Volume:	0	93		1	317	96		0	0	0		0	13	0		260
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
FinalVolume:	0	93		1	317	96		0	0	0		0	13	0		260
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx		xxxxx	4.1	xxxx		xxxxx	xxxxx	xxxx		xxxxx	6.4	xxxx		6.2
FollowUpTim:	xxxxx	xxxx		xxxxx	2.2	xxxx		xxxxx	xxxxx	xxxx		xxxxx	3.5	xxxx		3.3
Capacity Module:																
Cnflict Vol:	xxxx	xxxx		xxxxx	95	xxxx		xxxxx	xxxx	xxxx		xxxxx	824	xxxx		94
Potent Cap.:	xxxx	xxxx		xxxxx	1499	xxxx		xxxxx	xxxx	xxxx		xxxxx	343	xxxx		963
Move Cap.:	xxxx	xxxx		xxxxx	1499	xxxx		xxxxx	xxxx	xxxx		xxxxx	275	xxxx		963
Volume/Cap:	xxxx	xxxx		xxxx	0.21	xxxx		xxxx	xxxx	xxxx		xxxx	0.05	xxxx		0.27
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx		xxxxx	20.0	xxxx		xxxxx	xxxx	xxxx		xxxxx	3.7	xxxx		27.4
Control Del:	xxxxx	xxxx		xxxxx	8.0	xxxx		xxxxx	xxxxx	xxxx		xxxxx	18.8	xxxx		10.1
LOS by Move:	*	*		*	A	*		*	*	*		*	C	*		B
Movement:	LT -	LTR -		RT	LT -	LTR -		RT	LT -	LTR -		RT	LT -	LTR -		RT
Shared Cap.:	xxxx	xxxx		xxxxx	xxxx	xxxx		xxxxx	xxxx	xxxx		xxxxx	xxxx	xxxx		xxxxx
SharedQueue:	xxxxx	xxxx		xxxxx	0.8	xxxx		xxxxx	xxxxx	xxxx		xxxxx	xxxxx	xxxx		xxxxx
Shrd ConDel:	xxxxx	xxxx		xxxxx	8.0	xxxx		xxxxx	xxxxx	xxxx		xxxxx	xxxxx	xxxx		xxxxx
Shared LOS:	*	*		*	A	*		*	*	*		*	*	*		*
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				10.5			
ApproachLOS:	*				*				*				B			

Note: Queue reported is the distance per lane in feet.

Existing AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #14 SR99 W Front & SB Ramps 8 Mile

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:       #218
Dist(miles):      0.250
Speed (mph):       1.00
SignalIndex:      #22
Cycle Time:         100 secs
InitVolume:   425    14
Saturation:  1769  1234
ArrivalType:    4     4
G/C:         0.35  0.19
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:          0.460 0.254
gq1:        12.97  0.85
gq2:         6.11  0.01
gq:         19.08  0.86
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:            0.550
beta:             0.645
ta (secs):       900.000
F:                0.003
f:          0.215 1.000
vcmax:         22     3
vcg:           27     4
vcmin:       1000  1000
tp:           0.0   0.0
p:                0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx   95 xxxxx xxxxx  954   825    96  824   824    94
AdjCnflVol:    0 xxxxx xxxxx   95 xxxxx xxxxx  954   825    96  824   824    94
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx   95 xxxxx xxxxx  954   825    96  824   824    94
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1623 xxxxx xxxxx 1499 xxxxx xxxxx  238   308   961  343   308   963
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1623 xxxxx xxxxx 1499 xxxxx xxxxx  238   308   961  343   308   963
```


Existing AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Average Delay (sec/veh): 3.6 Worst Case Level Of Service: C[15.1]

```
Street Name:      SR 99 East Frontage Rd        SR 99 NB Ramps (Eight Mile Rd)
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  0  0    0  0  1  0  1    1  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:AM Peak Hour
Base Vol:     127  134     0     0  251   178    80    0    42     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  127  134     0     0  251   178    80    0    42     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:   138  146     0     0  273   193    87    0    46     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:  138  146     0     0  273   193    87    0    46     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4 xxxx   6.2 xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  466 xxxx xxxxx  xxxx xxxx xxxxx   695 xxxx   273  xxxx xxxx xxxxx
Potent Cap.: 1106 xxxx xxxxx  xxxx xxxx xxxxx   412 xxxx   771  xxxx xxxx xxxxx
Move Cap.:   1106 xxxx xxxxx  xxxx xxxx xxxxx   369 xxxx   771  xxxx xxxx xxxxx
Volume/Cap:  0.12 xxxx  xxxx  xxxx xxxx  xxxx  0.24 xxxx  0.06  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   10.7 xxxx xxxxx  xxxx xxxx xxxxx  22.6 xxxx   4.7  xxxx xxxx xxxxx
Control Del:  8.7 xxxx xxxxx xxxxx xxxx xxxxx  17.7 xxxx  10.0 xxxxx xxxx xxxxx
LOS by Move:    A    *     *     *    *     *     C    *     A     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:  0.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:  8.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     A    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx             15.1           xxxxxx
ApproachLOS:         *                *                C                *
```

Note: Queue reported is the distance per lane in feet.

Existing AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	0%			0%			0%			0%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												

Existing AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.711
Loss Time (sec):	12	Average Delay (sec/veh):	32.3
Optimal Cycle:	61	Level Of Service:	C

Street Name:	West Lane						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 2	0 1	1	0 2	0 1	0	1 0	0 1	1	0 1!	0 0
Volume Module:AM Peak Hour												
Base Vol:	78	389	254	283	573	24	19	81	66	252	55	165
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	78	389	254	283	573	24	19	81	66	252	55	165
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	85	423	276	308	623	26	21	88	72	274	60	179
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	85	423	276	308	623	26	21	88	72	274	60	179
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	85	423	276	308	623	26	21	88	72	274	60	179
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.93	0.93	0.83	0.97	0.97	0.83	0.90	0.90	0.90
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	0.19	0.81	1.00	1.36	0.16	0.48
Final Sat.:	3432	3538	1583	1769	3538	1583	351	1495	1583	2345	273	820
Capacity Analysis Module:												
Vol/Sat:	0.02	0.12	0.17	0.17	0.18	0.02	0.06	0.06	0.05	0.12	0.22	0.22
Crit Moves:			****	****			****				****	
Green/Cycle:	0.06	0.25	0.25	0.24	0.43	0.43	0.08	0.13	0.13	0.26	0.31	0.31
Volume/Cap:	0.41	0.49	0.71	0.71	0.41	0.04	0.71	0.45	0.35	0.45	0.71	0.71
Delay/Veh:	46.6	32.8	40.6	40.0	19.9	16.6	59.2	41.5	40.6	31.3	34.0	34.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.6	32.8	40.6	40.0	19.9	16.6	59.2	41.5	40.6	31.3	34.0	34.0
LOS by Move:	D	C	D	D	B	B	E	D	D	C	C	C
HCM2k95thQ:	92	284	414	447	279	19	233	174	115	250	498	498

Note: Queue reported is the distance per lane in feet.

Existing AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0	1	1	0	2	0	1	0	1	0	1	1!	0
Lane Group:	L	T	R		L	T	R		LT	LT	R		LTR	LTR	LTR	
#LnsInGrps:	2	2	1		1	2	1		1	1	1		2	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		4	4	xxxx		4	4	4	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		1.00	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		1.00	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		0.95	0.95	0.95	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.99	0.99	xxxxx		0.97	0.97	0.97	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.97	0.97	0.83		0.90	0.90	0.90	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		1.00	0.95	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.90	0.93	0.83		0.93	0.93	0.83		0.97	0.97	0.83		0.90	0.90	0.90	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Existing AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.06	0.25	0.25		0.24	0.43	0.43		0.08	0.13	0.13		0.26	0.31	0.31	
ArrivalType:	4				4				4				4			
ProgFactor:	0.99	0.93	0.96		0.96	0.81	0.75		0.99	0.97	0.97		0.92	0.94	0.94	
Q1:	1.2	4.9	6.7		7.5	5.1	0.3		2.9	2.7	1.8		4.3	8.7	8.7	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.6	0.9	2.1		2.2	0.7	0.0		1.8	0.8	0.5		0.8	2.2	2.2	
HCM2KQueue:	1.8	5.9	8.9		9.7	5.8	0.4		4.8	3.5	2.3		5.1	10.9	10.9	
70th%Factor:	1.20	1.19	1.18		1.18	1.19	1.20		1.19	1.19	1.19		1.19	1.18	1.18	
HCM2k70thQ:	2.1	7.0	10.5		11.4	6.9	0.4		5.7	4.2	2.7		6.1	12.8	12.8	
85th%Factor:	1.58	1.55	1.52		1.52	1.55	1.60		1.56	1.57	1.58		1.55	1.51	1.51	
HCM2k85thQ:	2.8	9.1	13.5		14.7	8.9	0.6		7.4	5.5	3.6		7.9	16.5	16.5	
90th%Factor:	1.77	1.70	1.66		1.65	1.70	1.79		1.72	1.74	1.76		1.71	1.63	1.63	
HCM2k90thQ:	3.2	10.0	14.7		15.9	9.8	0.6		8.2	6.1	4.0		8.8	17.8	17.8	
95th%Factor:	2.04	1.93	1.87		1.85	1.94	2.09		1.96	1.99	2.03		1.95	1.83	1.83	
HCM2k95thQ:	3.7	11.3	16.5		17.9	11.2	0.7		9.3	7.0	4.6		10.0	19.9	19.9	
98th%Factor:	2.57	2.34	2.21		2.18	2.34	2.67		2.39	2.46	2.54		2.37	2.13	2.13	
HCM2k98thQ:	4.6	13.7	19.6		21.0	13.5	1.0		11.4	8.6	5.8		12.2	23.3	23.3	

Existing AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.497
Loss Time (sec):	12	Average Delay (sec/veh):	33.3
Optimal Cycle:	41	Level Of Service:	C

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:	AM Peak Hour											
Base Vol:	184	81	88	283	158	165	128	549	133	140	477	169
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	184	81	88	283	158	165	128	549	133	140	477	169
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	200	88	96	308	172	179	139	597	145	152	518	184
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	200	88	96	308	172	179	139	597	145	152	518	184
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	200	88	96	308	172	179	139	597	145	152	518	184
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.11	0.02	0.06	0.17	0.03	0.11	0.08	0.12	0.09	0.09	0.10	0.12
Crit Moves:			****	****				****		****		
Green/Cycle:	0.24	0.12	0.12	0.35	0.24	0.24	0.17	0.24	0.24	0.17	0.24	0.24
Volume/Cap:	0.48	0.14	0.50	0.50	0.14	0.48	0.48	0.50	0.39	0.50	0.42	0.48
Delay/Veh:	33.8	39.4	43.1	26.2	30.3	33.9	39.0	33.4	32.8	38.7	32.1	33.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.8	39.4	43.1	26.2	30.3	33.9	39.0	33.4	32.8	38.7	32.1	33.3
LOS by Move:	C	D	D	C	C	C	D	C	C	D	C	C
HCM2k95thQ:	239	42	135	311	68	216	209	285	186	192	212	211

Note: Queue reported is the distance per lane in feet.

Existing AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	1	3	1	1	3	1	1	3	1	1	3	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Fnl Sat Adj:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Existing AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.24	0.12	0.12		0.35	0.24	0.24		0.17	0.24	0.24		0.17	0.24	0.24	
ArrivalType:		4				4				4				4		
ProgFactor:	0.94	0.96	0.97		0.88	0.91	0.94		0.96	0.94	0.93		0.96	0.93	0.93	
Q1:	4.5	0.8	2.4		5.9	1.3	4.0		3.4	4.9	3.1		3.7	4.1	4.1	
UpstreamVC:	0.29	0.29	0.29		0.00	0.00	0.00		0.00	0.00	0.00		0.76	0.76	0.76	
UpstreamAdj:	0.97	0.97	0.97		1.00	1.00	1.00		0.00	0.00	0.00		0.57	0.57	0.57	
EarlyArrAdj:	0.42	0.29	0.26		0.55	0.45	0.41		1.00	1.00	1.00		0.21	0.26	0.24	
Q2:	0.4	0.0	0.3		0.5	0.1	0.4		0.9	1.0	0.6		0.2	0.2	0.2	
HCM2KQueue:	4.9	0.8	2.7		6.5	1.3	4.4		4.2	5.9	3.8		3.9	4.3	4.3	
70th%Factor:	1.19	1.20	1.19		1.19	1.20	1.19		1.19	1.19	1.19		1.19	1.19	1.19	
HCM2k70thQ:	5.8	1.0	3.2		7.7	1.6	5.2		5.0	7.0	4.5		4.6	5.1	5.1	
85th%Factor:	1.56	1.59	1.57		1.54	1.59	1.56		1.56	1.55	1.56		1.56	1.56	1.56	
HCM2k85thQ:	7.6	1.3	4.2		10.0	2.1	6.9		6.6	9.1	5.9		6.1	6.7	6.7	
90th%Factor:	1.71	1.78	1.75		1.69	1.77	1.72		1.72	1.70	1.73		1.73	1.72	1.72	
HCM2k90thQ:	8.4	1.5	4.7		10.9	2.4	7.6		7.3	10.0	6.5		6.7	7.4	7.4	
95th%Factor:	1.96	2.07	2.02		1.92	2.06	1.97		1.97	1.93	1.99		1.98	1.97	1.97	
HCM2k95thQ:	9.5	1.7	5.4		12.4	2.7	8.7		8.4	11.4	7.5		7.7	8.5	8.5	
98th%Factor:	2.39	2.64	2.51		2.31	2.60	2.41		2.42	2.34	2.45		2.44	2.42	2.42	
HCM2k98thQ:	11.6	2.2	6.7		14.9	3.5	10.6		10.3	13.8	9.2		9.5	10.4	10.4	

Existing AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #20 SR99 W Front & SB Ramps Morada

Average Delay (sec/veh): 4.8 Worst Case Level Of Service: C[18.6]

Street Name:	SR 99 West Frontage Rd								SR 99 SB Ramps (Morada Lane)							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Volume Module:	AM Peak Hour															
Base Vol:	0	52	657		26	42	0		0	0	0		235	0	16	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	52	657		26	42	0		0	0	0		235	0	16	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	0	57	714		28	46	0		0	0	0		255	0	17	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	57	714		28	46	0		0	0	0		255	0	17	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx		xxxxx	xxxx	xxxxx		6.4	xxxx	6.2	
FollowUpTim:	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx		xxxxx	xxxx	xxxxx		3.5	xxxx	3.3	
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx		771	xxxx	xxxxx		xxxx	xxxx	xxxxx		516	xxxx	414	
Potent Cap.:	xxxx	xxxx	xxxxx		844	xxxx	xxxxx		xxxx	xxxx	xxxxx		519	xxxx	639	
Move Cap.:	xxxx	xxxx	xxxxx		844	xxxx	xxxxx		xxxx	xxxx	xxxxx		506	xxxx	639	
Volume/Cap:	xxxx	xxxx	xxxx		0.03	xxxx	xxxx		xxxx	xxxx	xxxx		0.51	xxxx	0.03	
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx		2.6	xxxx	xxxxx		xxxx	xxxx	xxxxx		70.2	xxxx	2.1	
Control Del:	xxxxx	xxxx	xxxxx		9.4	xxxx	xxxxx		xxxxx	xxxx	xxxxx		19.2	xxxx	10.8	
LOS by Move:	*	*	*		A	*	*		*	*	*		C	*	B	
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		0.1	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		9.4	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		A	*	*		*	*	*		*	*	*	
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				18.6			
ApproachLOS:	*				*				*				C			

Note: Queue reported is the distance per lane in feet.

Existing AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #20 SR99 W Front & SB Ramps Morada

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:       #218
Dist(miles):      0.250
Speed (mph):       1.00
SignalIndex:      #22
Cycle Time:         100 secs
InitVolume:   425    14
Saturation:  1769  1234
ArrivalType:    4     4
G/C:         0.35  0.19
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:          0.460 0.254
gq1:        12.97  0.85
gq2:         6.11  0.01
gq:         19.08  0.86
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:            0.550
beta:             0.645
ta (secs):       900.000
F:                0.003
f:          1.000 1.000
vcmax:        102     3
vcg:          124     4
vcmin:       1000  1000
tp:           0.0   0.0
p:                0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx  771 xxxxx xxxxx  524   873    46  516   516   414
AdjCnflVol:    0 xxxxx xxxxx  771 xxxxx xxxxx  524   873    46  516   516   414
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx  771 xxxxx xxxxx  524   873    46  516   516   414
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1623 xxxxx xxxxx  844 xxxxx xxxxx  464   289  1024  519   463   639
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1623 xxxxx xxxxx  844 xxxxx xxxxx  464   289  1024  519   463   639
```


Existing AM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #21 SR99 E Front & NB Ramps Morada

Average Delay (sec/veh): 6.9 Worst Case Level Of Service: D[27.0]

```
Street Name:      SR 99 East Frontage Rd         SR 99 NB Ramps (Morada Lane)
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  0  0    0  0  0  1  0    1  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:AM Peak Hour
Base Vol:     192  376     0     0  426     2    79    0   178     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  192  376     0     0  426     2    79    0   178     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:   209  409     0     0  463     2    86    0   193     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:  209  409     0     0  463     2    86    0   193     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4 xxxx   6.2 xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  465 xxxx xxxxx  xxxx xxxx xxxxx  1290 xxxx   464  xxxx xxxx xxxxx
Potent Cap.: 1096 xxxx xxxxx  xxxx xxxx xxxxx   180 xxxx   598  xxxx xxxx xxxxx
Move Cap.:   1096 xxxx xxxxx  xxxx xxxx xxxxx   150 xxxx   598  xxxx xxxx xxxxx
Volume/Cap:  0.19 xxxx  xxxx  xxxx xxxx  xxxx  0.57 xxxx  0.32  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   17.5 xxxx xxxxx  xxxx xxxx xxxxx  73.2 xxxx  34.9  xxxx xxxx xxxxx
Control Del:  9.1 xxxx xxxxx xxxxx xxxx xxxxx  56.7 xxxx  13.9 xxxxx xxxx xxxxx
LOS by Move:    A    *     *     *    *     *     F    *     B     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:  0.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:  9.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     A    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx             27.0           xxxxxx
ApproachLOS:         *                *                D                *
```

Note: Queue reported is the distance per lane in feet.

Existing AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #21 SR99 E Front & NB Ramps Morada

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

Existing AM Pk Hr

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #23 Morada Ln & SR99 E Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.336
Loss Time (sec):	6	Average Delay (sec/veh):	103.1
Optimal Cycle:	0	Level Of Service:	F

Street Name:	SR 99 East Frontage Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 1	0 0	1	0 0	1! 0	0	0 0	1! 0	0
Volume Module: AM Peak Hour												
Base Vol:	32	73	39	46	48	516	457	123	31	37	196	35
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	32	73	39	46	48	516	457	123	31	37	196	35
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	35	79	42	50	52	561	497	134	34	40	213	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	79	42	50	52	561	497	134	34	40	213	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	35	79	42	50	52	561	497	134	34	40	213	38
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.22	0.51	0.27	0.49	0.51	1.00	0.75	0.20	0.05	0.14	0.73	0.13
Final Sat.:	94	214	114	224	234	521	372	100	25	64	340	61
Capacity Analysis Module:												
Vol/Sat:	0.37	0.37	0.37	0.22	0.22	1.08	1.34	1.34	1.34	0.63	0.63	0.63
Crit Moves:		****				****	****					****
Delay/Veh:	15.8	15.8	15.8	12.8	12.8	87.5	186.1	186	186.1	22.3	22.3	22.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.8	15.8	15.8	12.8	12.8	87.5	186.1	186	186.1	22.3	22.3	22.3
LOS by Move:	C	C	C	B	B	F	F	F	F	C	C	C
ApproachDel:	15.8			76.0			186.1			22.3		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	15.8			76.0			186.1			22.3		
LOS by Appr:	C			F			F			C		
AllWayAvgQ:	13.4	13.4	13.4	7.1	7.1	281.5	607	607	607.1	37.6	37.6	37.6

Note: Queue reported is the distance per lane in feet.

Existing AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM 4-Way Stop Method
Base Volume Alternative

Intersection #23 Morada Ln & SR99 E Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Time Period: 0.25 hour												
HevVeh:	2%			2%			2%			2%		
Alpha Value: 0.01												
GroupType:	3A			5			2			2		
P[C1]:	0.0000			0.0000			0.0000			0.0000		
P[C2]:	0.0000			0.0000			0.0000			0.0000		
P[C3]:	0.0000			0.2440			0.2440			0.0000		
P[C4]:	0.3810			0.5334			0.5334			0.6404		
P[C5]:	0.6190			0.2226			0.2226			0.3596		
Padj[C1]:	0.03619			0.02979			0.02979			0.03360		
Padj[C2]:	0.02619			0.01979			0.01979			0.02360		
Padj[C3]:	0.01619			0.00247			0.00247			0.01360		
Padj[C4]:	-0.01667			-0.02978			-0.02978			-0.03483		
Padj[C5]:	-0.06190			-0.02226			-0.02226			-0.03596		

Lanes:	L1	L2	L1	L2	L1	L2	L1	L2
LaneType:	LTR	NOLANE	RITE	LTTHRU	LTR	NOLANE	LTR	NOLANE
HeadwayAdj:	-0.084	xx.xxx	-0.666	0.279	0.153	xx.xxx	-0.017	xx.xxx
Volume:	157	xxxxxx	561	102	664	xxxxxx	291	xxxxxx
Capacity:	422	xxxxx	521	458	497	xxxxx	465	xxxxx
DegOfUtil:	0.36	x.xx	1.08	0.22	1.34	x.xx	0.62	x.xx
DepHeadway:	8.27	xx.xx	6.92	7.86	7.24	xx.xx	7.65	xx.xx
ServiceTime:	6.3	xx.x	4.6	5.6	5.2	xx.x	5.7	xx.x
Delay:	15.8	xxx.x	87.5	12.8	186.1	xxx.x	22.3	xxx.x
Queue:	0.5	xxx.x	11.3	0.3	24.3	xxx.x	1.5	xxx.x

Approach:	North Bound	South Bound	East Bound	West Bound
ApproachDel:	15.8	76.0	186.1	22.3
Delay Adj:	1.00	1.00	1.00	1.00
ApprAdjDel:	15.8	76.0	186.1	22.3
LOS by Appr:	C	F	F	C

OverallDel: 103.1
OverallLOS: F

Existing AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #24 West Ln & West Ln Frontage Rd

Cycle (sec): 100 Critical Vol./Cap.(X): 0.568
Loss Time (sec): 9 Average Delay (sec/veh): 21.1
Optimal Cycle: 39 Level Of Service: C

Street Name:	West Lane						West Lane Frontage Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	0 1	0	0 1	1 0	0	1 0
Volume Module:AM Peak Hour												
Base Vol:	109	569	51	47	838	69	117	15	113	175	18	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	109	569	51	47	838	69	117	15	113	175	18	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	118	618	55	51	911	75	127	16	123	190	20	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	618	55	51	911	75	127	16	123	190	20	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	118	618	55	51	911	75	127	16	123	190	20	4
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.92	0.92	0.93	0.92	0.92	0.71	0.71	0.83	0.59	0.95	0.95
Lanes:	1.00	1.84	0.16	1.00	1.85	0.15	0.89	0.11	1.00	1.00	0.82	0.18
Final Sat.:	1769	3208	288	1769	3233	266	1193	153	1583	1130	1482	329
Capacity Analysis Module:												
Vol/Sat:	0.07	0.19	0.19	0.03	0.28	0.28	0.11	0.11	0.08	0.17	0.01	0.01
Crit Moves:	****				****					****		
Green/Cycle:	0.12	0.53	0.53	0.08	0.50	0.50	0.30	0.30	0.30	0.30	0.30	0.30
Volume/Cap:	0.57	0.36	0.36	0.36	0.57	0.57	0.36	0.36	0.26	0.57	0.04	0.04
Delay/Veh:	45.4	13.6	13.6	45.2	18.1	18.1	28.3	28.3	27.1	32.1	25.1	25.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.4	13.6	13.6	45.2	18.1	18.1	28.3	28.3	27.1	32.1	25.1	25.1
LOS by Move:	D	B	B	D	B	B	C	C	C	C	C	C
HCM2k95thQ:	169	207	207	95	424	424	168	168	134	260	24	24

Note: Queue reported is the distance per lane in feet.

Existing AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	1	1	0	1	0	1	1	0	0	1	0	0	1	0	1	0
Lane Group:	L	RT		RT	L	RT		RT	LT	LT		R	L	RT		RT
#LnsInGrps:	1	2		2	1	2		2	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		5	5	xxxx		2	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.99	0.99		xxxx	0.99	0.99		xxxx	xxxx	0.85		xxxx	0.97	0.97	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.72	0.72	xxxxx		0.61	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.97	0.97		0.93	0.97	0.97		0.71	0.71	0.83		0.59	0.95	0.95	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	0.95		1.00	0.95	0.95		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.92	0.92		0.93	0.92	0.92		0.71	0.71	0.83		0.59	0.95	0.95	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Existing AM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Base Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North	South	East	West
Cycle Length, C:	xxxxxx	xxxxxx	100	100
Actual Green Time Per Lane Group, G:	xxxxxx	xxxxxx	28.61	28.61
Effective Green Time Per Lane Group, g:	xxxxxx	xxxxxx	29.61	29.61
Opposing Effective Green Time, go:	xxxxxx	xxxxxx	29.61	29.61
Number Of Opposing Lanes, No:	xxxxxx	xxxxxx	1	1
Number Of Lanes In Lane Group, N:	xxxxxx	xxxxxx	1	1
Adjusted Left-Turn Flow Rate, Vlt:	xxxxxx	xxxxxx	127	190
Proportion of Left Turns in Lane Group, Plt:	xxxxxx	xxxxxx	0.89	1.00
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	xxxxxx	xxxxxx	3.53	5.28
Adjusted Opposing Flow Rate, Vo:	xxxxxx	xxxxxx	24	143
Opposing Flow Per Lane Per Cycle, Volc:	xxxxxx	xxxxxx	0.67	3.97
Opposing Platoon Ratio, Rpo:	xxxxxx	xxxxxx	1.33	1.33
Lost Time Per Phase, tl:	xxxxxx	xxxxxx	3.00	3.00
Eff grn until arrival of left-turn car, gf:	xxxxxx	xxxxxx	0.23	0.00
Opposing Queue Ratio, qro:	xxxxxx	xxxxxx	0.61	0.61
Eff grn blocked by opposing queue, gq:	xxxxxx	xxxxxx	0.00	2.38
Eff grn while left turns filter thru, gu:	xxxxxx	xxxxxx	29.38	27.23
Max opposing cars arriving during gq-gf, n:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	0.86	0.79
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	0.89	1.00
Through-car Equivalents, el1:	xxxxxx	xxxxxx	1.44	1.51
Single Lane Through-car Equivalents, el2:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	xxxxxx	xxxxxx	0.13	0.14
Single Lane Left Turn Adjustment Factor, fm:	xxxxxx	xxxxxx	0.72	0.61
Left Turn Adjustment Factor, flt:	xxxxxx	xxxxxx	0.72	0.61

Existing AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.12	0.53	0.53	0.08	0.50	0.50	0.30	0.30	0.30	0.30	0.30	0.30
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.67	0.67	0.98	0.77	0.77	0.90	0.90	0.88	0.92	0.86	0.86
Q1:		3.0	3.8	3.8	1.3	7.8	7.8	2.8	2.8	2.3	4.1	0.4	0.4
UpstreamVC:	0.44	0.44	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.90	0.90	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.26	0.66	0.66	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:		0.3	0.4	0.4	0.5	1.3	1.3	0.6	0.6	0.4	1.2	0.0	0.0
HCM2KQueue:		3.4	4.2	4.2	1.9	9.1	9.1	3.4	3.4	2.7	5.4	0.5	0.5
70th%Factor:	1.19	1.19	1.19	1.20	1.18	1.18	1.19	1.19	1.19	1.19	1.20	1.20
HCM2k70thQ:		4.0	5.0	5.0	2.2	10.7	10.7	4.0	4.0	3.2	6.4	0.5	0.5
85th%Factor:	1.57	1.56	1.56	1.58	1.52	1.52	1.57	1.57	1.57	1.55	1.60	1.60
HCM2k85thQ:		5.3	6.5	6.5	2.9	13.9	13.9	5.3	5.3	4.2	8.3	0.7	0.7
90th%Factor:	1.74	1.72	1.72	1.76	1.65	1.65	1.74	1.74	1.75	1.71	1.79	1.79
HCM2k90thQ:		5.9	7.2	7.2	3.3	15.1	15.1	5.8	5.8	4.6	9.1	0.8	0.8
95th%Factor:	2.00	1.98	1.98	2.04	1.86	1.86	2.00	2.00	2.02	1.95	2.08	2.08
HCM2k95thQ:		6.7	8.3	8.3	3.8	17.0	17.0	6.7	6.7	5.4	10.4	1.0	1.0
98th%Factor:	2.47	2.42	2.42	2.57	2.20	2.20	2.47	2.47	2.52	2.36	2.67	2.67
HCM2k98thQ:		8.3	10.2	10.2	4.8	20.0	20.0	8.3	8.3	6.7	12.6	1.2	1.2

Existing AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #25 West Lane & Knickerbocker Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.437
Loss Time (sec): 12 Average Delay (sec/veh): 25.5
Optimal Cycle: 37 Level Of Service: C

Street Name:	West Lane						Knickerbocker Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 3	0 1	1	0 2	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module:	AM Peak Hour											
Base Vol:	19	638	66	137	927	50	77	55	32	179	91	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	19	638	66	137	927	50	77	55	32	179	91	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	21	693	72	149	1008	54	84	60	35	195	99	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	693	72	149	1008	54	84	60	35	195	99	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	21	693	72	149	1008	54	84	60	35	195	99	40
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.88	0.88	0.93	0.93	0.93	0.93	0.94	0.94
Lanes:	1.00	3.00	1.00	1.00	2.85	0.15	1.00	0.63	0.37	1.00	0.71	0.29
Final Sat.:	1769	5083	1583	1769	4785	258	1769	1112	647	1769	1267	515
Capacity Analysis Module:												
Vol/Sat:	0.01	0.14	0.05	0.08	0.21	0.21	0.05	0.05	0.05	0.11	0.08	0.08
Crit Moves:		****		****				****		****		
Green/Cycle:	0.03	0.31	0.31	0.19	0.48	0.48	0.14	0.12	0.12	0.25	0.23	0.23
Volume/Cap:	0.44	0.44	0.15	0.44	0.44	0.44	0.33	0.44	0.44	0.44	0.33	0.33
Delay/Veh:	54.4	27.6	24.9	36.5	17.3	17.3	39.5	42.0	42.0	32.1	32.3	32.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.4	27.6	24.9	36.5	17.3	17.3	39.5	42.0	42.0	32.1	32.3	32.3
LOS by Move:	D	C	C	D	B	B	D	D	D	C	C	C
HCM2k95thQ:	34	264	68	184	283	283	127	156	156	243	173	173

Note: Queue reported is the distance per lane in feet.

Existing AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	3	0	1	0	2	1	0	0	1	0	1	0	1	0
Lane Group:	L	T	R		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	3	1		1	3	3		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.99	0.99		xxxx	0.95	0.95		xxxx	0.96	0.96	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.97	0.97		0.93	0.93	0.93		0.93	0.94	0.94	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.88	0.88		0.93	0.93	0.93		0.93	0.94	0.94	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Existing AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.03	0.31	0.31		0.19	0.48	0.48		0.14	0.12	0.12		0.25	0.23	0.23	
ArrivalType:		4				4				4				4		
ProgFactor:	0.99	0.90	0.86		0.95	0.76	0.76		0.96	0.97	0.97		0.93	0.92	0.92	
Q1:	0.6	5.0	1.2		3.5	5.4	5.4		2.0	2.4	2.4		4.2	3.0	3.0	
UpstreamVC:	0.29	0.29	0.29		0.57	0.57	0.57		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.97	0.97	0.97		0.80	0.80	0.80		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	0.11	0.51	0.47		0.31	0.55	0.55		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.1	0.4	0.1		0.2	0.4	0.4		0.5	0.7	0.7		0.8	0.5	0.5	
HCM2KQueue:	0.6	5.4	1.3		3.7	5.9	5.9		2.5	3.1	3.1		5.0	3.5	3.5	
70th%Factor:	1.20	1.19	1.20		1.19	1.19	1.19		1.19	1.19	1.19		1.19	1.19	1.19	
HCM2k70thQ:	0.8	6.4	1.6		4.4	7.0	7.0		3.0	3.7	3.7		5.9	4.1	4.1	
85th%Factor:	1.59	1.55	1.59		1.57	1.55	1.55		1.58	1.57	1.57		1.55	1.57	1.57	
HCM2k85thQ:	1.0	8.4	2.1		5.8	9.1	9.1		3.9	4.9	4.9		7.7	5.4	5.4	
90th%Factor:	1.79	1.70	1.77		1.73	1.70	1.70		1.75	1.74	1.74		1.71	1.74	1.74	
HCM2k90thQ:	1.2	9.3	2.3		6.4	10.0	10.0		4.4	5.4	5.4		8.5	6.0	6.0	
95th%Factor:	2.08	1.94	2.06		1.99	1.93	1.93		2.02	2.00	2.00		1.96	1.99	1.99	
HCM2k95thQ:	1.3	10.6	2.7		7.4	11.3	11.3		5.1	6.2	6.2		9.7	6.9	6.9	
98th%Factor:	2.65	2.36	2.60		2.45	2.34	2.34		2.52	2.49	2.49		2.38	2.47	2.47	
HCM2k98thQ:	1.7	12.8	3.4		9.1	13.7	13.7		6.3	7.7	7.7		11.8	8.5	8.5	

Existing AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.579
Loss Time (sec):	12	Average Delay (sec/veh):	32.7
Optimal Cycle:	47	Level Of Service:	C

Street Name:	West Lane								Hammer Lane			
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	4	0	1	2	0	4	0	1
Volume Module:	AM Peak Hour																			
Base Vol:	238	435	126		147	874	177		283	857	243		402	651	51	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	238	435	126		147	874	177		283	857	243		402	651	51	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	259	473	137		160	950	192		308	932	264		437	708	55	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	259	473	137		160	950	192		308	932	264		437	708	55	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	259	473	137		160	950	192		308	932	264		437	708	55	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Lanes:	2.00	4.00	1.00		2.00	4.00	1.00		2.00	4.00	1.00		2.00	4.00	1.00	
Final Sat.:	3432	6778	1583		3432	6778	1583		3432	6778	1583		3432	6778	1583	
Capacity Analysis Module:																
Vol/Sat:	0.08	0.07	0.09		0.05	0.14	0.12		0.09	0.14	0.17		0.13	0.10	0.04	
Crit Moves:	****					****					****		****			
Green/Cycle:	0.13	0.24	0.24		0.13	0.24	0.24		0.23	0.29	0.29		0.22	0.27	0.27	
Volume/Cap:	0.58	0.29	0.36		0.36	0.58	0.50		0.38	0.48	0.58		0.58	0.38	0.13	
Delay/Veh:	42.8	31.0	32.0		40.2	33.9	33.8		32.5	29.6	32.3		36.0	29.6	27.5	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	42.8	31.0	32.0		40.2	33.9	33.8		32.5	29.6	32.3		36.0	29.6	27.5	
LOS by Move:	D	C	C		D	C	C		C	C	C		D	C	C	
HCM2k95thQ:	228	155	173		110	316	230		200	301	339		282	210	56	

Note: Queue reported is the distance per lane in feet.

Existing AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	4	0	1	2	0	4	0	1	2	0	4	0	1	2	0	4	0	1
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	4	1		2	4	1		2	4	1		2	4	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Fnl Sat Adj:	0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83		0.90	0.89	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Existing AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.13	0.24	0.24	0.13	0.24	0.24	0.23	0.29	0.29	0.22	0.27	0.27
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.92	0.92	0.97	0.95	0.94	0.93	0.91	0.93	0.95	0.91	0.89
Q1:	3.4	2.7	2.9	2.0	6.0	4.3	3.4	5.4	5.8	5.3	4.0	1.0
UpstreamVC:	0.00	0.00	0.00	0.44	0.44	0.44	0.00	0.00	0.00	0.45	0.45	0.45
UpstreamAdj:	0.00	0.00	0.00	0.90	0.90	0.90	0.00	0.00	0.00	0.90	0.90	0.90
EarlyArrAdj:	1.00	1.00	1.00	0.27	0.41	0.37	1.00	1.00	1.00	0.37	0.44	0.40
Q2:	1.2	0.4	0.5	0.2	0.6	0.4	0.6	0.9	1.3	0.5	0.3	0.1
HCM2KQueue:	4.7	3.1	3.5	2.2	6.6	4.7	4.0	6.3	7.1	5.8	4.3	1.1
70th%Factor:	1.19	1.19	1.19	1.19	1.18	1.19	1.19	1.19	1.18	1.19	1.19	1.20
HCM2k70thQ:	5.5	3.7	4.1	2.6	7.8	5.6	4.8	7.4	8.4	6.9	5.1	1.3
85th%Factor:	1.56	1.57	1.57	1.58	1.54	1.56	1.56	1.54	1.54	1.55	1.56	1.59
HCM2k85thQ:	7.2	4.9	5.4	3.4	10.2	7.3	6.3	9.6	10.9	9.0	6.6	1.7
90th%Factor:	1.72	1.74	1.74	1.76	1.69	1.72	1.73	1.69	1.68	1.70	1.72	1.78
HCM2k90thQ:	8.0	5.4	6.0	3.8	11.1	8.0	7.0	10.6	12.0	9.9	7.3	1.9
95th%Factor:	1.96	2.01	2.00	2.03	1.92	1.96	1.98	1.92	1.90	1.93	1.97	2.06
HCM2k95thQ:	9.1	6.2	6.9	4.4	12.6	9.2	8.0	12.0	13.6	11.3	8.4	2.2
98th%Factor:	2.40	2.49	2.47	2.55	2.30	2.40	2.43	2.32	2.28	2.34	2.42	2.62
HCM2k98thQ:	11.2	7.7	8.5	5.5	15.2	11.2	9.8	14.5	16.2	13.6	10.3	2.8

Existing AM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.498
Loss Time (sec): 12 Average Delay (sec/veh): 30.2
Optimal Cycle: 41 Level Of Service: C

Street Name:	Hammer Lane						Holman Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 2	1 0	2	0 3	0 1	2	0 3	1 0	2	0 3	1 0
Volume Module:	AM Peak Hour											
Base Vol:	205	206	79	136	375	173	227	858	186	260	921	45
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	205	206	79	136	375	173	227	858	186	260	921	45
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	223	224	86	148	408	188	247	933	202	283	1001	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	223	224	86	148	408	188	247	933	202	283	1001	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	223	224	86	148	408	188	247	933	202	283	1001	49
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.85	0.85	0.90	0.89	0.83	0.90	0.87	0.87	0.90	0.89	0.89
Lanes:	2.00	2.17	0.83	2.00	3.00	1.00	2.00	3.29	0.71	2.00	3.81	0.19
Final Sat.:	3432	3520	1350	3432	5083	1583	3432	5420	1175	3432	6417	314
Capacity Analysis Module:												
Vol/Sat:	0.06	0.06	0.06	0.04	0.08	0.12	0.07	0.17	0.17	0.08	0.16	0.16
Crit Moves:	****					****		****		****		
Green/Cycle:	0.13	0.22	0.22	0.15	0.24	0.24	0.16	0.35	0.35	0.17	0.35	0.35
Volume/Cap:	0.50	0.29	0.29	0.29	0.34	0.50	0.45	0.50	0.50	0.50	0.45	0.45
Delay/Veh:	41.3	32.6	32.6	38.2	31.7	33.9	38.5	26.0	26.0	38.6	25.2	25.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.3	32.6	32.6	38.2	31.7	33.9	38.5	26.0	26.0	38.6	25.2	25.2
LOS by Move:	D	C	C	D	C	C	D	C	C	D	C	C
HCM2k95thQ:	189	143	143	99	169	227	165	313	313	221	298	298

Note: Queue reported is the distance per lane in feet.

Existing AM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0 2	1	0	2	0 3	0	1	2	0 3	1	0	2	0 3	1	0
Lane Group:	L	RT		RT	L	T		R	L	RT		RT	L	RT		RT
#LnsInGrps:	2	3		3	2	3		1	2	4		4	2	4		4
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.96	0.96		xxxx	xxxx	0.85		xxxx	0.97	0.97		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.94	0.94		0.93	0.98	0.83		0.93	0.95	0.95		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	0.91		0.97	0.91	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.85	0.85		0.90	0.89	0.83		0.90	0.87	0.87		0.90	0.89	0.89	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Existing AM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.13	0.22	0.22		0.15	0.24	0.24		0.16	0.35	0.35		0.17	0.35	0.35	
ArrivalType:		4				4				4				4		
ProgFactor:	0.97	0.93	0.93		0.96	0.92	0.94		0.96	0.89	0.89		0.96	0.87	0.87	
Q1:	2.9	2.4	2.4		1.8	3.2	4.2		3.1	6.1	6.1		3.5	5.4	5.4	
UpstreamVC:	0.00	0.00	0.00		0.14	0.14	0.14		0.48	0.48	0.48		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		1.00	1.00	1.00		0.87	0.87	0.87		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		0.33	0.45	0.41		0.30	0.49	0.49		1.00	1.00	1.00	
Q2:	0.9	0.4	0.4		0.1	0.2	0.4		0.2	0.5	0.5		0.9	0.8	0.8	
HCM2KQueue:	3.8	2.8	2.8		1.9	3.4	4.6		3.3	6.5	6.5		4.5	6.2	6.2	
70th%Factor:	1.19	1.19	1.19		1.20	1.19	1.19		1.19	1.18	1.18		1.19	1.19	1.19	
HCM2k70thQ:	4.5	3.4	3.4		2.3	4.0	5.5		3.9	7.7	7.7		5.3	7.3	7.3	
85th%Factor:	1.56	1.57	1.57		1.58	1.57	1.56		1.57	1.54	1.54		1.56	1.54	1.54	
HCM2k85thQ:	6.0	4.5	4.5		3.1	5.3	7.2		5.2	10.1	10.1		7.0	9.6	9.6	
90th%Factor:	1.73	1.75	1.75		1.76	1.74	1.72		1.74	1.69	1.69		1.72	1.69	1.69	
HCM2k90thQ:	6.6	5.0	5.0		3.4	5.9	8.0		5.8	11.0	11.0		7.7	10.5	10.5	
95th%Factor:	1.99	2.01	2.01		2.04	2.00	1.96		2.00	1.92	1.92		1.97	1.93	1.93	
HCM2k95thQ:	7.6	5.7	5.7		3.9	6.8	9.1		6.6	12.5	12.5		8.8	11.9	11.9	
98th%Factor:	2.45	2.50	2.50		2.56	2.47	2.40		2.48	2.30	2.30		2.41	2.32	2.32	
HCM2k98thQ:	9.3	7.1	7.1		5.0	8.4	11.1		8.2	15.1	15.1		10.8	14.4	14.4	

Existing AM Pk Hr

Base Queue Length Report (feet)

Node	Intersection	Northbound L	Northbound --	Northbound T	Northbound --	Northbound R	Southbound L	Southbound --	Southbound T	Southbound --	Southbound R	Eastbound L	Eastbound --	Eastbound T	Eastbound --	Eastbound R	Westbound L	Westbound --	Westbound T	Westbound --	Westbound R
#3	[HCM2k95thQ]:	333		75		151	36		310		310	131		274		227	207		302		302
#4	[HCM2k95thQ]:	244		172		216	37		346		346	111		503		44	271		346		5
#5	[HCM2k95thQ]:	151		368		421	124		646		101	164		819		819	432		447		447
#6	[HCM2k95thQ]:	29		324		324	273		266		266	325		325		325	321		321		321
#7	[HCM2k95thQ]:	44		44		44	97		97		97	35		44		0	26		60		60
#8	[HCM2k95thQ]:	388		163		163	60		483		483	263		581		483	166		434		434
#9	[2Way95thQ]:	xxxx		xxxx		xxxx	0.9		xxxx		xxxx	141		141		xxxx	xxxx		91.3		91.3
#10	[2Way95thQ]:	xxxx		xxxx		xxxx	2.6		2.6		2.6	0.4		0.4		xxxx	xxxx		xxxx		xxxx
#11	[2Way95thQ]:	xxxx		xxxx		xxxx	5.5		5.5		5.5	1.1		1.1		xxxx	xxxx		xxxx		xxxx
#12	[AllWayAvgQ]	15.0		15.0		10.7	2.6		2.6		2.6	34.8		34.8		16.9	118		118		0.5
#13	[AllWayAvgQ]	16.7		16.7		1.1	1.8		1.8		2.5	7.7		7.7		27.5	32.9		32.9		32.9
#14	[2Way95thQ]:	xxxx		xxxx		xxxx	20.0		20.0		xxxx	xxxx		xxxx		xxxx	3.7		xxxx		27.4
#15	[2Way95thQ]:	10.7		10.7		xxxx	xxxx		xxxx		xxxx	22.6		xxxx		4.7	xxxx		xxxx		xxxx
#18	[HCM2k95thQ]:	92		284		414	447		279		19	233		174		115	250		498		498
#19	[HCM2k95thQ]:	239		42		135	311		68		216	209		285		186	192		212		211
#20	[2Way95thQ]:	xxxx		xxxx		xxxx	2.6		2.6		xxxx	xxxx		xxxx		xxxx	70.2		xxxx		2.1
#21	[2Way95thQ]:	17.5		17.5		xxxx	xxxx		xxxx		xxxx	73.2		xxxx		34.9	xxxx		xxxx		xxxx
#23	[AllWayAvgQ]	13.4		13.4		13.4	7.1		7.1		282	607		607		607	37.6		37.6		37.6
#24	[HCM2k95thQ]:	169		207		207	95		424		424	168		168		134	260		24		24
#25	[HCM2k95thQ]:	34		264		68	184		283		283	127		156		156	243		173		173
#26	[HCM2k95thQ]:	228		155		173	110		316		230	200		301		339	282		210		56
#27	[HCM2k95thQ]:	189		143		143	99		169		227	165		313		313	221		298		298

Existing PM Pk Hr

Scenario Report

Scenario:	Existing PM
Command:	Existing PM
Volume:	Exist PM
Geometry:	Existing
Impact Fee:	Default Impact Fee
Trip Generation:	PM Pk Hr
Trip Distribution:	EPAP PM
Paths:	EPAP No Build
Routes:	Default Route
Configuration:	Default Configuration

Existing PM Pk Hr

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 3 Eight Mile Rd & Thornton Rd	C	31.8	0.592	C	31.8	0.592	+ 0.000 D/V
# 4 Eight Mile Rd & Davis Rd	C	25.1	0.650	C	25.1	0.650	+ 0.000 D/V
# 5 Eight Mile & Lower Sacto Rd	D	40.0	0.849	D	40.0	0.849	+ 0.000 D/V
# 6 West Lane & Armstrong Road	C	30.9	0.648	C	30.9	0.648	+ 0.000 D/V
# 7 West Lane & Ham Lane	A	5.6	0.213	A	5.6	0.213	+ 0.000 D/V
# 8 Eight Mile Rd & West Ln	D	39.6	0.868	D	39.6	0.868	+ 0.000 D/V
# 9 Eight Mile Road & Ham Lane	C	20.6	0.727	C	20.6	0.727	+ 0.000 D/V
# 10 Eight Mile & Leach Rd/St J	C	17.2	0.024	C	17.2	0.024	+ 0.000 D/V
# 11 Eight Mile & MickeGrove/Holman	C	21.9	0.160	C	21.9	0.160	+ 0.000 D/V
# 12 Eight Mile & SR 99 W Frontage	E	37.5	1.039	E	37.5	1.039	+ 0.000 V/C
# 13 Eight Mile & SR 99 E Frontage	C	18.6	0.760	C	18.6	0.760	+ 0.000 V/C
# 14 SR99 W Front & SB Ramps 8 Mile	B	10.9	0.303	B	10.9	0.303	+ 0.000 D/V
# 15 SR99 E Front & NB Ramps 8 Mile	C	16.8	0.472	C	16.8	0.472	+ 0.000 D/V
# 18 Morada Lane & West Lane	C	29.2	0.632	C	29.2	0.632	+ 0.000 D/V
# 19 Morada Lane & Holman Road	C	31.8	0.415	C	31.8	0.415	+ 0.000 D/V
# 20 SR99 W Front & SB Ramps Morada	C	16.3	0.525	C	16.3	0.525	+ 0.000 D/V
# 21 SR99 E Front & NB Ramps Morada	D	27.0	0.571	D	27.0	0.571	+ 0.000 D/V
# 23 Morada Ln & SR99 E Frontage Rd	E	47.4	1.043	E	47.4	1.043	+ 0.000 V/C
# 24 West Ln & West Ln Frontage Rd	B	19.8	0.525	B	19.8	0.525	+ 0.000 D/V
# 25 West Lane & Knickerbocker Dr	C	24.8	0.520	C	24.8	0.520	+ 0.000 D/V
# 26 West Lane & Hammer Lane	D	35.5	0.721	D	35.5	0.721	+ 0.000 D/V
# 27 Hammer Lane & Holman Road	C	32.2	0.659	C	32.2	0.659	+ 0.000 D/V

Existing PM Pk Hr

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 9 Eight Mile Road & Ham Lane	No / No	??? / ???
# 10 Eight Mile & Leach Rd/St J	No / No	??? / ???
# 11 Eight Mile & MickeGrove/Holman	No / No	??? / ???
# 12 Eight Mile & SR 99 W Frontage	No	???
# 13 Eight Mile & SR 99 E Frontage	No	???
# 14 SR99 W Front & SB Ramps 8 Mile	No / No	??? / ???
# 15 SR99 E Front & NB Ramps 8 Mile	No / No	??? / ???
# 20 SR99 W Front & SB Ramps Morada	No / No	??? / ???
# 21 SR99 E Front & NB Ramps Morada	No / No	??? / ???
# 23 Morada Ln & SR99 E Frontage Rd	Yes	???

Existing PM Pk Hr

Peak Hour Delay Signal Warrant Report

****

Intersection #9 Eight Mile Road & Ham Lane

****

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	0	1!	0	0
Initial Vol:	0	0			0	11		0		13	6	485			0	1	567			18
ApproachDel:	xxxxxx					xxxxxx					16.8					20.6				

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=2.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=491]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1101]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=3.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=586]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1101]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Existing PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #9 Eight Mile Road & Ham Lane

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	0	1!	0	0
Initial Vol:	0		0		0	11		0		13	6	485			0	1	567			18

Major Street Volume: 24
Minor Approach Volume: 586
Minor Approach Volume Threshold: 1214

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Existing PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #10 Eight Mile & Leach Rd/St J

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	0	0	1	0
Initial Vol:	0		0		0	5		0		5	5	456			0	0	572			5
ApproachDel:	xxxxxx					17.2					xxxxxx					xxxxxx				

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=10]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1048]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Existing PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 Eight Mile & Leach Rd/St J

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	0	0	1	0
Initial Vol:	0	0		0		5	0		5		5	456		0		0	572		5	

Major Street Volume: 1038
Minor Approach Volume: 10
Minor Approach Volume Threshold: 209

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Existing PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #11 Eight Mile & MickeGrove/Holman

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	0	0	1	0
Initial Vol:	0	0		0		30	0		21		15	497		0		0	562		19	
ApproachDel:	xxxxxx					21.9					xxxxxx					xxxxxx				

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=51]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1144]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #11 Eight Mile & MickeGrove/Holman

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	0	0	1	0
Initial Vol:	0		0		0	30		0		21	15		497		0	0		562		19

Major Street Volume: 1093
Minor Approach Volume: 51
Minor Approach Volume Threshold: 196

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #12 Eight Mile & SR 99 W Frontage

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	1	0	0	1!	0	0	0	1	0	0	1	0	1	0	0	1
Initial Vol:	180		17		135	18		44		9	3		319		203	99		390		18

Major Street Volume: 1032
Minor Approach Volume: 332
Minor Approach Volume Threshold: 361

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #13 Eight Mile & SR 99 E Frontage

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	0	0	1!	0	0
Initial Vol:	290		49		77	9		30		48	22		209		240	47		193		7

Major Street Volume: 718
Minor Approach Volume: 416
Minor Approach Volume Threshold: 517

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0		93		6	214		119		0	0		0		0	22		0		265
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					10.9				

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.9]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=287]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=719]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0		93		6	214		119		0	0		0		0	22		0		265

Major Street Volume: 432
Minor Approach Volume: 287
Minor Approach Volume Threshold: 557

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	50		195		0	0		170		144	222		0		42	0		0		0
ApproachDel:	xxxxxx					xxxxxx					16.8					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.2]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=264]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=823]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
Initial Vol:	50	195			0		0	170		144	222		0		42		0		0	0

Major Street Volume: 559
Minor Approach Volume: 264
Minor Approach Volume Threshold: 624

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #20 SR99 W Front & SB Ramps Morada

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	61		242		25	84		0		0	0		0		310		0		13
ApproachDel:	xxxxxx					xxxxxx					xxxxxx						16.3			

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.5]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=323]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=735]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #20 SR99 W Front & SB Ramps Morada

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	61		242		25	84		0		0	0		0		310	0		13	

Major Street Volume: 412
Minor Approach Volume: 323
Minor Approach Volume Threshold: 571

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing PM Pk Hr

Peak Hour Delay Signal Warrant Report

Intersection #21 SR99 E Front & NB Ramps Morada

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0
Initial Vol:	192	376		0		0	426		2		79		0	178		0	0		0	
ApproachDel:	xxxxxx					xxxxxx					27.0					xxxxxx				

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.9]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=257]
SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1253]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #21 SR99 E Front & NB Ramps Morada

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0
Initial Vol:	192	376			0		0	426		2	79		0	178		0		0		0

Major Street Volume: 996
Minor Approach Volume: 257
Minor Approach Volume Threshold: 294

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing PM Pk Hr

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #23 Morada Ln & SR99 E Frontage Rd

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Stop Sign					Stop Sign				
Lanes:	0	0	1!	0	0	0	1	0	0	1	0	0	1!	0	0	0	0	1!	0	0
Initial Vol:	37		42		28	74		51		561	278		121		62	9		104		27

Major Street Volume: 793
Minor Approach Volume: 461
Minor Approach Volume Threshold: 365

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 Eight Mile Rd & Thornton Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.592
Loss Time (sec):	12	Average Delay (sec/veh):	31.8
Optimal Cycle:	48	Level Of Service:	C

Street Name:	Thornton Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1	0	1	1	0	0	1	0	1	0	2	0	1	1	0	1	1	0
Volume Module:	PM Peak Hour											
Base Vol:	227	69	123	96	145	96	100	625	288	165	514	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	227	69	123	96	145	96	100	625	288	165	514	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	247	75	134	104	158	104	109	679	313	179	559	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	247	75	134	104	158	104	109	679	313	179	559	13
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	247	75	134	104	158	104	109	679	313	179	559	13
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.98	0.83	0.93	0.92	0.92	0.93	0.93	0.83	0.93	0.93	0.93
Lanes:	2.00	1.00	1.00	1.00	0.60	0.40	1.00	2.00	1.00	1.00	1.95	0.05
Final Sat.:	3432	1862	1583	1769	1053	697	1769	3538	1583	1769	3447	80
Capacity Analysis Module:												
Vol/Sat:	0.07	0.04	0.08	0.06	0.15	0.15	0.06	0.19	0.20	0.10	0.16	0.16
Crit Moves:	****				****				****	****		
Green/Cycle:	0.12	0.22	0.22	0.15	0.25	0.25	0.14	0.33	0.33	0.17	0.37	0.37
Volume/Cap:	0.59	0.18	0.38	0.38	0.59	0.59	0.44	0.57	0.59	0.59	0.44	0.44
Delay/Veh:	43.8	31.9	33.9	38.9	35.0	35.0	40.8	28.1	29.4	41.3	24.2	24.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.8	31.9	33.9	38.9	35.0	35.0	40.8	28.1	29.4	41.3	24.2	24.2
LOS by Move:	D	C	C	D	C	C	D	C	C	D	C	C
HCM2k95thQ:	225	91	177	156	351	351	146	379	341	237	281	281

Note: Queue reported is the distance per lane in feet.

Existing PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	2	0	1	0	1	1	0	0	1	0	1	0	2	0	1	1	0	1	1	0				
Lane Group:	L		T		R	L		RT		RT	L		T		R	L		RT		RT				
#LnsInGrps:	2		1		1	1		1		1	1		2		1	1		2		2				
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12	12		12		12	12		12		12	12		12		12				
CrsswalkWid:	8					8					8					8								
% Hev Veh:	2					2					2					2								
Grade:	0%					0%					0%					0%								
Parking/Hr:	No					No					No					No								
Bus Stp/Hr:	0					0					0					0								
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																							
Cnft Ped/Hr:	0					0					0					0								
ExclusiveRT:	Include					Include					Include					Include								
% RT Prtct:	0					0					0					0								
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx		xxxx		1	xxxx		xxxx		1	xxxx		xxxx		1	xxxx		xxxx					
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00					
Hev Veh Adj:	0.98	0.98		0.98		0.98	0.98		0.98		0.98	0.98		0.98		0.98	0.98		0.98					
Grade Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00					
Parking Adj:	xxxx	xxxx		1.00		xxxx	1.00		1.00		xxxx	xxxx		1.00		xxxx	1.00		1.00					
Bus Stp Adj:	xxxx	xxxx		1.00		xxxx	1.00		1.00		xxxx	xxxx		1.00		xxxx	1.00		1.00					
Area Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00					
RT Adj:	xxxx	xxxx		0.85		xxxx	0.94		0.94		xxxx	xxxx		0.85		xxxx	1.00		1.00					
LT Adj:	0.95	xxxx		xxxxx		0.95	xxxx		xxxxx		0.95	xxxx		xxxxx		0.95	xxxx		xxxxx					
PedBike Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00					
HCM Sat Adj:	0.93	0.98		0.83		0.93	0.92		0.92		0.93	0.98		0.83		0.93	0.98		0.98					
Usr Sat Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00					
MLF Sat Adj:	0.97	1.00		1.00		1.00	1.00		1.00		1.00	0.95		1.00		1.00	0.95		0.95					
Fnl Sat Adj:	0.90	0.98		0.83		0.93	0.92		0.92		0.93	0.93		0.83		0.93	0.93		0.93					
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																							
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >																							
DelAdjFctr:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00					

Existing PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #3 Eight Mile Rd & Thornton Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.12	0.22	0.22	0.15	0.25	0.25	0.14	0.33	0.33	0.17	0.37	0.37
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.92	0.93	0.96	0.94	0.94	0.97	0.90	0.91	0.97	0.86	0.86
Q1:	3.3	1.6	3.0	2.5	6.0	6.0	2.7	7.4	6.5	4.4	5.5	5.5
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.46	0.46	0.59	0.59	0.59
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.89	0.89	0.89	0.78	0.78	0.78
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.28	0.49	0.44	0.28	0.45	0.45
Q2:	1.3	0.2	0.6	0.6	1.4	1.4	0.2	0.6	0.6	0.4	0.4	0.4
HCM2KQueue:	4.6	1.8	3.6	3.1	7.4	7.4	2.9	8.1	7.2	4.8	5.8	5.8
70th%Factor:	1.19	1.20	1.19	1.19	1.18	1.18	1.19	1.18	1.18	1.19	1.19	1.19
HCM2k70thQ:	5.4	2.1	4.2	3.7	8.7	8.7	3.5	9.5	8.5	5.8	6.9	6.9
85th%Factor:	1.56	1.58	1.57	1.57	1.53	1.53	1.57	1.53	1.54	1.56	1.55	1.55
HCM2k85thQ:	7.1	2.8	5.6	4.9	11.3	11.3	4.6	12.3	11.0	7.5	9.0	9.0
90th%Factor:	1.72	1.77	1.73	1.74	1.68	1.68	1.75	1.67	1.68	1.71	1.70	1.70
HCM2k90thQ:	7.9	3.1	6.2	5.4	12.4	12.4	5.1	13.4	12.1	8.3	9.9	9.9
95th%Factor:	1.97	2.04	1.99	2.00	1.90	1.90	2.01	1.88	1.90	1.96	1.93	1.93
HCM2k95thQ:	9.0	3.6	7.1	6.2	14.0	14.0	5.8	15.2	13.7	9.5	11.2	11.2
98th%Factor:	2.40	2.57	2.46	2.49	2.27	2.27	2.50	2.24	2.28	2.39	2.34	2.34
HCM2k98thQ:	11.0	4.6	8.8	7.7	16.8	16.8	7.2	18.0	16.3	11.6	13.6	13.6

Existing PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #4 Eight Mile Rd & Davis Rd

Cycle (sec): 100 Critical Vol./Cap.(X): 0.650
Loss Time (sec): 12 Average Delay (sec/veh): 25.1
Optimal Cycle: 53 Level Of Service: C

Street Name:	Davis Rd						Eight Mile Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	1 0	1	1 0	1 0	1
Volume Module:PM Peak Hour												
Base Vol:	66	112	104	14	135	53	48	591	111	117	599	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	66	112	104	14	135	53	48	591	111	117	599	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	72	122	113	15	147	58	52	642	121	127	651	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	72	122	113	15	147	58	52	642	121	127	651	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	72	122	113	15	147	58	52	642	121	127	651	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.94	0.94	0.93	0.98	0.83	0.93	0.98	0.83
Lanes:	1.00	1.00	1.00	1.00	0.72	0.28	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1769	1862	1583	1769	1281	503	1769	1862	1583	1769	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.04	0.07	0.07	0.01	0.11	0.11	0.03	0.35	0.08	0.07	0.35	0.00
Crit Moves:	****				****			****		****		
Green/Cycle:	0.06	0.21	0.21	0.03	0.18	0.18	0.05	0.53	0.53	0.11	0.59	0.59
Volume/Cap:	0.65	0.31	0.34	0.34	0.65	0.65	0.59	0.65	0.14	0.65	0.59	0.01
Delay/Veh:	58.7	33.6	33.9	52.2	43.1	43.1	56.7	18.3	12.0	50.1	13.7	8.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	58.7	33.6	33.9	52.2	43.1	43.1	56.7	18.3	12.0	50.1	13.7	8.4
LOS by Move:	E	C	C	D	D	D	E	B	B	D	B	A
HCM2k95thQ:	168	155	150	45	324	324	82	490	61	240	402	2

Note: Queue reported is the distance per lane in feet.

Existing PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	1	0	1	0	0	1	0	1	0	1	1	0	1	0
Lane Group:	L	T	R		L	RT	RT		L	T	R		L	T	R	
#LnsInGrps:	1	1	1		1	1	1		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.96	0.96		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.94	0.94		0.93	0.98	0.83		0.93	0.98	0.83	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.98	0.83		0.93	0.94	0.94		0.93	0.98	0.83		0.93	0.98	0.83	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Existing PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #4 Eight Mile Rd & Davis Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.06	0.21	0.21		0.03	0.18	0.18		0.05	0.53	0.53		0.11	0.59	0.59	
ArrivalType:	4				4				4				4			
ProgFactor:	0.99	0.93	0.93		0.99	0.97	0.97		0.99	0.76	0.64		0.98	0.63	0.52	
Q1:	1.9	2.7	2.5		0.4	5.1	5.1		1.4	9.7	1.1		3.3	7.2	0.0	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.57	0.57	0.57		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.79	0.79	0.79		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		0.14	0.58	0.53		1.00	1.00	1.00	
Q2:	1.4	0.4	0.5		0.5	1.7	1.7		0.2	1.1	0.1		1.6	1.4	0.0	
HCM2KQueue:	3.4	3.1	3.0		0.9	6.8	6.8		1.6	10.7	1.2		4.9	8.6	0.0	
70th%Factor:	1.19	1.19	1.19		1.20	1.18	1.18		1.20	1.18	1.20		1.19	1.18	1.20	
HCM2k70thQ:	4.0	3.7	3.6		1.0	8.0	8.0		1.9	12.6	1.4		5.8	10.1	0.1	
85th%Factor:	1.57	1.57	1.57		1.59	1.54	1.54		1.58	1.51	1.59		1.55	1.53	1.60	
HCM2k85thQ:	5.3	4.9	4.7		1.4	10.4	10.4		2.5	16.2	1.9		7.6	13.1	0.1	
90th%Factor:	1.74	1.74	1.74		1.78	1.68	1.68		1.77	1.63	1.78		1.71	1.66	1.80	
HCM2k90thQ:	5.8	5.4	5.2		1.5	11.4	11.4		2.8	17.5	2.1		8.4	14.2	0.1	
95th%Factor:	2.00	2.01	2.01		2.07	1.91	1.91		2.05	1.83	2.06		1.96	1.87	2.10	
HCM2k95thQ:	6.7	6.2	6.0		1.8	13.0	13.0		3.3	19.6	2.4		9.6	16.1	0.1	
98th%Factor:	2.47	2.49	2.50		2.64	2.29	2.29		2.58	2.14	2.61		2.39	2.22	2.70	
HCM2k98thQ:	8.3	7.7	7.4		2.3	15.6	15.6		4.1	22.9	3.1		11.7	19.0	0.1	

Existing PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 Eight Mile & Lower Sacto Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.849
Loss Time (sec):	12	Average Delay (sec/veh):	40.0
Optimal Cycle:	90	Level Of Service:	D

Street Name:	Lower Sacramento Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 0	1	1 0	0 1	0	1 0	0 1	0
Volume Module:	PM Peak Hour											
Base Vol:	42	358	232	40	329	92	80	583	19	261	642	27
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	42	358	232	40	329	92	80	583	19	261	642	27
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	46	389	252	43	358	100	87	634	21	284	698	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	46	389	252	43	358	100	87	634	21	284	698	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	46	389	252	43	358	100	87	634	21	284	698	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.98	0.93	0.97	0.97
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.03	1.00	0.96	0.04
Final Sat.:	1769	1862	1583	1769	1862	1583	1769	1794	58	1769	1776	75
Capacity Analysis Module:												
Vol/Sat:	0.03	0.21	0.16	0.02	0.19	0.06	0.05	0.35	0.35	0.16	0.39	0.39
Crit Moves:		****		****				****		****		
Green/Cycle:	0.03	0.25	0.25	0.03	0.24	0.24	0.07	0.42	0.42	0.19	0.54	0.54
Volume/Cap:	0.79	0.85	0.65	0.85	0.79	0.26	0.73	0.85	0.85	0.85	0.73	0.73
Delay/Veh:	99.4	49.8	37.6	120.8	44.7	31.0	66.2	35.2	35.2	57.3	20.4	20.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	99.4	49.8	37.6	120.8	44.7	31.0	66.2	35.2	35.2	57.3	20.4	20.4
LOS by Move:	F	D	D	F	D	C	E	D	D	E	C	C
HCM2k95thQ:	151	619	362	155	545	122	208	835	835	505	643	643

Note: Queue reported is the distance per lane in feet.

Existing PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1 0	1 0	1		1 0	1 0	1		1 0	0 1	0		1 0	0 1	0	
Lane Group:	L	T	R		L	T	R		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	1	1		1	1	1		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	1.00	1.00		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.98		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.98		0.93	0.97	0.97	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Existing PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #5 Eight Mile & Lower Sacto Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.03	0.25	0.25	0.03	0.24	0.24	0.07	0.42	0.42	0.19	0.54	0.54
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.98	0.95	1.00	0.97	0.91	0.99	0.93	0.93	0.99	0.78	0.78
Q1:	1.3	10.1	6.0	1.2	9.0	2.1	2.4	15.3	15.3	7.5	12.0	12.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	1.8	3.9	1.7	1.9	3.0	0.3	1.9	4.3	4.3	3.6	2.5	2.5
HCM2KQueue:	3.0	13.9	7.6	3.1	12.1	2.4	4.2	19.6	19.6	11.1	14.5	14.5
70th%Factor:	1.19	1.17	1.18	1.19	1.17	1.19	1.19	1.16	1.16	1.18	1.17	1.17
HCM2k70thQ:	3.6	16.3	9.0	3.7	14.2	2.9	5.0	22.8	22.8	13.0	17.0	17.0
85th%Factor:	1.57	1.49	1.53	1.57	1.50	1.58	1.56	1.46	1.46	1.51	1.48	1.48
HCM2k85thQ:	4.7	20.8	11.7	4.9	18.1	3.8	6.6	28.6	28.6	16.7	21.6	21.6
90th%Factor:	1.74	1.60	1.67	1.74	1.62	1.75	1.72	1.55	1.55	1.63	1.59	1.59
HCM2k90thQ:	5.3	22.3	12.8	5.4	19.5	4.2	7.3	30.4	30.4	18.1	23.2	23.2
95th%Factor:	2.01	1.78	1.89	2.01	1.81	2.03	1.97	1.70	1.70	1.82	1.77	1.77
HCM2k95thQ:	6.0	24.8	14.5	6.2	21.8	4.9	8.3	33.4	33.4	20.2	25.7	25.7
98th%Factor:	2.49	2.04	2.26	2.49	2.10	2.53	2.42	1.92	1.92	2.13	2.03	2.03
HCM2k98thQ:	7.5	28.5	17.2	7.7	25.3	6.1	10.2	37.7	37.7	23.6	29.5	29.5

Existing PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 West Lane & Armstrong Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.648
Loss Time (sec): 12 Average Delay (sec/veh): 30.9
Optimal Cycle: 53 Level Of Service: C

Street Name:	West Lane						Armstrong Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	0	1	1	0	0	0	1!	0	0	0	0	1!	0	0
Volume Module:	PM Peak Hour											
Base Vol:	3	540	33	112	441	40	32	58	4	62	197	172
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	540	33	112	441	40	32	58	4	62	197	172
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	3	587	36	122	479	43	35	63	4	67	214	187
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	587	36	122	479	43	35	63	4	67	214	187
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	587	36	122	479	43	35	63	4	67	214	187
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.92	0.92	0.93	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92
Lanes:	1.00	1.88	0.12	1.00	1.83	0.17	0.34	0.62	0.04	0.14	0.46	0.40
Final Sat.:	1769	3304	202	1769	3205	291	619	1123	77	252	799	698
Capacity Analysis Module:												
Vol/Sat:	0.00	0.18	0.18	0.07	0.15	0.15	0.06	0.06	0.06	0.27	0.27	0.27
Crit Moves:		****		****			****			****		
Green/Cycle:	0.00	0.27	0.27	0.11	0.38	0.38	0.09	0.09	0.09	0.41	0.41	0.41
Volume/Cap:	0.40	0.65	0.65	0.65	0.40	0.40	0.65	0.65	0.65	0.65	0.65	0.65
Delay/Veh:	78.6	33.6	33.6	50.6	23.1	23.1	53.3	53.3	53.3	25.6	25.6	25.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	78.6	33.6	33.6	50.6	23.1	23.1	53.3	53.3	53.3	25.6	25.6	25.6
LOS by Move:	E	C	C	D	C	C	D	D	D	C	C	C
HCM2k95thQ:	26	431	431	233	263	263	209	209	209	496	496	496

Note: Queue reported is the distance per lane in feet.

Existing PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0 1	1 0		1	0 1	1 0		0	0 1!	0 0		0	0 1!	0 0	
Lane Group:	L	RT	RT		L	RT	RT		LTR	LTR	LTR		LTR	LTR	LTR	
#LnsInGrps:	1	2	2		1	2	2		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		4	4	4		4	4	4	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.99	0.99		xxxx	0.99	0.99		0.99	0.99	0.99		0.95	0.95	0.95	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.98	0.98	0.98		0.99	0.99	0.99	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.97	0.97		0.93	0.97	0.97		0.96	0.96	0.96		0.92	0.92	0.92	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	0.95		1.00	0.95	0.95		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.92	0.92		0.93	0.92	0.92		0.96	0.96	0.96		0.92	0.92	0.92	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Existing PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #6 West Lane & Armstrong Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Green/Cycle:	0.00	0.27	0.27		0.11	0.38	0.38		0.09	0.09	0.09		0.41	0.41	0.41	
ArrivalType:		4				4				4				4		
ProgFactor:	1.00	0.94	0.94		0.98	0.85	0.85		0.99	0.99	0.99		0.87	0.87	0.87	
Q1:		0.1	7.6	7.6		3.2	4.8	4.8		2.7	2.7	2.7		9.1	9.1	9.1
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:		0.4	1.7	1.7		1.6	0.7	0.7		1.5	1.5	1.5		1.7	1.7	1.7
HCM2KQueue:		0.5	9.3	9.3		4.7	5.4	5.4		4.2	4.2	4.2		10.8	10.8	10.8
70th%Factor:	1.20	1.18	1.18		1.19	1.19	1.19		1.19	1.19	1.19		1.18	1.18	1.18	
HCM2k70thQ:		0.6	10.9	10.9		5.6	6.4	6.4		5.0	5.0	5.0		12.8	12.8	12.8
85th%Factor:	1.60	1.52	1.52		1.56	1.55	1.55		1.56	1.56	1.56		1.51	1.51	1.51	
HCM2k85thQ:		0.8	14.1	14.1		7.4	8.4	8.4		6.6	6.6	6.6		16.4	16.4	16.4
90th%Factor:	1.79	1.65	1.65		1.72	1.71	1.71		1.72	1.72	1.72		1.63	1.63	1.63	
HCM2k90thQ:		0.9	15.3	15.3		8.1	9.2	9.2		7.3	7.3	7.3		17.7	17.7	17.7
95th%Factor:	2.08	1.86	1.86		1.96	1.94	1.94		1.97	1.97	1.97		1.83	1.83	1.83	
HCM2k95thQ:		1.0	17.3	17.3		9.3	10.5	10.5		8.3	8.3	8.3		19.8	19.8	19.8
98th%Factor:	2.66	2.19	2.19		2.39	2.36	2.36		2.42	2.42	2.42		2.13	2.13	2.13	
HCM2k98thQ:		1.3	20.3	20.3		11.4	12.8	12.8		10.2	10.2	10.2		23.1	23.1	23.1

Existing PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7 West Lane & Ham Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.213
Loss Time (sec):	9	Average Delay (sec/veh):	5.6
Optimal Cycle:	23	Level Of Service:	A

Street Name:	Ham Lane						West Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0 1	0	0	0 1!	0 0	1	0 1	1 0	1	0 1 1 0
Volume Module:PM Peak Hour												
Base Vol:	0	8	12	4	3	10	31	568	2	10	486	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	8	12	4	3	10	31	568	2	10	486	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	9	13	4	3	11	34	617	2	11	528	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	9	13	4	3	11	34	617	2	11	528	9
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	9	13	4	3	11	34	617	2	11	528	9
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.90	0.90	0.83	0.83	0.83	0.93	0.93	0.93	0.93	0.93	0.93
Lanes:	0.00	0.40	0.60	0.23	0.18	0.59	1.00	1.99	0.01	1.00	1.97	0.03
Final Sat.:	0	684	1027	372	279	930	1769	3522	12	1769	3474	57
Capacity Analysis Module:												
Vol/Sat:	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.18	0.18	0.01	0.15	0.15
Crit Moves:		****						****		****		
Green/Cycle:	0.00	0.06	0.06	0.06	0.06	0.06	0.09	0.82	0.82	0.03	0.76	0.76
Volume/Cap:	0.00	0.21	0.21	0.20	0.20	0.20	0.20	0.21	0.21	0.21	0.20	0.20
Delay/Veh:	0.0	45.8	45.8	45.8	45.8	45.8	42.4	2.0	2.0	49.5	3.6	3.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	45.8	45.8	45.8	45.8	45.8	42.4	2.0	2.0	49.5	3.6	3.6
LOS by Move:	A	D	D	D	D	D	D	A	A	D	A	A
HCM2k95thQ:	0	43	43	37	37	37	56	14	14	29	13	13

Note: Queue reported is the distance per lane in feet.

Existing PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	0 0	0 1	0		0 0	1! 0	0		1 0	1 1	0		1 0	1 1	0	
Lane Group:	xxxx	RT	RT		LTR	LTR	LTR		L	RT	RT		L	RT	RT	
#LnsInGrps:	0	1	1		1	1	1		1	2	2		1	2	2	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	xxxx	xxxx	xxxx		5	5	5		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	xxxx	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	xxxx	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	xxxx	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		1.00	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		1.00	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	xxxx	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.92	0.92		0.92	0.92	0.92		xxxx	1.00	1.00		xxxx	1.00	1.00	
LT Adj:	xxxx	xxxx	xxxxx		0.92	0.92	0.92		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	1.00	0.90	0.90		0.83	0.83	0.83		0.93	0.98	0.98		0.93	0.98	0.98	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	0.95		1.00	0.95	0.95	
Fnl Sat Adj:	1.00	0.90	0.90		0.83	0.83	0.83		0.93	0.93	0.93		0.93	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	0.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Existing PM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Base Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North	South	East	West
Cycle Length, C:	xxxxxx	100	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	xxxxxx	4.95	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	xxxxxx	5.95	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	xxxxxx	5.95	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	xxxxxx	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	xxxxxx	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	xxxxxx	4	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	xxxxxx	0.24	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	0.00	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	xxxxxx	0.12	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	xxxxxx	22	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	xxxxxx	0.61	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	xxxxxx	1.33	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	xxxxxx	3.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	xxxxxx	0.95	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	xxxxxx	0.92	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	xxxxxx	0.11	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	xxxxxx	5.00	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	xxxxxx	0.00	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	1.00	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Through-car Equivalents, el1:	xxxxxx	1.43	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	xxxxxx	1.00	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	xxxxxx	0.42	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	xxxxxx	0.92	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	xxxxxx	0.92	xxxxxx	xxxxxx

Existing PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #7 West Lane & Ham Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.00	0.06	0.06	0.06	0.06	0.06	0.09	0.82	0.82	0.03	0.76	0.76
ArrivalType:		4			4			4			4	
ProgFactor:	1.00	0.98	0.98	0.98	0.98	0.98	0.97	0.00	0.00	0.99	0.00	0.00
Q1:	0.0	0.6	0.6	0.5	0.5	0.5	0.8	0.0	0.0	0.3	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.0	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3
HCM2KQueue:	0.0	0.8	0.8	0.7	0.7	0.7	1.1	0.3	0.3	0.6	0.3	0.3
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
HCM2k70thQ:	0.0	1.0	1.0	0.9	0.9	0.9	1.3	0.3	0.3	0.7	0.3	0.3
85th%Factor:	1.60	1.59	1.59	1.59	1.59	1.59	1.59	1.60	1.60	1.59	1.60	1.60
HCM2k85thQ:	0.0	1.3	1.3	1.1	1.1	1.1	1.7	0.4	0.4	0.9	0.4	0.4
90th%Factor:	1.80	1.78	1.78	1.79	1.79	1.79	1.78	1.79	1.79	1.79	1.80	1.80
HCM2k90thQ:	0.0	1.5	1.5	1.3	1.3	1.3	1.9	0.5	0.5	1.0	0.5	0.5
95th%Factor:	2.10	2.07	2.07	2.08	2.08	2.08	2.06	2.09	2.09	2.08	2.09	2.09
HCM2k95thQ:	0.0	1.7	1.7	1.5	1.5	1.5	2.2	0.6	0.6	1.1	0.5	0.5
98th%Factor:	2.70	2.64	2.64	2.65	2.65	2.65	2.62	2.68	2.68	2.66	2.68	2.68
HCM2k98thQ:	0.0	2.2	2.2	1.9	1.9	1.9	2.8	0.7	0.7	1.5	0.7	0.7

Existing PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #8 Eight Mile Rd & West Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.868
Loss Time (sec):	12	Average Delay (sec/veh):	39.6
Optimal Cycle:	96	Level Of Service:	D

Street Name:	West Lane								Eight Mile Road								
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R		
Control:	Protected				Protected				Protected				Protected				
Rights:	Include				Include				Include				Include				
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0		
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		
Lanes:	1	0 1	1	0	1	0 1	1	0	1	0 1	0	1	1	0 0	1	0	
Volume Module:	PM Peak Hour																
Base Vol:	338	415	78		13	343	133		175	413	297		65	503	3		
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
Initial Bse:	338	415	78		13	343	133		175	413	297		65	503	3		
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		
PHF Volume:	367	451	85		14	373	145		190	449	323		71	547	3		
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0		
Reduced Vol:	367	451	85		14	373	145		190	449	323		71	547	3		
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
FinalVolume:	367	451	85		14	373	145		190	449	323		71	547	3		
Saturation Flow Module:																	
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		
Adjustment:	0.93	0.91	0.91		0.93	0.89	0.89		0.93	0.98	0.83		0.93	0.98	0.98		
Lanes:	1.00	1.68	0.32		1.00	1.44	0.56		1.00	1.00	1.00		1.00	0.99	0.01		
Final Sat.:	1769	2907	546		1769	2442	947		1769	1862	1583		1769	1849	11		
Capacity Analysis Module:																	
Vol/Sat:	0.21	0.16	0.16		0.01	0.15	0.15		0.11	0.24	0.20		0.04	0.30	0.30		
Crit Moves:	****					****			****					****			
Green/Cycle:	0.24	0.39	0.39		0.02	0.18	0.18		0.12	0.40	0.40		0.07	0.34	0.34		
Volume/Cap:	0.87	0.39	0.39		0.39	0.87	0.87		0.87	0.60	0.51		0.60	0.87	0.87		
Delay/Veh:	53.6	21.9	21.9		55.3	52.9	52.9		71.7	25.3	23.4		54.1	43.0	43.0		
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
AdjDel/Veh:	53.6	21.9	21.9		55.3	52.9	52.9		71.7	25.3	23.4		54.1	43.0	43.0		
LOS by Move:	D	C	C		E	D	D		E	C	C		D	D	D		
HCM2k95thQ:	534	247	247		48	504	504		400	464	325		111	723	723		

Note: Queue reported is the distance per lane in feet.

Existing PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R		
HCM Ops Adjusted Lane Utilization Module:																	
Lanes:	1	0 1	1	0	1	0 1	1	0	1	0 1	0	1	1	0 0	1	0	
Lane Group:	L	RT		RT	L	RT		RT	L	T		R	L	RT		RT	
#LnsInGrps:	1	2		2	1	2		2	1	1		1	1	1		1	
HCM Ops Input Saturation Adj Module:																	
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12	
CrsswalkWid:		8				8				8				8			
% Hev Veh:		2				2				2				2			
Grade:		0%				0%				0%				0%			
Parking/Hr:		No				No				No				No			
Bus Stp/Hr:		0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >																
Cnft Ped/Hr:		0				0				0				0			
ExclusiveRT:		Include				Include				Include				Include			
% RT Prtct:		0				0				0				0			
HCM Ops f(lt) Adj Case Module:																	
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		
HCM Ops Saturation Adj Module:																	
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
RT Adj:	xxxx	0.98	0.98		xxxx	0.96	0.96		xxxx	xxxx	0.85		xxxx	1.00	1.00		
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
HCM Sat Adj:	0.93	0.96	0.96		0.93	0.94	0.94		0.93	0.98	0.83		0.93	0.98	0.98		
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
MLF Sat Adj:	1.00	0.95	0.95		1.00	0.95	0.95		1.00	1.00	1.00		1.00	1.00	1.00		
Fnl Sat Adj:	0.93	0.91	0.91		0.93	0.89	0.89		0.93	0.98	0.83		0.93	0.98	0.98		
Delay Adjustment Factor Module:																	
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >																
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >																
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		

Existing PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #8 Eight Mile Rd & West Ln

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.24	0.39	0.39	0.02	0.18	0.18	0.12	0.40	0.40	0.07	0.34	0.34
ArrivalType:		4			4			4			4	
ProgFactor:	0.98	0.83	0.83	1.00	0.99	0.99	0.99	0.87	0.85	0.99	0.96	0.96
Q1:	9.6	4.7	4.7	0.4	7.3	7.3	5.1	8.6	5.8	1.9	13.8	13.8
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00
EarlyArrAdj:	0.44	0.60	0.60	1.00	1.00	1.00	1.00	1.00	1.00	0.20	0.56	0.56
Q2:	2.2	0.4	0.4	0.5	3.8	3.8	3.4	1.5	1.0	0.3	2.9	2.9
HCM2KQueue:	11.8	5.1	5.1	0.9	11.1	11.1	8.5	10.1	6.8	2.2	16.6	16.6
70th%Factor:	1.17	1.19	1.19	1.20	1.18	1.18	1.18	1.18	1.18	1.19	1.17	1.17
HCM2k70thQ:	13.9	6.0	6.0	1.1	13.0	13.0	10.1	11.9	8.0	2.6	19.4	19.4
85th%Factor:	1.50	1.55	1.55	1.59	1.51	1.51	1.53	1.51	1.54	1.58	1.47	1.47
HCM2k85thQ:	17.7	7.9	7.9	1.5	16.7	16.7	13.0	15.3	10.5	3.5	24.5	24.5
90th%Factor:	1.62	1.71	1.71	1.78	1.63	1.63	1.66	1.64	1.68	1.76	1.57	1.57
HCM2k90thQ:	19.1	8.7	8.7	1.7	18.0	18.0	14.2	16.6	11.4	3.8	26.2	26.2
95th%Factor:	1.81	1.95	1.95	2.07	1.82	1.82	1.87	1.84	1.91	2.03	1.74	1.74
HCM2k95thQ:	21.4	9.9	9.9	1.9	20.2	20.2	16.0	18.6	13.0	4.4	28.9	28.9
98th%Factor:	2.10	2.38	2.38	2.63	2.13	2.13	2.22	2.16	2.29	2.55	1.98	1.98
HCM2k98thQ:	24.8	12.0	12.0	2.4	23.5	23.5	18.9	21.8	15.6	5.6	32.9	32.9

Existing PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #9 Eight Mile Road & Ham Lane

Average Delay (sec/veh): 18.6 Worst Case Level Of Service: C[20.6]

Street Name:	Ham Lane						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	1! 0	0
Volume Module:	PM Peak Hour											
Base Vol:	0	0	0	11	0	13	6	485	0	1	567	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	11	0	13	6	485	0	1	567	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	12	0	14	7	527	0	1	616	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	12	0	14	7	527	0	1	616	20
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	xxxxx	7.1	6.5	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	xxxxx	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	0	xxxx	xxxxx	339	31	xxxxx	295	38	0
Potent Cap.:	xxxx	xxxx	xxxxx	1623	xxxx	xxxxx	615	862	xxxxx	658	854	1085
Move Cap.:	xxxx	xxxx	xxxxx	1623	xxxx	xxxxx	245	855	xxxxx	332	848	1085
Volume/Cap:	xxxx	xxxx	xxxx	0.01	xxxx	xxxx	0.03	0.62	xxxx	0.00	0.73	0.02
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.6	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	7.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	830	xxxx	xxxxx	xxxx	851	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.8	xxxx	xxxxx	xxxxx	7.1	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	16.8	xxxx	xxxxx	xxxxx	20.6	xxxxx
Shared LOS:	*	*	*	*	*	*	C	*	*	*	C	*
ApproachDel:	xxxxxx			xxxxxx			16.8			20.6		
ApproachLOS:	*			*			C			C		

Note: Queue reported is the distance per lane in feet.

Existing PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #9 Eight Mile Road & Ham Lane

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Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:       #144             #83
Dist(miles):      0.000            0.000
Speed (mph):       0.00             0.00
SignalIndex:      #46              #7
Cycle Time:           0 secs           0 secs
InitVolume:     0     0          0     0
Saturation:     0     0          0     0
ArrivalType:    0     0          0     0
G/C:         0.00  0.00       0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:          0.000 0.000      0.000 0.000
gq1:         0.00  0.00       0.00  0.00
gq2:         0.00  0.00       0.00  0.00
gq:          0.00  0.00       0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:            0.000            0.000
beta:             0.000            0.000
ta (secs):        0.000            0.000
F:                0.000            0.000
f:          0.000 0.000      0.000 0.000
vcmax:          0     0          0     0
vcg:            0     0          0     0
vcmin:          0     0          0     0
tp:           0.0   0.0        0.0   0.0
p:                0.000            0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx    0 xxxxx xxxxx  339    31     7  295    38     0
AdjCnflVol:    0 xxxxx xxxxx    0 xxxxx xxxxx  339    31     7  295    38     0
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx    0 xxxxx xxxxx  339    31     7  295    38     0
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1623 xxxxx xxxxx 1623 xxxxx xxxxx  615   862  1075  658   854  1085
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1623 xxxxx xxxxx 1623 xxxxx xxxxx  615   862  1075  658   854  1085
```


Existing PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #10 Eight Mile & Leach Rd/St J

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: C[17.2]

```
Street Name:       Leach Road/Street J                 Eight Mile Road
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  0    0  0  1! 0  0    0  1  0  0  0    0  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:PM Peak Hour
Base Vol:       0    0     0     5    0     5     5  456     0     0  572     5
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0     5    0     5     5  456     0     0  572     5
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0     0     5    0     5     5  496     0     0  622     5
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     0     5    0     5     5  496     0     0  622     5
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   6.4  6.5   6.2   4.1 xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx   3.5  4.0   3.3   2.2 xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  1131 1131   624   627 xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx   225  203   485   955 xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx   224  202   485   955 xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  0.02 0.00  0.01  0.01 xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.4 xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.8 xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx  307 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx  0.1 xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx 17.2 xxxxx   8.8 xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    C     *     A    *     *     *    *     *
ApproachDel:    xxxxxx             17.2           xxxxxx           xxxxxx
ApproachLOS:        *               C               *                *
```

Note: Queue reported is the distance per lane in feet.

Existing PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #10 Eight Mile & Leach Rd/St J

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												

Existing PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #11 Eight Mile & MickeGrove/Holman

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: C[21.9]

Street Name:	Micke Grove Road/Holman Road									Eight Mile Road		
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0 0		0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Volume Module: PM Peak Hour												
Base Vol:	0	0	0	30	0	21	15	497	0	0	562	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	30	0	21	15	497	0	0	562	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	33	0	23	16	540	0	0	611	21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	33	0	23	16	540	0	0	611	21
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	1194	1194	621	632	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	206	187	487	951	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	203	183	487	951	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.16	0.00	0.05	0.02	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1.3	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	268	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.8	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	21.9	xxxxx	8.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	C	*	A	*	*	*	*	*
ApproachDel:	xxxxxx				21.9		xxxxxx			xxxxxx		
ApproachLOS:		*			C			*			*	

Note: Queue reported is the distance per lane in feet.

Existing PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #11 Eight Mile & MickeGrove/Holman

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	2%			2%			2%			2%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												

Existing PM Pk Hr

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #12 Eight Mile & SR 99 W Frontage

Cycle (sec):	100	Critical Vol./Cap.(X):	1.039
Loss Time (sec):	12	Average Delay (sec/veh):	37.5
Optimal Cycle:	0	Level Of Service:	E

Street Name:	SR 99 West Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1	0	0 1	0 0	1!	0 0	0 1	0	0 1	0 1	0	0 1
Volume Module:PM Peak Hour												
Base Vol:	180	17	135	18	44	9	3	319	203	99	390	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	180	17	135	18	44	9	3	319	203	99	390	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	196	18	147	20	48	10	3	347	221	108	424	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	196	18	147	20	48	10	3	347	221	108	424	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	196	18	147	20	48	10	3	347	221	108	424	20
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.91	0.09	1.00	0.25	0.62	0.13	0.01	0.99	1.00	0.20	0.80	1.00
Final Sat.:	401	38	510	102	249	51	5	506	566	104	408	562
Capacity Analysis Module:												
Vol/Sat:	0.49	0.49	0.29	0.19	0.19	0.19	0.69	0.69	0.39	1.04	1.04	0.03
Crit Moves:	****				****			****			****	
Delay/Veh:	18.0	18.0	12.3	13.4	13.4	13.4	23.2	23.2	12.9	76.5	76.5	9.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	18.0	18.0	12.3	13.4	13.4	13.4	23.2	23.2	12.9	76.5	76.5	9.2
LOS by Move:	C	C	B	B	B	B	C	C	B	F	F	A
ApproachDel:	15.7			13.4			19.2			74.1		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	15.7			13.4			19.2			74.1		
LOS by Appr:	C			B			C			F		
AllWayAvgQ:	22.1	22.1	9.5	5.3	5.3	5.3	48.0	48.0	15.2	237	237	0.9

Note: Queue reported is the distance per lane in feet.

Existing PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM 4-Way Stop Method
Base Volume Alternative

Intersection #12 Eight Mile & SR 99 W Frontage

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Time Period: 0.25 hour												
HevVeh:	2%			2%			2%			2%		
Alpha Value: 0.01												
GroupType:	5			4B			5			5		
P[C1]:	0.0000			0.0000			0.0000			0.0603		
P[C2]:	0.0000			0.0000			0.3051			0.2448		
P[C3]:	0.1616			0.0738			0.0000			0.1147		
P[C4]:	0.6920			0.4233			0.5805			0.4884		
P[C5]:	0.1465			0.5029			0.1144			0.0918		
Padj[C1]:	0.02985			0.03429			0.02504			0.02307		
Padj[C2]:	0.01985			0.02429			0.01199			0.01122		
Padj[C3]:	0.00500			0.01208			0.00809			0.00328		
Padj[C4]:	-0.04005			-0.02037			-0.03369			-0.02838		
Padj[C5]:	-0.01465			-0.05029			-0.01144			-0.00918		
Lanes:	L1	L2		L1	L2		L1	L2		L1	L2	
LaneType:	RITE	LTTHRU		LTR	NOLANE		RITE	LTTHRU		RITE	LTTHRU	
HeadwayAdj:	-0.666	0.491		0.009	xx.xxx		-0.666	0.039		-0.666	0.135	
Volume:	147	214		77	xxxxxx		221	350		20	532	
Capacity:	510	438		402	xxxxx		566	511		562	512	
DegOfUtil:	0.28	0.48		0.18	x.xx		0.38	0.68		0.03	1.04	
DepHeadway:	6.92	8.08		8.52	xx.xx		6.28	6.99		6.23	7.04	
ServiceTime:	4.6	5.8		6.5	xx.x		4.0	4.7		3.9	4.7	
Delay:	12.3	18.0		13.4	xxx.x		12.9	23.2		9.2	76.5	
Queue:	0.4	0.9		0.2	xxx.x		0.6	1.9		0.0	9.5	

Approach:	North Bound	South Bound	East Bound	West Bound
ApproachDel:	15.7	13.4	19.2	74.1
Delay Adj:	1.00	1.00	1.00	1.00
ApprAdjDel:	15.7	13.4	19.2	74.1
LOS by Appr:	C	B	C	F

OverallDel: 37.5
OverallLOS: E

Existing PM Pk Hr

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #13 Eight Mile & SR 99 E Frontage

Cycle (sec): 100 Critical Vol./Cap.(X): 0.760
Loss Time (sec): 12 Average Delay (sec/veh): 18.6
Optimal Cycle: 0 Level Of Service: C

Street Name:	SR 99 East Frontage Road						Eight Mile Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1	0 0	1	0 1	0 0	1	0 1	0 0	1	0 0	1! 0	0
Volume Module:PM Peak Hour												
Base Vol:	290	49	77	9	30	48	22	209	240	47	193	7
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	290	49	77	9	30	48	22	209	240	47	193	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	315	53	84	10	33	52	24	227	261	51	210	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	315	53	84	10	33	52	24	227	261	51	210	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	315	53	84	10	33	52	24	227	261	51	210	8
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.86	0.14	1.00	0.23	0.77	1.00	0.10	0.90	1.00	0.19	0.78	0.03
Final Sat.:	415	70	567	98	326	469	49	461	570	93	383	14
Capacity Analysis Module:												
Vol/Sat:	0.76	0.76	0.15	0.10	0.10	0.11	0.49	0.49	0.46	0.55	0.55	0.55
Crit Moves:	****					****		****			****	
Delay/Veh:	28.5	28.5	9.9	11.2	11.2	10.4	15.7	15.7	13.6	17.8	17.8	17.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.5	28.5	9.9	11.2	11.2	10.4	15.7	15.7	13.6	17.8	17.8	17.8
LOS by Move:	D	D	A	B	B	B	C	C	B	C	C	C
ApproachDel:	25.1			10.8			14.7			17.8		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	25.1			10.8			14.7			17.8		
LOS by Appr:	D			B			B			C		
AllWayAvgQ:	62.3	62.3	4.1	2.3	2.3	2.5	21.9	21.9	19.0	26.2	26.2	26.2

Note: Queue reported is the distance per lane in feet.

Existing PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM 4-Way Stop Method
Base Volume Alternative

Intersection #13 Eight Mile & SR 99 E Frontage

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Time Period: 0.25 hour																
HevVeh:	2%				2%				2%				2%			
Alpha Value: 0.01																
GroupType:	5				5				5				4B			
P[C1]:	0.11				0.03				0.08				0.05			
P[C2]:	0.02				0.11				0.09				0.13			
P[C3]:	0.40				0.11				0.32				0.20			
P[C4]:	0.40				0.46				0.43				0.52			
P[C5]:	0.07				0.29				0.08				0.10			
Padj[C1]:	0.023				0.029				0.023				0.025			
Padj[C2]:	0.014				0.018				0.013				0.014			
Padj[C3]:	-0.007				0.007				-0.004				0.001			
Padj[C4]:	-0.023				-0.025				-0.025				-0.030			
Padj[C5]:	-0.007				-0.029				-0.008				-0.010			

Lanes:	L1	L2	L1	L2	L1	L2	L1	L2
LaneType:	RITE	LTTHRU	RITE	LTTHRU	RITE	LTTHRU	LTR	NOLANE
HeadwayAdj:	-0.666	0.462	-0.666	0.149	-0.666	0.082	0.055	xx.xxx
Volume:	84	368	52	42	261	251	268	xxxxxx
Capacity:	567	485	469	424	570	510	491	xxxxx
DegOfUtil:	0.14	0.75	0.10	0.09	0.44	0.48	0.53	x.xx
DepHeadway:	6.17	7.29	6.93	7.75	6.13	6.88	7.09	xx.xx
ServiceTime:	3.9	5.0	4.6	5.4	3.8	4.6	5.1	xx.x
Delay:	9.9	28.5	10.4	11.2	13.6	15.7	17.8	xxx.x
Queue:	0.2	2.5	0.1	0.1	0.8	0.9	1.0	xxx.x

Approach:	North Bound	South Bound	East Bound	West Bound
ApproachDel:	25.1	10.8	14.7	17.8
Delay Adj:	1.00	1.00	1.00	1.00
ApprAdjDel:	25.1	10.8	14.7	17.8
LOS by Appr:	D	B	B	C

OverallDel: 18.6
OverallLOS: C

Existing PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #14 SR99 W Front & SB Ramps 8 Mile

Average Delay (sec/veh): 6.7 Worst Case Level Of Service: B[10.9]

Street Name:	SR 99 West Frontage Rd								SR 99 SB Ramps (Eight Mile Rd)							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	1 0	0	1	0	0 0	0	0	0	0 0	1	0	0	0 1
Volume Module:PM Peak Hour																
Base Vol:	0	93	6	214	119	0	0	0	0	0	0	0	22	0	265	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Initial Bse:	0	93	6	214	119	0	0	0	0	0	0	0	22	0	265	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
PHF Volume:	0	101	7	233	129	0	0	0	0	24	0	288				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	0	101	7	233	129	0	0	0	0	24	0	288				
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2				
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3				
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx	108	xxxx	xxxxx	xxxx	xxxx	xxxxx	699	xxxx	104				
Potent Cap.:	xxxx	xxxx	xxxxx	1483	xxxx	xxxxx	xxxx	xxxx	xxxxx	406	xxxx	950				
Move Cap.:	xxxx	xxxx	xxxxx	1483	xxxx	xxxxx	xxxx	xxxx	xxxxx	350	xxxx	950				
Volume/Cap:	xxxx	xxxx	xxxx	0.16	xxxx	xxxx	xxxx	xxxx	xxxx	0.07	xxxx	0.30				
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx	13.9	xxxx	xxxxx	xxxx	xxxx	xxxxx	5.5	xxxx	32.1				
Control Del:	xxxxx	xxxx	xxxxx	7.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	16.0	xxxx	10.4				
LOS by Move:	*	*	*	A	*	*	*	*	*	C	*	B				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	0.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	xxxxx	xxxx	xxxxx	7.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*				
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			10.9						
ApproachLOS:	*			*			*			B						

Note: Queue reported is the distance per lane in feet.

Existing PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #14 SR99 W Front & SB Ramps 8 Mile

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:       #218
Dist(miles):      0.250
Speed (mph):       1.00
SignalIndex:      #22
Cycle Time:         100 secs
InitVolume:   197    14
Saturation:  1769   826
ArrivalType:    4     4
G/C:         0.16  0.28
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:          0.219 0.368
gq1:         8.69  1.07
gq2:         1.52  0.02
gq:         10.21  1.10
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:            0.550
beta:             0.645
ta (secs):       900.000
F:                0.003
f:          0.510 1.000
vcmax:         28     3
vcg:           30     4
vcmin:       1000  1000
tp:           0.0   0.0
p:                0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx  108 xxxxx xxxxx  843   702   129  699   699   104
AdjCnflVol:    0 xxxxx xxxxx  108 xxxxx xxxxx  843   702   129  699   699   104
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx  108 xxxxx xxxxx  843   702   129  699   699   104
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1623 xxxxx xxxxx 1483 xxxxx xxxxx  284   362   920  406   364   950
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1623 xxxxx xxxxx 1483 xxxxx xxxxx  284   362   920  406   364   950
```


Existing PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Average Delay (sec/veh): 5.9 Worst Case Level Of Service: C[16.8]

```
Street Name:      SR 99 East Frontage Rd        SR 99 NB Ramps (Eight Mile Rd)
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  0  0    0  0  1  0  1    1  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:PM Peak Hour
Base Vol:      50  195     0     0  170   144   222    0    42     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   50  195     0     0  170   144   222    0    42     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:    54  212     0     0  185   157   241    0    46     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   54  212     0     0  185   157   241    0    46     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4 xxxx   6.2 xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  341 xxxx xxxxx  xxxx xxxx xxxxx   505 xxxx   185  xxxx xxxx xxxxx
Potent Cap.: 1229 xxxx xxxxx  xxxx xxxx xxxxx   530 xxxx   863  xxxx xxxx xxxxx
Move Cap.:   1229 xxxx xxxxx  xxxx xxxx xxxxx   512 xxxx   863  xxxx xxxx xxxxx
Volume/Cap:  0.04 xxxx  xxxx  xxxx xxxx  xxxx  0.47 xxxx  0.05  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    3.5 xxxx xxxxx  xxxx xxxx xxxxx  62.3 xxxx   4.2  xxxx xxxx xxxxx
Control Del:  8.1 xxxx xxxxx xxxxx xxxx xxxxx  18.2 xxxx   9.4 xxxxx xxxx xxxxx
LOS by Move:    A    *     *     *    *     *     C    *     A     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:  0.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:  8.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     A    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx             16.8           xxxxxx
ApproachLOS:         *                *                C                *
```

Note: Queue reported is the distance per lane in feet.

Existing PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #15 SR99 E Front & NB Ramps 8 Mile

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	0%			0%			0%			0%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												

Existing PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 Morada Lane & West Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.632
Loss Time (sec):	12	Average Delay (sec/veh):	29.2
Optimal Cycle:	51	Level Of Service:	C

Street Name:	West Lane									Morada Lane								
Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected				Protected				Protected				Protected					
Rights:	Include				Include				Include				Include					
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0						
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0						
Lanes:	2	0	2	0	1	1	0	2	0	1	0	1	0	0	1	1	0	1! 0 0
Volume Module:PM Peak Hour																		
Base Vol:	48	596	280	206	509	12	17	28	33	317	27	148						
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Initial Bse:	48	596	280	206	509	12	17	28	33	317	27	148						
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92						
PHF Volume:	52	648	304	224	553	13	18	30	36	345	29	161						
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0						
Reduced Vol:	52	648	304	224	553	13	18	30	36	345	29	161						
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
FinalVolume:	52	648	304	224	553	13	18	30	36	345	29	161						
Saturation Flow Module:																		
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900						
Adjustment:	0.90	0.93	0.83	0.93	0.93	0.83	0.96	0.96	0.83	0.91	0.91	0.91						
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	0.38	0.62	1.00	1.48	0.08	0.44						
Final Sat.:	3432	3538	1583	1769	3538	1583	690	1137	1583	2542	140	765						
Capacity Analysis Module:																		
Vol/Sat:	0.02	0.18	0.19	0.13	0.16	0.01	0.03	0.03	0.02	0.14	0.21	0.21						
Crit Moves:			****	****			****				****							
Green/Cycle:	0.04	0.30	0.30	0.20	0.46	0.46	0.04	0.06	0.06	0.31	0.33	0.33						
Volume/Cap:	0.34	0.60	0.63	0.63	0.34	0.02	0.63	0.43	0.37	0.43	0.63	0.63						
Delay/Veh:	47.7	30.6	32.7	40.3	17.4	14.7	62.8	47.9	47.3	27.5	29.7	29.7						
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
AdjDel/Veh:	47.7	30.6	32.7	40.3	17.4	14.7	62.8	47.9	47.3	27.5	29.7	29.7						
LOS by Move:	D	C	C	D	B	B	E	D	D	C	C	C						
HCM2k95thQ:	62	414	392	336	220	8	131	102	76	261	436	436						

Note: Queue reported is the distance per lane in feet.

Existing PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	0	1	1	0	2	0	1	0	1	0	1	1!	0
Lane Group:	L	T	R		L	T	R		LT	LT	R		LTR	LTR	LTR	
#LnsInGrps:	2	2	1		1	2	1		1	1	1		2	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:	8				8				8				8			
% Hev Veh:	2				2				2				2			
Grade:	0%				0%				0%				0%			
Parking/Hr:	No				No				No				No			
Bus Stp/Hr:	0				0				0				0			
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:	0				0				0				0			
ExclusiveRT:	Include				Include				Include				Include			
% RT Prtct:	0				0				0				0			
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		4	4	xxxx		4	4	4	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		1.00	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		1.00	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		0.96	0.96	0.96	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.98	0.98	xxxxx		0.97	0.97	0.97	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.98	0.83		0.96	0.96	0.83		0.91	0.91	0.91	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.95	1.00		1.00	0.95	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.90	0.93	0.83		0.93	0.93	0.83		0.96	0.96	0.83		0.91	0.91	0.91	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Existing PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #18 Morada Lane & West Lane

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.04	0.30	0.30		0.20	0.46	0.46		0.04	0.06	0.06		0.31	0.33	0.33	
ArrivalType:	4				4				4				4			
ProgFactor:	0.99	0.92	0.93		0.96	0.76	0.72		0.99	0.99	0.99		0.89	0.91	0.91	
Q1:	0.7	7.4	6.8		5.5	4.0	0.1		1.3	1.3	0.9		4.6	7.8	7.8	
UpstreamVC:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.5	1.4	1.6		1.6	0.5	0.0		1.3	0.7	0.5		0.7	1.6	1.6	
HCM2KQueue:	1.2	8.9	8.4		7.1	4.5	0.2		2.6	2.0	1.5		5.4	9.4	9.4	
70th%Factor:	1.20	1.18	1.18		1.18	1.19	1.20		1.19	1.20	1.20		1.19	1.18	1.18	
HCM2k70thQ:	1.4	10.5	9.9		8.3	5.3	0.2		3.1	2.4	1.8		6.4	11.1	11.1	
85th%Factor:	1.59	1.52	1.53		1.54	1.56	1.60		1.58	1.58	1.59		1.55	1.52	1.52	
HCM2k85thQ:	1.9	13.5	12.8		10.8	7.0	0.3		4.1	3.2	2.4		8.3	14.3	14.3	
90th%Factor:	1.78	1.66	1.66		1.68	1.72	1.80		1.75	1.76	1.77		1.71	1.65	1.65	
HCM2k90thQ:	2.1	14.7	13.9		11.9	7.7	0.3		4.5	3.5	2.6		9.1	15.5	15.5	
95th%Factor:	2.06	1.87	1.88		1.91	1.97	2.09		2.02	2.04	2.05		1.95	1.86	1.86	
HCM2k95thQ:	2.5	16.6	15.7		13.4	8.8	0.3		5.2	4.1	3.0		10.4	17.4	17.4	
98th%Factor:	2.61	2.20	2.23		2.28	2.41	2.69		2.52	2.56	2.59		2.36	2.19	2.19	
HCM2k98thQ:	3.1	19.6	18.6		16.1	10.8	0.4		6.5	5.1	3.8		12.7	20.5	20.5	

Existing PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #19 Morada Lane & Holman Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.415
Loss Time (sec):	12	Average Delay (sec/veh):	31.8
Optimal Cycle:	36	Level Of Service:	C

Street Name:	Holman Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:	PM Peak Hour											
Base Vol:	147	141	157	94	103	83	118	341	122	178	477	185
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	147	141	157	94	103	83	118	341	122	178	477	185
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	160	153	171	102	112	90	128	371	133	193	518	201
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	160	153	171	102	112	90	128	371	133	193	518	201
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	160	153	171	102	112	90	128	371	133	193	518	201
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	1769	5083	1583	1769	5083	1583	1769	5083	1583	1769	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.09	0.03	0.11	0.06	0.02	0.06	0.07	0.07	0.08	0.11	0.10	0.13
Crit Moves:			****	****			****					****
Green/Cycle:	0.24	0.26	0.26	0.14	0.15	0.15	0.17	0.21	0.21	0.27	0.31	0.31
Volume/Cap:	0.37	0.12	0.41	0.41	0.14	0.37	0.41	0.35	0.40	0.40	0.33	0.41
Delay/Veh:	31.9	28.3	31.4	40.5	36.6	38.9	37.6	34.0	35.0	30.3	26.9	28.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.9	28.3	31.4	40.5	36.6	38.9	37.6	34.0	35.0	30.3	26.9	28.1
LOS by Move:	C	C	C	D	D	D	D	C	C	C	C	C
HCM2k95thQ:	178	57	190	137	51	118	185	177	181	207	187	207

Note: Queue reported is the distance per lane in feet.

Existing PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	1	3	1	1	3	1	1	3	1	1	3	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Fnl Sat Adj:	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83	0.93	0.89	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Existing PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #19 Morada Lane & Holman Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.24	0.26	0.26	0.14	0.15	0.15	0.17	0.21	0.21	0.27	0.31	0.31
ArrivalType:		4			4			4			4	
ProgFactor:	0.92	0.89	0.92	0.97	0.95	0.96	0.95	0.94	0.94	0.91	0.89	0.90
Q1:	3.4	1.1	3.6	2.5	0.9	2.2	3.0	3.0	3.0	4.0	3.6	4.0
UpstreamVC:	0.66	0.66	0.66	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.74	0.74
UpstreamAdj:	0.70	0.70	0.70	1.00	1.00	1.00	0.00	0.00	0.00	0.60	0.60	0.60
EarlyArrAdj:	0.31	0.33	0.30	0.32	0.35	0.32	1.00	1.00	1.00	0.28	0.31	0.29
Q2:	0.2	0.0	0.2	0.2	0.1	0.2	0.7	0.5	0.7	0.2	0.2	0.2
HCM2KQueue:	3.6	1.1	3.8	2.7	1.0	2.3	3.7	3.5	3.6	4.2	3.8	4.2
70th%Factor:	1.19	1.20	1.19	1.19	1.20	1.19	1.19	1.19	1.19	1.19	1.19	1.19
HCM2k70thQ:	4.3	1.3	4.6	3.3	1.2	2.8	4.4	4.2	4.3	5.0	4.5	5.0
85th%Factor:	1.57	1.59	1.56	1.57	1.59	1.58	1.57	1.57	1.57	1.56	1.56	1.56
HCM2k85thQ:	5.6	1.8	6.0	4.3	1.6	3.7	5.8	5.6	5.7	6.6	5.9	6.5
90th%Factor:	1.73	1.78	1.73	1.75	1.78	1.76	1.73	1.74	1.73	1.72	1.73	1.72
HCM2k90thQ:	6.2	2.0	6.6	4.8	1.8	4.1	6.4	6.1	6.3	7.2	6.5	7.2
95th%Factor:	1.99	2.06	1.98	2.02	2.07	2.03	1.99	1.99	1.99	1.98	1.99	1.98
HCM2k95thQ:	7.1	2.3	7.6	5.5	2.0	4.7	7.4	7.1	7.3	8.3	7.5	8.3
98th%Factor:	2.46	2.62	2.44	2.51	2.63	2.54	2.45	2.46	2.46	2.42	2.45	2.42
HCM2k98thQ:	8.8	2.9	9.4	6.8	2.6	5.9	9.1	8.7	9.0	10.2	9.2	10.1

Existing PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #20 SR99 W Front & SB Ramps Morada

Average Delay (sec/veh): 7.5 Worst Case Level Of Service: C[16.3]

Street Name:	SR 99 West Frontage Rd						SR 99 SB Ramps (Morada Lane)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0	1 0	0 1	0	0 0	0 0	0	0 0	1 0	0	0 1
Volume Module:	PM Peak Hour											
Base Vol:	0	61	242	25	84	0	0	0	0	310	0	13
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	61	242	25	84	0	0	0	0	310	0	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	66	263	27	91	0	0	0	0	337	0	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	66	263	27	91	0	0	0	0	337	0	14
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	329	xxxx	xxxxx	xxxx	xxxx	xxxxx	343	xxxx	198
Potent Cap.:	xxxx	xxxx	xxxxx	1230	xxxx	xxxxx	xxxx	xxxx	xxxxx	653	xxxx	843
Move Cap.:	xxxx	xxxx	xxxxx	1230	xxxx	xxxxx	xxxx	xxxx	xxxxx	642	xxxx	843
Volume/Cap:	xxxx	xxxx	xxxx	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	0.53	xxxx	0.02
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	1.7	xxxx	xxxxx	xxxx	xxxx	xxxxx	76.7	xxxx	1.3
Control Del:	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	16.6	xxxx	9.3
LOS by Move:	*	*	*	A	*	*	*	*	*	C	*	A
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			16.3		
ApproachLOS:	*			*			*			C		

Note: Queue reported is the distance per lane in feet.

Existing PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #20 SR99 W Front & SB Ramps Morada

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------|---------------|---------------|---------------|
HevVeh:             2%               2%               2%               2%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:       #218
Dist(miles):      0.250
Speed (mph):       1.00
SignalIndex:      #22
Cycle Time:         100 secs
InitVolume:   197    14
Saturation:  1769   826
ArrivalType:    4     4
G/C:         0.16  0.28
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:          0.219 0.368
gq1:         8.69  1.07
gq2:         1.52  0.02
gq:         10.21  1.10
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:            0.550
beta:             0.645
ta (secs):       900.000
F:                0.003
f:          1.000 1.000
vcmax:         56     3
vcg:           60     4
vcmin:       1000  1000
tp:           0.0   0.0
p:                0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:      0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:   0 xxxxx xxxxx  329 xxxxx xxxxx  351   475    91  343   343   198
AdjCnflVol:    0 xxxxx xxxxx  329 xxxxx xxxxx  351   475    91  343   343   198
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
ConflictVol:   0 xxxxx xxxxx  329 xxxxx xxxxx  351   475    91  343   343   198
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap: 1623 xxxxx xxxxx 1230 xxxxx xxxxx  604   488   966  653   579   843
UpstreamAdj:1.00 x.xxx x.xxx 1.00 x.xxx x.xxx 1.00 1.000 1.000 1.00 1.000 1.000
Potent Cap.:1623 xxxxx xxxxx 1230 xxxxx xxxxx  604   488   966  653   579   843
```


Existing PM Pk Hr

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #21 SR99 E Front & NB Ramps Morada

Average Delay (sec/veh): 6.9 Worst Case Level Of Service: D[27.0]

```
Street Name:      SR 99 East Frontage Rd         SR 99 NB Ramps (Morada Lane)
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  0  0    0  0  0  1  0    1  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:PM Peak Hour
Base Vol:     192  376     0     0  426     2    79    0   178     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  192  376     0     0  426     2    79    0   178     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:   209  409     0     0  463     2    86    0   193     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:  209  409     0     0  463     2    86    0   193     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4 xxxx   6.2 xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  465 xxxx xxxxx  xxxx xxxx xxxxx  1290 xxxx   464  xxxx xxxx xxxxx
Potent Cap.: 1096 xxxx xxxxx  xxxx xxxx xxxxx   180 xxxx   598  xxxx xxxx xxxxx
Move Cap.:   1096 xxxx xxxxx  xxxx xxxx xxxxx   150 xxxx   598  xxxx xxxx xxxxx
Volume/Cap:  0.19 xxxx  xxxx  xxxx xxxx  xxxx  0.57 xxxx  0.32  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   17.5 xxxx xxxxx  xxxx xxxx xxxxx  73.2 xxxx  34.9  xxxx xxxx xxxxx
Control Del:  9.1 xxxx xxxxx xxxxx xxxx xxxxx  56.7 xxxx  13.9 xxxxx xxxx xxxxx
LOS by Move:    A    *     *     *    *     *     F    *     B     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:  0.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:  9.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     A    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx             27.0           xxxxxx
ApproachLOS:         *                *                D                *
```

Note: Queue reported is the distance per lane in feet.

Existing PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #21 SR99 E Front & NB Ramps Morada

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			2%			2%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			12 feet			12 feet			12 feet	
Time Period: 0.25 hour												

Existing PM Pk Hr

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #23 Morada Ln & SR99 E Frontage Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.043
Loss Time (sec):	6	Average Delay (sec/veh):	47.4
Optimal Cycle:	0	Level Of Service:	E

Street Name:	SR 99 East Frontage Road						Morada Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 1	0 0	1	0 0	1! 0	0	0 0	1! 0	0
Volume Module:PM Peak Hour												
Base Vol:	37	42	28	74	51	561	278	121	62	9	104	27
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	37	42	28	74	51	561	278	121	62	9	104	27
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	40	46	30	80	55	610	302	132	67	10	113	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	40	46	30	80	55	610	302	132	67	10	113	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	40	46	30	80	55	610	302	132	67	10	113	29
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.35	0.39	0.26	0.59	0.41	1.00	0.61	0.26	0.13	0.06	0.75	0.19
Final Sat.:	160	182	121	298	205	584	333	145	74	31	359	93
Capacity Analysis Module:												
Vol/Sat:	0.25	0.25	0.25	0.27	0.27	1.04	0.91	0.91	0.91	0.32	0.32	0.32
Crit Moves:			****			****		****		****		
Delay/Veh:	12.7	12.7	12.7	12.5	12.5	73.3	43.9	43.9	43.9	13.3	13.3	13.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.7	12.7	12.7	12.5	12.5	73.3	43.9	43.9	43.9	13.3	13.3	13.3
LOS by Move:	B	B	B	B	B	F	E	E	E	B	B	B
ApproachDel:	12.7			62.2			43.9			13.3		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	12.7			62.2			43.9			13.3		
LOS by Appr:	B			F			E			B		
AllWayAvgQ:	7.4	7.4	7.4	9.2	9.2	261.4	132	132	131.9	10.4	10.4	10.4

Note: Queue reported is the distance per lane in feet.

Existing PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM 4-Way Stop Method
Base Volume Alternative

Intersection #23 Morada Ln & SR99 E Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Time Period: 0.25 hour												
HevVeh:	2%			2%			2%			2%		
Alpha Value: 0.01												
GroupType:	3A			5			2			2		
P[C1]:	0.0000			0.0504			0.0000			0.0000		
P[C2]:	0.0662			0.0158			0.0000			0.0000		
P[C3]:	0.0000			0.5021			0.5305			0.0724		
P[C4]:	0.6590			0.3663			0.3972			0.7121		
P[C5]:	0.2748			0.0654			0.0723			0.2155		
Padj[C1]:	0.03142			0.02381			0.02542			0.03143		
Padj[C2]:	0.02076			0.01415			0.01542			0.02143		
Padj[C3]:	0.01209			-0.01009			-0.01050			0.00926		
Padj[C4]:	-0.03679			-0.02132			-0.02311			-0.04057		
Padj[C5]:	-0.02748			-0.00654			-0.00723			-0.02155		

Lanes:	L1	L2	L1	L2	L1	L2	L1	L2
LaneType:	LTR	NOLANE	RITE	LTTHRU	LTR	NOLANE	LTR	NOLANE
HeadwayAdj:	-0.054	xx.xxx	-0.666	0.330	0.074	xx.xxx	-0.069	xx.xxx
Volume:	116	xxxxxx	610	136	501	xxxxxx	152	xxxxxx
Capacity:	463	xxxxx	584	503	552	xxxxx	483	xxxxx
DegOfUtil:	0.24	x.xx	1.04	0.27	0.91	x.xx	0.30	x.xx
DepHeadway:	7.38	xx.xx	6.16	7.16	6.50	xx.xx	7.19	xx.xx
ServiceTime:	5.4	xx.x	3.9	4.9	4.5	xx.x	5.2	xx.x
Delay:	12.7	xxx.x	73.3	12.5	43.9	xxx.x	13.3	xxx.x
Queue:	0.3	xxx.x	10.5	0.4	5.3	xxx.x	0.4	xxx.x

Approach:	North Bound	South Bound	East Bound	West Bound
ApproachDel:	12.7	62.2	43.9	13.3
Delay Adj:	1.00	1.00	1.00	1.00
ApprAdjDel:	12.7	62.2	43.9	13.3
LOS by Appr:	B	F	E	B

OverallDel: 47.4
OverallLOS: E

Existing PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #24 West Ln & West Ln Frontage Rd

Cycle (sec): 100 Critical Vol./Cap.(X): 0.525
Loss Time (sec): 9 Average Delay (sec/veh): 19.8
Optimal Cycle: 36 Level Of Service: B

Street Name:	West Lane						West Lane Frontage Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	0 1	0	0 1	1 0	0	1 0
Volume Module:PM Peak Hour												
Base Vol:	191	852	146	39	692	65	84	10	104	140	17	9
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	191	852	146	39	692	65	84	10	104	140	17	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	208	926	159	42	752	71	91	11	113	152	18	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	208	926	159	42	752	71	91	11	113	152	18	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	208	926	159	42	752	71	91	11	113	152	18	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.91	0.91	0.93	0.92	0.92	0.72	0.72	0.83	0.64	0.93	0.93
Lanes:	1.00	1.71	0.29	1.00	1.83	0.17	0.89	0.11	1.00	1.00	0.65	0.35
Final Sat.:	1769	2954	506	1769	3192	300	1216	145	1583	1218	1154	611
Capacity Analysis Module:												
Vol/Sat:	0.12	0.31	0.31	0.02	0.24	0.24	0.08	0.08	0.07	0.12	0.02	0.02
Crit Moves:	****				****					****		
Green/Cycle:	0.22	0.62	0.62	0.05	0.45	0.45	0.24	0.24	0.24	0.24	0.24	0.24
Volume/Cap:	0.53	0.50	0.50	0.50	0.53	0.53	0.32	0.32	0.30	0.53	0.07	0.07
Delay/Veh:	35.5	10.5	10.5	51.2	20.2	20.2	32.0	32.0	31.7	35.0	29.6	29.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.5	10.5	10.5	51.2	20.2	20.2	32.0	32.0	31.7	35.0	29.6	29.6
LOS by Move:	D	B	B	D	C	C	C	C	C	C	C	C
HCM2k95thQ:	253	255	255	102	383	383	132	132	141	222	32	32

Note: Queue reported is the distance per lane in feet.

Existing PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	1	1	0	1	0	1	1	0	0	1	0	1	0	1
Lane Group:	L	RT		RT	L	RT		RT	LT	LT		R	L	RT		RT
#LnsInGrps:	1	2		2	1	2		2	1	1		1	1	1		1
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12		12	12	12		12	12	12		12	12	12		12
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		5	5	xxxx		2	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.98	0.98		xxxx	0.99	0.99		xxxx	xxxx	0.85		xxxx	0.95	0.95	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.73	0.73	xxxxx		0.65	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.96	0.96		0.93	0.97	0.97		0.72	0.72	0.83		0.64	0.93	0.93	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.95	0.95		1.00	0.95	0.95		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.91	0.91		0.93	0.92	0.92		0.72	0.72	0.83		0.64	0.93	0.93	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Existing PM Pk Hr

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Base Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North	South	East	West
Cycle Length, C:	xxxxxx	xxxxxx	100	100
Actual Green Time Per Lane Group, G:	xxxxxx	xxxxxx	22.80	22.80
Effective Green Time Per Lane Group, g:	xxxxxx	xxxxxx	23.80	23.80
Opposing Effective Green Time, go:	xxxxxx	xxxxxx	23.80	23.80
Number Of Opposing Lanes, No:	xxxxxx	xxxxxx	1	1
Number Of Lanes In Lane Group, N:	xxxxxx	xxxxxx	1	1
Adjusted Left-Turn Flow Rate, Vlt:	xxxxxx	xxxxxx	91	152
Proportion of Left Turns in Lane Group, Plt:	xxxxxx	xxxxxx	0.89	1.00
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	xxxxxx	xxxxxx	2.54	4.23
Adjusted Opposing Flow Rate, Vo:	xxxxxx	xxxxxx	28	102
Opposing Flow Per Lane Per Cycle, Volc:	xxxxxx	xxxxxx	0.78	2.83
Opposing Platoon Ratio, Rpo:	xxxxxx	xxxxxx	1.33	1.33
Lost Time Per Phase, tl:	xxxxxx	xxxxxx	3.00	3.00
Eff grn until arrival of left-turn car, gf:	xxxxxx	xxxxxx	1.09	0.00
Opposing Queue Ratio, qro:	xxxxxx	xxxxxx	0.68	0.68
Eff grn blocked by opposing queue, gq:	xxxxxx	xxxxxx	0.00	1.19
Eff grn while left turns filter thru, gu:	xxxxxx	xxxxxx	22.71	22.61
Max opposing cars arriving during gq-gf, n:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	0.86	0.81
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	0.89	1.00
Through-car Equivalents, el1:	xxxxxx	xxxxxx	1.44	1.45
Single Lane Through-car Equivalents, el2:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	xxxxxx	xxxxxx	0.16	0.17
Single Lane Left Turn Adjustment Factor, fm:	xxxxxx	xxxxxx	0.73	0.65
Left Turn Adjustment Factor, flt:	xxxxxx	xxxxxx	0.73	0.65

Existing PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #24 West Ln & West Ln Frontage Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Green/Cycle:	0.22	0.62	0.62	0.05	0.45	0.45	0.24	0.24	0.24	0.24	0.24	0.24
ArrivalType:		4			4			4			4	
ProgFactor:	0.95	0.53	0.53	0.99	0.81	0.81	0.92	0.92	0.92	0.94	0.90	0.90
Q1:	4.8	4.6	4.6	1.1	7.1	7.1	2.2	2.2	2.4	3.5	0.5	0.5
UpstreamVC:	0.52	0.52	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.84	0.84	0.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.35	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.4	0.7	0.7	0.9	1.1	1.1	0.5	0.5	0.4	1.0	0.1	0.1
HCM2KQueue:	5.2	5.2	5.2	2.0	8.1	8.1	2.6	2.6	2.8	4.5	0.6	0.6
70th%Factor:	1.19	1.19	1.19	1.20	1.18	1.18	1.19	1.19	1.19	1.19	1.20	1.20
HCM2k70thQ:	6.2	6.2	6.2	2.4	9.6	9.6	3.1	3.1	3.3	5.4	0.7	0.7
85th%Factor:	1.55	1.55	1.55	1.58	1.53	1.53	1.58	1.58	1.57	1.56	1.59	1.59
HCM2k85thQ:	8.1	8.1	8.1	3.2	12.4	12.4	4.1	4.1	4.4	7.0	1.0	1.0
90th%Factor:	1.71	1.71	1.71	1.76	1.67	1.67	1.75	1.75	1.75	1.72	1.79	1.79
HCM2k90thQ:	8.9	8.9	8.9	3.5	13.6	13.6	4.6	4.6	4.9	7.7	1.1	1.1
95th%Factor:	1.95	1.95	1.95	2.04	1.88	1.88	2.02	2.02	2.01	1.97	2.08	2.08
HCM2k95thQ:	10.1	10.2	10.2	4.1	15.3	15.3	5.3	5.3	5.6	8.9	1.3	1.3
98th%Factor:	2.37	2.37	2.37	2.56	2.23	2.23	2.52	2.52	2.51	2.41	2.65	2.65
HCM2k98thQ:	12.3	12.4	12.4	5.1	18.2	18.2	6.6	6.6	7.0	10.8	1.6	1.6

Existing PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #25 West Lane & Knickerbocker Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.520
Loss Time (sec): 12 Average Delay (sec/veh): 24.8
Optimal Cycle: 42 Level Of Service: C

Street Name:	West Lane						Knickerbocker Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:	PM Peak Hour											
Base Vol:	62	1050	75	124	772	64	107	95	37	122	78	67
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	62	1050	75	124	772	64	107	95	37	122	78	67
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	67	1141	82	135	839	70	116	103	40	133	85	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	67	1141	82	135	839	70	116	103	40	133	85	73
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	67	1141	82	135	839	70	116	103	40	133	85	73
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.83	0.93	0.88	0.88	0.93	0.94	0.94	0.93	0.91	0.91
Lanes:	1.00	3.00	1.00	1.00	2.77	0.23	1.00	0.72	0.28	1.00	0.54	0.46
Final Sat.:	1769	5083	1583	1769	4638	384	1769	1284	500	1769	933	801
Capacity Analysis Module:												
Vol/Sat:	0.04	0.22	0.05	0.08	0.18	0.18	0.07	0.08	0.08	0.07	0.09	0.09
Crit Moves:		****		****			****				****	
Green/Cycle:	0.10	0.43	0.43	0.15	0.48	0.48	0.13	0.16	0.16	0.15	0.17	0.17
Volume/Cap:	0.38	0.52	0.12	0.52	0.38	0.38	0.52	0.52	0.52	0.52	0.52	0.52
Delay/Veh:	43.4	21.0	17.1	41.3	16.7	16.7	43.0	40.4	40.4	41.3	39.0	39.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.4	21.0	17.1	41.3	16.7	16.7	43.0	40.4	40.4	41.3	39.0	39.0
LOS by Move:	D	C	B	D	B	B	D	D	D	D	D	D
HCM2k95thQ:	94	361	57	181	234	234	196	223	223	212	237	237

Note: Queue reported is the distance per lane in feet.

Existing PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	1	0	3	0	1	0	2	1	0	0	1	0	1	0	1	0
Lane Group:	L	T	R		L	RT	RT		L	RT	RT		L	RT	RT	
#LnsInGrps:	1	3	1		1	3	3		1	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	0.99	0.99		xxxx	0.96	0.96		xxxx	0.93	0.93	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.98	0.83		0.93	0.97	0.97		0.93	0.94	0.94		0.93	0.91	0.91	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	0.91	1.00		1.00	0.91	0.91		1.00	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.93	0.89	0.83		0.93	0.88	0.88		0.93	0.94	0.94		0.93	0.91	0.91	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Existing PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #25 West Lane & Knickerbocker Dr

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.10	0.43	0.43		0.15	0.48	0.48		0.13	0.16	0.16		0.15	0.17	0.17	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.83	0.76		0.97	0.75	0.75		0.97	0.97	0.97		0.97	0.96	0.96	
Q1:	1.7	7.0	1.0		3.4	4.4	4.4		2.9	3.5	3.5		3.3	3.8	3.8	
UpstreamVC:	0.46	0.46	0.46		0.53	0.53	0.53		0.00	0.00	0.00		0.00	0.00	0.00	
UpstreamAdj:	0.89	0.89	0.89		0.84	0.84	0.84		0.00	0.00	0.00		0.00	0.00	0.00	
EarlyArrAdj:	0.23	0.57	0.52		0.27	0.57	0.57		1.00	1.00	1.00		1.00	1.00	1.00	
Q2:	0.1	0.6	0.1		0.3	0.3	0.3		1.0	1.0	1.0		1.0	1.0	1.0	
HCM2KQueue:	1.8	7.6	1.1		3.6	4.8	4.8		4.0	4.5	4.5		4.3	4.8	4.8	
70th%Factor:	1.20	1.18	1.20		1.19	1.19	1.19		1.19	1.19	1.19		1.19	1.19	1.19	
HCM2k70thQ:	2.2	9.0	1.3		4.3	5.7	5.7		4.7	5.4	5.4		5.1	5.8	5.8	
85th%Factor:	1.58	1.53	1.59		1.57	1.56	1.56		1.56	1.56	1.56		1.56	1.56	1.56	
HCM2k85thQ:	2.9	11.7	1.8		5.7	7.4	7.4		6.2	7.1	7.1		6.7	7.5	7.5	
90th%Factor:	1.76	1.67	1.78		1.73	1.72	1.72		1.73	1.72	1.72		1.72	1.71	1.71	
HCM2k90thQ:	3.3	12.8	2.0		6.3	8.2	8.2		6.8	7.8	7.8		7.4	8.3	8.3	
95th%Factor:	2.04	1.89	2.06		1.99	1.96	1.96		1.98	1.97	1.97		1.97	1.96	1.96	
HCM2k95thQ:	3.8	14.5	2.3		7.3	9.3	9.3		7.8	8.9	8.9		8.5	9.5	9.5	
98th%Factor:	2.57	2.26	2.62		2.46	2.39	2.39		2.44	2.41	2.41		2.42	2.39	2.39	
HCM2k98thQ:	4.7	17.2	2.9		8.9	11.4	11.4		9.6	10.9	10.9		10.4	11.6	11.6	

Existing PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #26 West Lane & Hammer Lane

Cycle (sec):	100	Critical Vol./Cap.(X):	0.721
Loss Time (sec):	12	Average Delay (sec/veh):	35.5
Optimal Cycle:	62	Level Of Service:	D

Street Name:	West Lane						Hammer Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4 0 1	2	0	4 0 1	2	0	4 0 1	2	0	4 0 1
Volume Module:	PM Peak Hour											
Base Vol:	517	828	199	219	605	218	410	1242	196	385	1104	107
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	517	828	199	219	605	218	410	1242	196	385	1104	107
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	562	900	216	238	658	237	446	1350	213	418	1200	116
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	562	900	216	238	658	237	446	1350	213	418	1200	116
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	562	900	216	238	658	237	446	1350	213	418	1200	116
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00	2.00	4.00	1.00
Final Sat.:	3432	6778	1583	3432	6778	1583	3432	6778	1583	3432	6778	1583
Capacity Analysis Module:												
Vol/Sat:	0.16	0.13	0.14	0.07	0.10	0.15	0.13	0.20	0.13	0.12	0.18	0.07
Crit Moves:	****					****		****		****		
Green/Cycle:	0.23	0.29	0.29	0.15	0.21	0.21	0.19	0.28	0.28	0.17	0.26	0.26
Volume/Cap:	0.72	0.46	0.47	0.47	0.47	0.72	0.69	0.72	0.49	0.72	0.69	0.29
Delay/Veh:	39.0	29.4	30.1	39.9	35.0	44.5	41.0	34.1	31.1	43.7	34.7	30.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.0	29.4	30.1	39.9	35.0	44.5	41.0	34.1	31.1	43.7	34.7	30.2
LOS by Move:	D	C	C	D	D	D	D	C	C	D	C	C
HCM2k95thQ:	436	288	262	165	222	325	364	508	266	296	402	125

Note: Queue reported is the distance per lane in feet.

Existing PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2	0	4 0 1	2	0	4 0 1	2	0	4 0 1	2	0	4 0 1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	4	1	2	4	1	2	4	1	2	4	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	2			2			2			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Fnl Sat Adj:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Existing PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #26 West Lane & Hammer Lane

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.23	0.29	0.29	0.15	0.21	0.21	0.19	0.28	0.28	0.17	0.26	0.26
ArrivalType:		4			4			4			4	
ProgFactor:	0.97	0.91	0.91	0.97	0.95	0.97	0.97	0.95	0.92	0.98	0.95	0.91
Q1:	7.2	5.1	4.5	3.0	4.2	5.9	5.8	8.9	4.6	5.5	7.9	2.4
UpstreamVC:	0.00	0.00	0.00	0.38	0.38	0.38	0.00	0.00	0.00	0.66	0.66	0.66
UpstreamAdj:	0.00	0.00	0.00	0.93	0.93	0.93	0.00	0.00	0.00	0.70	0.70	0.70
EarlyArrAdj:	1.00	1.00	1.00	0.30	0.39	0.35	1.00	1.00	1.00	0.25	0.33	0.30
Q2:	2.2	0.8	0.9	0.3	0.3	0.8	1.9	2.3	0.9	0.6	0.7	0.1
HCM2KQueue:	9.4	6.0	5.4	3.3	4.5	6.8	7.7	11.2	5.5	6.2	8.6	2.5
70th%Factor:	1.18	1.19	1.19	1.19	1.19	1.18	1.18	1.18	1.19	1.19	1.18	1.19
HCM2k70thQ:	11.1	7.1	6.4	3.9	5.4	8.0	9.1	13.1	6.5	7.3	10.1	3.0
85th%Factor:	1.52	1.55	1.55	1.57	1.56	1.54	1.53	1.51	1.55	1.54	1.53	1.58
HCM2k85thQ:	14.3	9.2	8.4	5.2	7.0	10.5	11.8	16.8	8.5	9.5	13.1	3.9
90th%Factor:	1.65	1.70	1.71	1.74	1.72	1.68	1.67	1.63	1.70	1.69	1.66	1.75
HCM2k90thQ:	15.5	10.1	9.2	5.7	7.7	11.4	12.9	18.2	9.3	10.4	14.3	4.3
95th%Factor:	1.86	1.93	1.94	2.00	1.97	1.91	1.89	1.82	1.94	1.93	1.87	2.02
HCM2k95thQ:	17.5	11.5	10.5	6.6	8.9	13.0	14.6	20.3	10.6	11.9	16.1	5.0
98th%Factor:	2.18	2.33	2.36	2.48	2.41	2.29	2.25	2.12	2.36	2.32	2.22	2.53
HCM2k98thQ:	20.6	13.9	12.7	8.2	10.8	15.6	17.4	23.7	12.9	14.3	19.0	6.3

Existing PM Pk Hr

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #27 Hammer Lane & Holman Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.659
Loss Time (sec): 12 Average Delay (sec/veh): 32.2
Optimal Cycle: 54 Level Of Service: C

Street Name:	Hammer Lane						Holman Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2 1	0	2	0	3 0	1	2	0	3 1	0
Volume Module:	PM Peak Hour											
Base Vol:	274	403	208	262	269	190	485	1193	143	191	1176	98
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	274	403	208	262	269	190	485	1193	143	191	1176	98
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	298	438	226	285	292	207	527	1297	155	208	1278	107
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	298	438	226	285	292	207	527	1297	155	208	1278	107
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	298	438	226	285	292	207	527	1297	155	208	1278	107
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.85	0.85	0.90	0.89	0.83	0.90	0.88	0.88	0.90	0.88	0.88
Lanes:	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.57	0.43	2.00	3.69	0.31
Final Sat.:	3432	3216	1608	3432	5083	1583	3432	5955	714	3432	6181	515
Capacity Analysis Module:												
Vol/Sat:	0.09	0.14	0.14	0.08	0.06	0.13	0.15	0.22	0.22	0.06	0.21	0.21
Crit Moves:		****		****			****				****	
Green/Cycle:	0.13	0.21	0.21	0.13	0.20	0.20	0.23	0.43	0.43	0.12	0.31	0.31
Volume/Cap:	0.65	0.66	0.68	0.66	0.29	0.65	0.66	0.51	0.51	0.51	0.66	0.66
Delay/Veh:	44.5	38.0	38.6	45.4	34.1	41.6	36.8	21.0	21.0	42.4	30.4	30.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.5	38.0	38.6	45.4	34.1	41.6	36.8	21.0	21.0	42.4	30.4	30.4
LOS by Move:	D	D	D	D	C	D	D	C	C	D	C	C
HCM2k95thQ:	271	362	378	215	128	278	336	338	338	183	473	473

Note: Queue reported is the distance per lane in feet.

Existing PM Pk Hr

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	2	0	2	1	0	2	0	3	0	1	2	0	3	1	0	2
Lane Group:	L	RT			RT	L	T		R	L	RT		RT	L	RT	
#LnsInGrps:	2	3			3	2	3		1	2	4		4	2	4	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12			12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		2				2				2				2		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > > > >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Bus Stp Adj:	xxxx	1.00	1.00		xxxx	xxxx	1.00		xxxx	1.00	1.00		xxxx	1.00	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	0.95	0.95		xxxx	xxxx	0.85		xxxx	0.98	0.98		xxxx	0.99	0.99	
LT Adj:	0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.93	0.93	0.93		0.93	0.98	0.83		0.93	0.96	0.96		0.93	0.97	0.97	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	0.97	0.91	0.91		0.97	0.91	1.00		0.97	0.91	0.91		0.97	0.91	0.91	
Fnl Sat Adj:	0.90	0.85	0.85		0.90	0.89	0.83		0.90	0.88	0.88		0.90	0.88	0.88	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >															
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > > > >															
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	

Existing PM Pk Hr

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #27 Hammer Lane & Holman Road

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Green/Cycle:	0.13	0.21	0.21		0.13	0.20	0.20		0.23	0.43	0.43		0.12	0.31	0.31	
ArrivalType:		4				4				4				4		
ProgFactor:	0.98	0.96	0.97		0.98	0.94	0.97		0.96	0.83	0.83		0.98	0.93	0.93	
Q1:	4.0	5.9	6.2		3.8	2.4	5.1		6.5	6.7	6.7		2.7	8.5	8.5	
UpstreamVC:	0.00	0.00	0.00		0.14	0.14	0.14		0.72	0.72	0.72		0.00	0.00	0.00	
UpstreamAdj:	0.00	0.00	0.00		1.00	1.00	1.00		0.62	0.62	0.62		0.00	0.00	0.00	
EarlyArrAdj:	1.00	1.00	1.00		0.30	0.40	0.37		0.27	0.39	0.39		1.00	1.00	1.00	
Q2:	1.6	1.7	1.9		0.5	0.2	0.7		0.5	0.4	0.4		1.0	1.8	1.8	
HCM2KQueue:	5.6	7.7	8.0		4.4	2.5	5.8		7.0	7.1	7.1		3.7	10.3	10.3	
70th%Factor:	1.19	1.18	1.18		1.19	1.19	1.19		1.18	1.18	1.18		1.19	1.18	1.18	
HCM2k70thQ:	6.6	9.1	9.5		5.2	3.0	6.8		8.3	8.4	8.4		4.4	12.1	12.1	
85th%Factor:	1.55	1.53	1.53		1.56	1.58	1.55		1.54	1.54	1.54		1.57	1.51	1.51	
HCM2k85thQ:	8.7	11.7	12.3		6.8	4.0	8.9		10.8	10.9	10.9		5.8	15.6	15.6	
90th%Factor:	1.70	1.67	1.67		1.72	1.75	1.70		1.68	1.68	1.68		1.73	1.64	1.64	
HCM2k90thQ:	9.5	12.8	13.4		7.5	4.4	9.8		11.8	11.9	11.9		6.4	16.9	16.9	
95th%Factor:	1.94	1.89	1.88		1.97	2.02	1.94		1.91	1.90	1.90		1.99	1.84	1.84	
HCM2k95thQ:	10.8	14.5	15.1		8.6	5.1	11.1		13.4	13.5	13.5		7.3	18.9	18.9	
98th%Factor:	2.35	2.26	2.24		2.42	2.52	2.34		2.28	2.28	2.28		2.45	2.15	2.15	
HCM2k98thQ:	13.1	17.3	18.0		10.5	6.4	13.5		16.1	16.2	16.2		9.0	22.1	22.1	

Existing PM Pk Hr

Base Queue Length Report (feet)

Node	Intersection	Northbound L	Northbound -- T	Northbound -- R	Southbound L	Southbound -- T	Southbound -- R	Eastbound L	Eastbound -- T	Eastbound -- R	Westbound L	Westbound -- T	Westbound -- R
#3	[HCM2k95thQ]:	225	91	177	156	351	351	146	379	341	237	281	281
#4	[HCM2k95thQ]:	168	155	150	45	324	324	82	490	61	240	402	2
#5	[HCM2k95thQ]:	151	619	362	155	545	122	208	835	835	505	643	643
#6	[HCM2k95thQ]:	26	431	431	233	263	263	209	209	209	496	496	496
#7	[HCM2k95thQ]:	0	43	43	37	37	37	56	14	14	29	13	13
#8	[HCM2k95thQ]:	534	247	247	48	504	504	400	464	325	111	723	723
#9	[2Way95thQ]:	xxxx	xxxx	xxxx	0.6	xxxx	xxxx	120	120	xxxx	176	176	176
#10	[2Way95thQ]:	xxxx	xxxx	xxxx	2.7	2.7	2.7	0.4	0.4	xxxx	xxxx	xxxx	xxxx
#11	[2Way95thQ]:	xxxx	xxxx	xxxx	19.0	19.0	19.0	1.3	1.3	xxxx	xxxx	xxxx	xxxx
#12	[AllWayAvgQ]	22.1	22.1	9.5	5.3	5.3	5.3	48.0	48.0	15.2	237	237	0.9
#13	[AllWayAvgQ]	62.3	62.3	4.1	2.3	2.3	2.5	21.9	21.9	19.0	26.2	26.2	26.2
#14	[2Way95thQ]:	xxxx	xxxx	xxxx	13.9	13.9	xxxx	xxxx	xxxx	xxxx	5.5	xxxx	32.1
#15	[2Way95thQ]:	3.5	3.5	xxxx	xxxx	xxxx	xxxx	62.3	xxxx	4.2	xxxx	xxxx	xxxx
#18	[HCM2k95thQ]:	62	414	392	336	220	8	131	102	76	261	436	436
#19	[HCM2k95thQ]:	178	57	190	137	51	118	185	177	181	207	187	207
#20	[2Way95thQ]:	xxxx	xxxx	xxxx	1.7	1.7	xxxx	xxxx	xxxx	xxxx	76.7	xxxx	1.3
#21	[2Way95thQ]:	17.5	17.5	xxxx	xxxx	xxxx	xxxx	73.2	xxxx	34.9	xxxx	xxxx	xxxx
#23	[AllWayAvgQ]	7.4	7.4	7.4	9.2	9.2	261	132	132	132	10.4	10.4	10.4
#24	[HCM2k95thQ]:	253	255	255	102	383	383	132	132	141	222	32	32
#25	[HCM2k95thQ]:	94	361	57	181	234	234	196	223	223	212	237	237
#26	[HCM2k95thQ]:	436	288	262	165	222	325	364	508	266	296	402	125
#27	[HCM2k95thQ]:	271	362	378	215	128	278	336	338	338	183	473	473

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	294	232	127	305	12	145	21	156	11	23	7
Future Volume (veh/h)	6	294	232	127	305	12	145	21	156	11	23	7
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	7	320	0	138	332	0	158	23	0	12	25	8
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	133	841	0	316	580	0	466	34	0	206	215	57
Arrive On Green	0.46	0.46	0.00	0.46	0.46	0.00	0.18	0.18	0.00	0.18	0.18	0.18
Sat Flow, veh/h	11	1843	0	336	1272	0	1275	186	0	258	1186	312
Grp Volume(v), veh/h	327	0	0	470	0	0	181	0	0	45	0	0
Grp Sat Flow(s),veh/h/ln	1854	0	0	1608	0	0	1460	0	0	1757	0	0
Q Serve(g_s), s	0.0	0.0	0.0	2.6	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.3	0.0	0.0	5.9	0.0	0.0	3.3	0.0	0.0	0.6	0.0	0.0
Prop In Lane	0.02		0.00	0.29		0.00	0.87		0.00	0.27		0.18
Lane Grp Cap(c), veh/h	974	0	0	896	0	0	500	0	0	477	0	0
V/C Ratio(X)	0.34	0.00	0.00	0.52	0.00	0.00	0.36	0.00	0.00	0.09	0.00	0.00
Avail Cap(c_a), veh/h	1838	0	0	1613	0	0	1133	0	0	1218	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.1	0.0	0.0	5.7	0.0	0.0	10.9	0.0	0.0	9.9	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.5	0.0	0.0	0.4	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.0	2.9	0.0	0.0	1.4	0.0	0.0	0.3	0.0	0.0
LnGrp Delay(d),s/veh	5.3	0.0	0.0	6.2	0.0	0.0	11.3	0.0	0.0	9.9	0.0	0.0
LnGrp LOS	A			A			B			A		
Approach Vol, veh/h		327			470			181			45	
Approach Delay, s/veh		5.3			6.2			11.3			9.9	
Approach LOS		A			A			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		10.2		18.5		10.2		18.5
Change Period (Y+Rc), s		5.0		5.4		5.0		5.4
Max Green Setting (Gmax), s		18.0		26.6		18.0		26.6
Max Q Clear Time (g_c+I1), s		5.3		5.3		2.6		7.9
Green Ext Time (p_c), s		1.0		5.5		1.1		5.2

Intersection Summary	
HCM 2010 Ctrl Delay	7.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	457	123	31	37	196	35	32	73	39	46	48	516
Future Volume (veh/h)	457	123	31	37	196	35	32	73	39	46	48	516
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	497	134	34	40	213	38	35	79	42	50	52	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	749	160	41	184	854	141	149	150	70	228	165	0
Arrive On Green	0.61	0.61	0.61	0.61	0.61	0.61	0.15	0.15	0.15	0.15	0.15	0.00
Sat Flow, veh/h	979	264	67	137	1407	232	259	974	454	619	1071	0
Grp Volume(v), veh/h	665	0	0	291	0	0	156	0	0	102	0	0
Grp Sat Flow(s),veh/h/ln	1310	0	0	1777	0	0	1688	0	0	1690	0	0
Q Serve(g_s), s	12.4	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	15.5	0.0	0.0	3.0	0.0	0.0	3.4	0.0	0.0	2.0	0.0	0.0
Prop In Lane	0.75		0.05	0.14		0.13	0.22		0.27	0.49		0.00
Lane Grp Cap(c), veh/h	950	0	0	1179	0	0	369	0	0	393	0	0
V/C Ratio(X)	0.70	0.00	0.00	0.25	0.00	0.00	0.42	0.00	0.00	0.26	0.00	0.00
Avail Cap(c_a), veh/h	1301	0	0	1659	0	0	893	0	0	875	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.8	0.0	0.0	3.7	0.0	0.0	15.9	0.0	0.0	15.4	0.0	0.0
Incr Delay (d2), s/veh	1.0	0.0	0.0	0.1	0.0	0.0	0.8	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	0.0	0.0	1.5	0.0	0.0	1.7	0.0	0.0	1.1	0.0	0.0
LnGrp Delay(d),s/veh	6.8	0.0	0.0	3.8	0.0	0.0	16.7	0.0	0.0	15.7	0.0	0.0
LnGrp LOS	A			A			B			B		
Approach Vol, veh/h		665			291			156			102	
Approach Delay, s/veh		6.8			3.8			16.7			15.7	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		10.9		29.7		10.9		29.7
Change Period (Y+Rc), s		4.6		5.1		4.6		5.1
Max Green Setting (Gmax), s		19.2		36.1		19.2		36.1
Max Q Clear Time (g_c+I1), s		5.4		17.5		4.0		5.0
Green Ext Time (p_c), s		1.2		7.1		1.3		8.7

Intersection Summary	
HCM 2010 Ctrl Delay	8.1
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	319	203	99	390	18	180	17	135	18	44	9
Future Volume (veh/h)	3	319	203	99	390	18	180	17	135	18	44	9
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	3	347	0	108	424	0	196	18	0	20	48	10
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	113	858	0	239	670	0	496	30	0	191	284	49
Arrive On Green	0.46	0.46	0.00	0.46	0.46	0.00	0.22	0.22	0.00	0.22	0.22	0.22
Sat Flow, veh/h	3	1856	0	229	1449	0	1301	137	0	237	1304	227
Grp Volume(v), veh/h	350	0	0	532	0	0	214	0	0	78	0	0
Grp Sat Flow(s),veh/h/ln	1859	0	0	1678	0	0	1439	0	0	1768	0	0
Q Serve(g_s), s	0.0	0.0	0.0	3.2	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.0	0.0	0.0	7.6	0.0	0.0	4.3	0.0	0.0	1.1	0.0	0.0
Prop In Lane	0.01		0.00	0.20		0.00	0.92		0.00	0.26		0.13
Lane Grp Cap(c), veh/h	971	0	0	909	0	0	526	0	0	524	0	0
V/C Ratio(X)	0.36	0.00	0.00	0.59	0.00	0.00	0.41	0.00	0.00	0.15	0.00	0.00
Avail Cap(c_a), veh/h	1572	0	0	1429	0	0	1029	0	0	1139	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.8	0.0	0.0	6.6	0.0	0.0	11.5	0.0	0.0	10.4	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.6	0.0	0.0	0.5	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	0.0	3.7	0.0	0.0	1.8	0.0	0.0	0.6	0.0	0.0
LnGrp Delay(d),s/veh	6.0	0.0	0.0	7.2	0.0	0.0	12.0	0.0	0.0	10.5	0.0	0.0
LnGrp LOS	A			A			B			B		
Approach Vol, veh/h		350			532			214			78	
Approach Delay, s/veh		6.0			7.2			12.0			10.5	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		12.1		20.4		12.1		20.4
Change Period (Y+Rc), s		5.0		5.4		5.0		5.4
Max Green Setting (Gmax), s		19.0		25.6		19.0		25.6
Max Q Clear Time (g_c+I1), s		6.3		6.0		3.1		9.6
Green Ext Time (p_c), s		1.3		5.9		1.5		5.4

Intersection Summary	
HCM 2010 Ctrl Delay	8.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	278	121	62	9	104	27	37	42	28	74	51	561
Future Volume (veh/h)	278	121	62	9	104	27	37	42	28	74	51	561
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	302	132	67	10	113	29	40	46	30	80	55	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	580	217	90	159	654	158	252	128	70	353	119	0
Arrive On Green	0.46	0.46	0.46	0.46	0.46	0.46	0.16	0.16	0.16	0.16	0.16	0.00
Sat Flow, veh/h	788	467	194	36	1406	340	451	793	434	872	740	0
Grp Volume(v), veh/h	501	0	0	152	0	0	116	0	0	135	0	0
Grp Sat Flow(s),veh/h/ln	1449	0	0	1782	0	0	1678	0	0	1613	0	0
Q Serve(g_s), s	6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Cycle Q Clear(g_c), s	7.4	0.0	0.0	1.3	0.0	0.0	1.6	0.0	0.0	1.9	0.0	0.0
Prop In Lane	0.60		0.13	0.07		0.19	0.34		0.26	0.59		0.00
Lane Grp Cap(c), veh/h	887	0	0	971	0	0	449	0	0	472	0	0
V/C Ratio(X)	0.56	0.00	0.00	0.16	0.00	0.00	0.26	0.00	0.00	0.29	0.00	0.00
Avail Cap(c_a), veh/h	1271	0	0	1444	0	0	1366	0	0	1340	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.7	0.0	0.0	4.2	0.0	0.0	10.2	0.0	0.0	10.3	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.1	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	0.0	0.7	0.0	0.0	0.8	0.0	0.0	0.9	0.0	0.0
LnGrp Delay(d),s/veh	6.3	0.0	0.0	4.3	0.0	0.0	10.5	0.0	0.0	10.6	0.0	0.0
LnGrp LOS	A			A			B			B		
Approach Vol, veh/h		501			152			116			135	
Approach Delay, s/veh		6.3			4.3			10.5			10.6	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		9.3		17.6		9.3		17.6
Change Period (Y+Rc), s		5.0		5.1		5.0		5.1
Max Green Setting (Gmax), s		20.0		19.9		20.0		19.9
Max Q Clear Time (g_c+I1), s		3.6		9.4		3.9		3.3
Green Ext Time (p_c), s		1.3		3.2		1.2		4.1

Intersection Summary	
HCM 2010 Ctrl Delay	7.1
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	179	441	50	385	7	207	26	19	3	19	69
Future Volume (veh/h)	38	179	441	50	385	7	207	26	19	3	19	69
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	41	195	479	54	418	8	225	28	21	3	21	75
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	580	950	808	75	409	348	271	151	113	15	106	104
Arrive On Green	0.33	0.51	0.51	0.04	0.22	0.22	0.15	0.15	0.15	0.07	0.07	0.07
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	990	742	231	1620	1583
Grp Volume(v), veh/h	41	195	479	54	418	8	225	0	49	24	0	75
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	0	1732	1851	0	1583
Q Serve(g_s), s	1.4	4.9	18.3	2.6	18.9	0.3	10.6	0.0	2.1	1.1	0.0	4.0
Cycle Q Clear(g_c), s	1.4	4.9	18.3	2.6	18.9	0.3	10.6	0.0	2.1	1.1	0.0	4.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.43	0.12		1.00
Lane Grp Cap(c), veh/h	580	950	808	75	409	348	271	0	265	122	0	104
V/C Ratio(X)	0.07	0.21	0.59	0.72	1.02	0.02	0.83	0.00	0.19	0.20	0.00	0.72
Avail Cap(c_a), veh/h	580	950	808	103	409	348	433	0	423	452	0	387
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.80	0.80	0.80	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.0	11.5	14.8	40.7	33.5	26.3	35.3	0.0	31.8	38.0	0.0	39.4
Incr Delay (d2), s/veh	0.0	0.4	2.6	14.2	49.9	0.1	7.3	0.0	0.3	0.8	0.0	9.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.6	8.6	1.6	15.3	0.2	5.7	0.0	1.0	0.6	0.0	2.0
LnGrp Delay(d),s/veh	20.0	11.9	17.4	54.9	83.5	26.4	42.6	0.0	32.1	38.8	0.0	48.4
LnGrp LOS	B	B	B	D	F	C	D		C	D		D
Approach Vol, veh/h		715			480			274			99	
Approach Delay, s/veh		16.0			79.3			40.7			46.1	
Approach LOS		B			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		18.2	8.2	49.0		10.7	33.2	24.0
Change Period (Y+Rc), s		5.0	4.6	5.1		5.0	5.1	* 5.1
Max Green Setting (Gmax), s		21.0	5.0	18.9		21.0	5.0	* 19
Max Q Clear Time (g_c+I1), s		12.6	4.6	20.3		6.0	3.4	20.9
Green Ext Time (p_c), s		0.6	0.0	0.0		0.2	0.6	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	41.6
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	20.9

Movement	SET	SER	NWL	NWT	NEL	NER
Traffic Vol, veh/h	511	2	230	451	95	214
Future Vol, veh/h	511	2	230	451	95	214
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	555	2	250	490	103	233

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	558	0	1547	557
Stage 1	-	-	-	-	557	-
Stage 2	-	-	-	-	990	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1013	-	126	530
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	360	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1013	-	~ 83	530
Mov Cap-2 Maneuver	-	-	-	-	~ 83	-
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	238	-

Approach	SE	NW	NE
HCM Control Delay, s	0	3.3	94.3
HCM LOS			F

Minor Lane/Major Mvmt	NEL n1	NEL n2	NWL	NWT	SET	SER
Capacity (veh/h)	83	530	1013	-	-	-
HCM Lane V/C Ratio	1.244	0.439	0.247	-	-	-
HCM Control Delay (s)	268.5	17	9.7	0	-	-
HCM Lane LOS	F	C	A	A	-	-
HCM 95th %tile Q(veh)	7.6	2.2	1	-	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	361	318	41	327	7	397	42	70	8	22	68
Future Volume (veh/h)	36	361	318	41	327	7	397	42	70	8	22	68
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	39	392	346	45	355	8	432	46	76	9	24	74
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	63	403	343	414	783	665	449	160	264	33	89	106
Arrive On Green	0.04	0.22	0.22	0.23	0.42	0.42	0.25	0.25	0.25	0.07	0.07	0.07
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	633	1045	501	1337	1583
Grp Volume(v), veh/h	39	392	346	45	355	8	432	0	122	33	0	74
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	0	1678	1838	0	1583
Q Serve(g_s), s	1.8	17.8	18.4	1.7	11.6	0.3	20.4	0.0	5.0	1.5	0.0	3.9
Cycle Q Clear(g_c), s	1.8	17.8	18.4	1.7	11.6	0.3	20.4	0.0	5.0	1.5	0.0	3.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.62	0.27		1.00
Lane Grp Cap(c), veh/h	63	403	343	414	783	665	449	0	424	123	0	106
V/C Ratio(X)	0.62	0.97	1.01	0.11	0.45	0.01	0.96	0.00	0.29	0.27	0.00	0.70
Avail Cap(c_a), veh/h	104	403	343	414	783	665	449	0	424	454	0	391
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.77	0.77	0.77	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.4	33.0	33.3	25.6	17.7	14.4	31.4	0.0	25.6	37.7	0.0	38.8
Incr Delay (d2), s/veh	7.5	33.1	45.2	0.1	1.9	0.0	32.9	0.0	0.4	1.2	0.0	8.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	12.9	12.3	0.8	6.3	0.1	14.1	0.0	2.3	0.8	0.0	1.9
LnGrp Delay(d),s/veh	48.0	66.2	78.5	25.8	19.5	14.4	64.3	0.0	25.9	38.9	0.0	46.9
LnGrp LOS	D	E	F	C	B	B	E		C	D		D
Approach Vol, veh/h		777			408			554			107	
Approach Delay, s/veh		70.8			20.1			55.8			44.4	
Approach LOS		E			C			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		26.2	24.9	23.5		10.4	7.6	40.8
Change Period (Y+Rc), s		* 4.7	5.1	* 5.1		4.7	4.6	5.1
Max Green Setting (Gmax), s		* 22	5.0	* 18		21.0	5.0	18.4
Max Q Clear Time (g_c+I1), s		22.4	3.7	20.4		5.9	3.8	13.6
Green Ext Time (p_c), s		0.0	0.0	0.0		0.3	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	53.6
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	389	19	15	638	116	13	15	41	96	31	349
Future Volume (veh/h)	230	389	19	15	638	116	13	15	41	96	31	349
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	250	423	21	16	693	0	14	16	45	104	34	379
Adj No. of Lanes	1	1	0	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	288	942	47	100	811	689	66	53	354	79	15	611
Arrive On Green	0.16	0.53	0.53	0.06	0.44	0.00	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1774	1760	87	1774	1863	1583	0	237	1583	0	68	1583
Grp Volume(v), veh/h	250	0	444	16	693	0	30	0	45	138	0	379
Grp Sat Flow(s),veh/h/ln	1774	0	1847	1774	1863	1583	237	0	1583	68	0	1583
Q Serve(g_s), s	11.0	0.0	11.8	0.7	26.8	0.0	0.0	0.0	1.8	0.0	0.0	15.5
Cycle Q Clear(g_c), s	11.0	0.0	11.8	0.7	26.8	0.0	17.9	0.0	1.8	17.9	0.0	15.5
Prop In Lane	1.00		0.05	1.00		1.00	0.47		1.00	0.75		1.00
Lane Grp Cap(c), veh/h	288	0	988	100	811	689	119	0	354	94	0	611
V/C Ratio(X)	0.87	0.00	0.45	0.16	0.85	0.00	0.25	0.00	0.13	1.47	0.00	0.62
Avail Cap(c_a), veh/h	297	0	988	111	811	689	119	0	354	94	0	611
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.99	0.99	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.7	0.0	11.4	36.0	20.3	0.0	26.0	0.0	24.8	37.2	0.0	19.8
Incr Delay (d2), s/veh	22.5	0.0	1.5	0.7	11.1	0.0	1.1	0.0	0.2	258.5	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	0.0	6.3	0.4	16.2	0.0	0.6	0.0	0.8	8.8	0.0	7.1
LnGrp Delay(d),s/veh	55.2	0.0	12.9	36.7	31.4	0.0	27.1	0.0	25.0	295.6	0.0	21.8
LnGrp LOS	F		B	D	C		C		C	F		C
Approach Vol, veh/h		694			709			75			517	
Approach Delay, s/veh		28.1			31.5			25.8			94.9	
Approach LOS		C			C			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		22.5	9.6	47.9		22.5	17.6	39.9
Change Period (Y+Rc), s		4.6	5.1	* 5.1		4.6	4.6	5.1
Max Green Setting (Gmax), s		17.9	5.0	* 43		17.9	13.4	34.4
Max Q Clear Time (g_c+I1), s		19.9	2.7	13.8		19.9	13.0	28.8
Green Ext Time (p_c), s		0.0	1.1	3.0		0.0	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	46.5
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	193	498	50	391	7	323	26	19	3	19	69
Future Volume (veh/h)	38	193	498	50	391	7	323	26	19	3	19	69
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	41	210	541	54	425	8	351	28	21	3	21	75
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	168	598	508	88	498	424	420	234	176	16	110	108
Arrive On Green	0.09	0.32	0.32	0.05	0.27	0.27	0.24	0.24	0.24	0.07	0.07	0.07
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	990	742	231	1620	1583
Grp Volume(v), veh/h	41	210	541	54	425	8	351	0	49	24	0	75
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	0	1732	1851	0	1583
Q Serve(g_s), s	1.3	5.1	18.9	1.8	12.8	0.2	11.1	0.0	1.3	0.7	0.0	2.7
Cycle Q Clear(g_c), s	1.3	5.1	18.9	1.8	12.8	0.2	11.1	0.0	1.3	0.7	0.0	2.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.43	0.12		1.00
Lane Grp Cap(c), veh/h	168	598	508	88	498	424	420	0	410	126	0	108
V/C Ratio(X)	0.24	0.35	1.06	0.61	0.85	0.02	0.84	0.00	0.12	0.19	0.00	0.70
Avail Cap(c_a), veh/h	168	598	508	151	598	508	633	0	617	660	0	565
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.7	15.3	20.0	27.4	20.5	15.9	21.4	0.0	17.6	25.9	0.0	26.8
Incr Delay (d2), s/veh	0.7	0.4	58.3	6.7	10.0	0.0	6.1	0.0	0.1	0.7	0.0	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.6	16.3	1.0	7.9	0.1	6.1	0.0	0.6	0.4	0.0	1.4
LnGrp Delay(d),s/veh	25.5	15.7	78.3	34.1	30.4	15.9	27.4	0.0	17.8	26.6	0.0	34.7
LnGrp LOS	C	B	F	C	C	B	C		B	C		C
Approach Vol, veh/h		792			487			400			99	
Approach Delay, s/veh		58.9			30.6			26.2			32.7	
Approach LOS		E			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		18.7	7.5	24.0		8.7	10.7	20.9
Change Period (Y+Rc), s		* 4.7	4.6	5.1		4.7	5.1	* 5.1
Max Green Setting (Gmax), s		* 21	5.0	18.9		21.0	5.0	* 19
Max Q Clear Time (g_c+I1), s		13.1	3.8	20.9		4.7	3.3	14.8
Green Ext Time (p_c), s		0.9	0.0	0.0		0.3	0.7	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	42.4
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	390	338	41	370	7	685	42	70	8	22	68
Future Volume (veh/h)	36	390	338	41	370	7	685	42	70	8	22	68
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	39	424	367	45	402	8	745	46	76	9	24	74
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	58	483	410	63	497	422	791	282	466	33	87	103
Arrive On Green	0.03	0.26	0.26	0.04	0.27	0.27	0.45	0.45	0.45	0.06	0.06	0.06
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	633	1045	501	1337	1583
Grp Volume(v), veh/h	39	424	367	45	402	8	745	0	122	33	0	74
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	0	1678	1838	0	1583
Q Serve(g_s), s	2.2	22.0	22.5	2.5	20.3	0.4	40.4	0.0	4.4	1.7	0.0	4.6
Cycle Q Clear(g_c), s	2.2	22.0	22.5	2.5	20.3	0.4	40.4	0.0	4.4	1.7	0.0	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.62	0.27		1.00
Lane Grp Cap(c), veh/h	58	483	410	63	497	422	791	0	749	119	0	103
V/C Ratio(X)	0.67	0.88	0.89	0.71	0.81	0.02	0.94	0.00	0.16	0.28	0.00	0.72
Avail Cap(c_a), veh/h	88	528	449	88	528	449	903	0	854	383	0	330
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.2	35.8	36.0	48.1	34.6	27.2	26.7	0.0	16.7	44.9	0.0	46.2
Incr Delay (d2), s/veh	12.3	14.7	19.0	14.9	8.7	0.0	16.4	0.0	0.1	1.2	0.0	9.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	13.3	11.9	1.5	11.7	0.2	23.3	0.0	2.1	0.9	0.0	2.3
LnGrp Delay(d),s/veh	60.5	50.5	55.0	63.1	43.3	27.3	43.1	0.0	16.8	46.1	0.0	55.3
LnGrp LOS	E	D	D	E	D	C	D		B	D		E
Approach Vol, veh/h		830			455			867			107	
Approach Delay, s/veh		53.0			45.0			39.4			52.5	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		49.7	8.7	31.2		11.2	7.9	32.0
Change Period (Y+Rc), s		* 4.7	5.1	* 5.1		4.7	4.6	5.1
Max Green Setting (Gmax), s		* 51	5.0	* 29		21.0	5.0	28.6
Max Q Clear Time (g_c+I1), s		42.4	4.5	24.5		6.6	4.2	22.3
Green Ext Time (p_c), s		2.5	0.1	1.6		0.3	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	46.1
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	554	50	60	234	204	193
Future Volume (veh/h)	554	50	60	234	204	193
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	602	0	65	254	222	0
Adj No. of Lanes	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	727	649	198	437	544	0
Arrive On Green	0.41	0.00	0.29	0.29	0.29	0.00
Sat Flow, veh/h	1774	1583	226	1498	1863	0
Grp Volume(v), veh/h	602	0	319	0	222	0
Grp Sat Flow(s),veh/h/ln	1774	1583	1724	0	1863	0
Q Serve(g_s), s	10.0	0.0	1.9	0.0	3.1	0.0
Cycle Q Clear(g_c), s	10.0	0.0	5.1	0.0	3.1	0.0
Prop In Lane	1.00	1.00	0.20			0.00
Lane Grp Cap(c), veh/h	727	649	635	0	544	0
V/C Ratio(X)	0.83	0.00	0.50	0.00	0.41	0.00
Avail Cap(c_a), veh/h	1156	1031	1099	0	1066	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	8.7	0.0	10.0	0.0	9.4	0.0
Incr Delay (d2), s/veh	2.9	0.0	0.6	0.0	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	2.6	0.0	1.7	0.0
LnGrp Delay(d),s/veh	11.5	0.0	10.6	0.0	9.8	0.0
LnGrp LOS	B		B		A	
Approach Vol, veh/h	602			319	222	
Approach Delay, s/veh	11.5			10.6	9.8	
Approach LOS	B			B	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		14.7		18.2		14.7		
Change Period (Y+Rc), s		5.1		* 4.7		5.1		
Max Green Setting (Gmax), s		18.8		* 21		18.8		
Max Q Clear Time (g_c+I1), s		7.1		12.0		5.1		
Green Ext Time (p_c), s		2.6		1.6		2.8		

Intersection Summary	
HCM 2010 Ctrl Delay	10.9
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	185	467	50	389	7	251	26	19	3	19	69
Future Volume (veh/h)	38	185	467	50	389	7	251	26	19	3	19	69
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	41	201	508	54	423	8	273	28	21	3	21	75
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	497	1006	855	69	548	466	310	173	130	15	104	102
Arrive On Green	0.28	0.54	0.54	0.04	0.29	0.29	0.17	0.17	0.17	0.06	0.06	0.06
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	990	742	231	1620	1583
Grp Volume(v), veh/h	41	201	508	54	423	8	273	0	49	24	0	75
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	0	1732	1851	0	1583
Q Serve(g_s), s	1.8	5.8	22.8	3.2	21.8	0.4	15.8	0.0	2.5	1.3	0.0	4.9
Cycle Q Clear(g_c), s	1.8	5.8	22.8	3.2	21.8	0.4	15.8	0.0	2.5	1.3	0.0	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.43	0.12		1.00
Lane Grp Cap(c), veh/h	497	1006	855	69	548	466	310	0	303	119	0	102
V/C Ratio(X)	0.08	0.20	0.59	0.78	0.77	0.02	0.88	0.00	0.16	0.20	0.00	0.74
Avail Cap(c_a), veh/h	497	1006	855	112	548	466	411	0	401	428	0	366
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.77	0.77	0.77	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.9	12.5	16.4	50.0	33.8	26.3	42.2	0.0	36.8	46.6	0.0	48.3
Incr Delay (d2), s/veh	0.1	0.3	2.3	16.9	10.1	0.1	15.6	0.0	0.2	0.8	0.0	9.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	3.1	10.4	1.9	12.7	0.2	9.1	0.0	1.2	0.7	0.0	2.4
LnGrp Delay(d),s/veh	27.9	12.8	18.7	66.8	43.9	26.3	57.9	0.0	37.0	47.4	0.0	58.1
LnGrp LOS	C	B	B	E	D	C	E		D	D		E
Approach Vol, veh/h		750			485			322			99	
Approach Delay, s/veh		17.6			46.2			54.7			55.5	
Approach LOS		B			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		23.1	8.7	61.8		11.4	34.5	36.0
Change Period (Y+Rc), s		* 4.7	4.6	5.1		4.7	5.1	* 5.1
Max Green Setting (Gmax), s		* 24	6.6	30.7		24.3	6.4	* 31
Max Q Clear Time (g_c+I1), s		17.8	5.2	24.8		6.9	3.8	23.8
Green Ext Time (p_c), s		0.6	0.0	1.8		0.3	0.9	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	35.5
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	371	325	41	343	7	469	42	70	8	22	68
Future Volume (veh/h)	36	371	325	41	343	7	469	42	70	8	22	68
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	39	403	353	45	373	8	510	46	76	9	24	74
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	68	491	418	75	513	436	584	208	344	35	93	111
Arrive On Green	0.04	0.26	0.26	0.04	0.28	0.28	0.33	0.33	0.33	0.07	0.07	0.07
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	633	1045	501	1337	1583
Grp Volume(v), veh/h	39	403	353	45	373	8	510	0	122	33	0	74
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	0	1678	1838	0	1583
Q Serve(g_s), s	1.4	13.5	14.1	1.7	12.1	0.2	18.0	0.0	3.5	1.1	0.0	3.0
Cycle Q Clear(g_c), s	1.4	13.5	14.1	1.7	12.1	0.2	18.0	0.0	3.5	1.1	0.0	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.62	0.27		1.00
Lane Grp Cap(c), veh/h	68	491	418	75	513	436	584	0	553	128	0	111
V/C Ratio(X)	0.57	0.82	0.84	0.60	0.73	0.02	0.87	0.00	0.22	0.26	0.00	0.67
Avail Cap(c_a), veh/h	133	563	478	133	563	478	813	0	769	842	0	726
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.4	23.0	23.2	31.3	21.9	17.6	21.0	0.0	16.1	29.3	0.0	30.2
Incr Delay (d2), s/veh	7.2	8.4	11.8	7.4	4.3	0.0	7.8	0.0	0.2	1.0	0.0	6.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	8.1	7.5	1.0	6.8	0.1	10.0	0.0	1.7	0.6	0.0	1.5
LnGrp Delay(d),s/veh	38.7	31.4	35.0	38.7	26.1	17.6	28.8	0.0	16.3	30.4	0.0	37.0
LnGrp LOS	D	C	D	D	C	B	C		B	C		D
Approach Vol, veh/h		795			426			632			107	
Approach Delay, s/veh		33.4			27.3			26.4			34.9	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		26.6	7.9	22.7		9.3	7.2	23.4
Change Period (Y+Rc), s		* 4.7	5.1	* 5.1		4.7	4.6	5.1
Max Green Setting (Gmax), s		* 31	5.0	* 20		30.5	5.0	20.1
Max Q Clear Time (g_c+I1), s		20.0	3.7	16.1		5.0	3.4	14.1
Green Ext Time (p_c), s		1.9	0.3	1.5		0.4	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	29.9
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	186	470	50	389	7	255	26	19	3	19	69
Future Volume (veh/h)	38	186	470	50	389	7	255	26	19	3	19	69
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	41	202	511	54	423	8	277	28	21	3	21	75
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	493	1002	851	69	548	466	314	175	131	15	104	102
Arrive On Green	0.28	0.54	0.54	0.04	0.29	0.29	0.18	0.18	0.18	0.06	0.06	0.06
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	990	742	231	1620	1583
Grp Volume(v), veh/h	41	202	511	54	423	8	277	0	49	24	0	75
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	0	1732	1851	0	1583
Q Serve(g_s), s	1.8	5.9	23.1	3.2	21.8	0.4	16.0	0.0	2.5	1.3	0.0	4.9
Cycle Q Clear(g_c), s	1.8	5.9	23.1	3.2	21.8	0.4	16.0	0.0	2.5	1.3	0.0	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.43	0.12		1.00
Lane Grp Cap(c), veh/h	493	1002	851	69	548	466	314	0	307	119	0	102
V/C Ratio(X)	0.08	0.20	0.60	0.78	0.77	0.02	0.88	0.00	0.16	0.20	0.00	0.74
Avail Cap(c_a), veh/h	493	1002	851	112	548	466	411	0	401	428	0	366
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.76	0.76	0.76	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.0	12.6	16.6	50.0	33.8	26.3	42.1	0.0	36.6	46.6	0.0	48.3
Incr Delay (d2), s/veh	0.1	0.3	2.4	16.9	10.1	0.1	16.1	0.0	0.2	0.8	0.0	9.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	3.1	10.6	1.9	12.7	0.2	9.3	0.0	1.2	0.7	0.0	2.4
LnGrp Delay(d),s/veh	28.1	12.9	19.0	66.8	43.9	26.3	58.2	0.0	36.8	47.4	0.0	58.1
LnGrp LOS	C	B	B	E	D	C	E		D	D		E
Approach Vol, veh/h		754			485			326			99	
Approach Delay, s/veh		17.8			46.2			55.0			55.5	
Approach LOS		B			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		23.3	8.7	61.6		11.4	34.3	36.0
Change Period (Y+Rc), s		* 4.7	4.6	5.1		4.7	5.1	* 5.1
Max Green Setting (Gmax), s		* 24	6.6	30.7		24.3	6.4	* 31
Max Q Clear Time (g_c+I1), s		18.0	5.2	25.1		6.9	3.8	23.8
Green Ext Time (p_c), s		0.6	0.0	1.7		0.3	0.9	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	35.6
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	373	326	41	346	7	480	42	70	8	22	68
Future Volume (veh/h)	36	373	326	41	346	7	480	42	70	8	22	68
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	39	405	354	45	376	8	522	46	76	9	24	74
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	68	490	416	75	511	434	594	212	350	35	93	110
Arrive On Green	0.04	0.26	0.26	0.04	0.27	0.27	0.33	0.33	0.33	0.07	0.07	0.07
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	633	1045	501	1337	1583
Grp Volume(v), veh/h	39	405	354	45	376	8	522	0	122	33	0	74
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	0	1678	1838	0	1583
Q Serve(g_s), s	1.5	13.8	14.3	1.7	12.4	0.2	18.7	0.0	3.5	1.1	0.0	3.1
Cycle Q Clear(g_c), s	1.5	13.8	14.3	1.7	12.4	0.2	18.7	0.0	3.5	1.1	0.0	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.62	0.27		1.00
Lane Grp Cap(c), veh/h	68	490	416	75	511	434	594	0	562	128	0	110
V/C Ratio(X)	0.57	0.83	0.85	0.60	0.74	0.02	0.88	0.00	0.22	0.26	0.00	0.67
Avail Cap(c_a), veh/h	131	555	471	131	555	471	802	0	758	830	0	715
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.9	23.4	23.6	31.8	22.3	17.9	21.2	0.0	16.1	29.7	0.0	30.6
Incr Delay (d2), s/veh	7.4	9.1	12.6	7.5	4.7	0.0	8.6	0.0	0.2	1.0	0.0	6.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	8.3	7.7	1.0	7.0	0.1	10.6	0.0	1.7	0.6	0.0	1.6
LnGrp Delay(d),s/veh	39.3	32.5	36.2	39.3	27.0	17.9	29.8	0.0	16.3	30.8	0.0	37.5
LnGrp LOS	D	C	D	D	C	B	C		B	C		D
Approach Vol, veh/h		798			429			644			107	
Approach Delay, s/veh		34.5			28.1			27.2			35.4	
Approach LOS		C			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		27.3	7.9	22.9		9.4	7.2	23.6
Change Period (Y+Rc), s		* 4.7	5.1	* 5.1		4.7	4.6	5.1
Max Green Setting (Gmax), s		* 31	5.0	* 20		30.5	5.0	20.1
Max Q Clear Time (g_c+I1), s		20.7	3.7	16.3		5.1	3.5	14.4
Green Ext Time (p_c), s		1.9	0.3	1.4		0.4	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	30.8
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	305	2395	0	0	2107	164	1393	0	753	0	0	0
Future Volume (veh/h)	305	2395	0	0	2107	164	1393	0	753	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	332	2603	0	0	2290	178	1514	0	0			
Adj No. of Lanes	1	3	0	0	4	0	3	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	344	3186	0	0	2448	190	1630	0	485			
Arrive On Green	0.39	1.00	0.00	0.00	0.40	0.40	0.31	0.00	0.00			
Sat Flow, veh/h	1774	5253	0	0	6372	474	5322	0	1583			
Grp Volume(v), veh/h	332	2603	0	0	1800	668	1514	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1695	0	0	1602	1779	1774	0	1583			
Q Serve(g_s), s	26.7	0.0	0.0	0.0	52.4	52.7	40.3	0.0	0.0			
Cycle Q Clear(g_c), s	26.7	0.0	0.0	0.0	52.4	52.7	40.3	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.27	1.00		1.00			
Lane Grp Cap(c), veh/h	344	3186	0	0	1925	713	1630	0	485			
V/C Ratio(X)	0.97	0.82	0.00	0.00	0.94	0.94	0.93	0.00	0.00			
Avail Cap(c_a), veh/h	344	3186	0	0	1925	713	1688	0	502			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	44.2	0.0	0.0	0.0	41.9	42.0	49.1	0.0	0.0			
Incr Delay (d2), s/veh	8.2	0.2	0.0	0.0	10.0	21.6	9.3	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	13.7	0.1	0.0	0.0	24.9	30.1	21.2	0.0	0.0			
LnGrp Delay(d),s/veh	52.4	0.2	0.0	0.0	52.0	63.6	58.4	0.0	0.0			
LnGrp LOS	D	A			D	F	F					
Approach Vol, veh/h		2935			2468			1514				
Approach Delay, s/veh		6.1			55.1			58.4				
Approach LOS		A			E			E				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		49.4		96.6			33.0	63.6
Change Period (Y+Rc), s		* 4.7		5.1			* 4.7	5.1
Max Green Setting (Gmax), s		* 46		89.9			* 28	56.9
Max Q Clear Time (g_c+I1), s		42.3		2.0			28.7	54.7
Green Ext Time (p_c), s		2.5		86.2			0.0	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	35.0
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1721	948	542	1313	0	0	0	0	163	0	401
Future Volume (veh/h)	0	1721	948	542	1313	0	0	0	0	163	0	401
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	1871	0	589	1427	0				177	0	436
Adj No. of Lanes	0	3	1	1	2	0				0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2204	686	523	2713	0				266	0	418
Arrive On Green	0.00	0.87	0.00	0.29	0.77	0.00				0.15	0.00	0.15
Sat Flow, veh/h	0	5253	1583	1774	3632	0				1774	0	2787
Grp Volume(v), veh/h	0	1871	0	589	1427	0				177	0	436
Grp Sat Flow(s),veh/h/ln	0	1695	1583	1774	1770	0				1774	0	1393
Q Serve(g_s), s	0.0	22.3	0.0	35.4	18.9	0.0				11.3	0.0	18.0
Cycle Q Clear(g_c), s	0.0	22.3	0.0	35.4	18.9	0.0				11.3	0.0	18.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2204	686	523	2713	0				266	0	418
V/C Ratio(X)	0.00	0.85	0.00	1.13	0.53	0.00				0.67	0.00	1.04
Avail Cap(c_a), veh/h	0	2204	686	523	2713	0				266	0	418
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.47	0.00	0.64	0.64	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.0	0.0	42.3	5.5	0.0				48.2	0.0	51.0
Incr Delay (d2), s/veh	0.0	2.1	0.0	72.0	0.5	0.0				6.1	0.0	55.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.8	0.0	27.8	9.3	0.0				6.0	0.0	10.1
LnGrp Delay(d),s/veh	0.0	8.1	0.0	114.3	5.9	0.0				54.3	0.0	106.7
LnGrp LOS		A		F	A					D		F
Approach Vol, veh/h		1871			2016						613	
Approach Delay, s/veh		8.1			37.6						91.6	
Approach LOS		A			D						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			40.0	57.4		22.6		97.4
Change Period (Y+Rc), s			4.6	5.4		4.6		5.4
Max Green Setting (Gmax), s			35.4	52.0		18.0		92.0
Max Q Clear Time (g_c+I1), s			37.4	24.3		20.0		20.9
Green Ext Time (p_c), s			0.0	25.5		0.0		58.5

Intersection Summary	
HCM 2010 Ctrl Delay	32.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	685	878	151	645	0	0	0	0	44	0	448
Future Volume (veh/h)	0	685	878	151	645	0	0	0	0	44	0	448
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	745	0	164	701	0				48	0	487
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1653	739	229	2290	0				454	0	405
Arrive On Green	0.00	0.78	0.00	0.26	1.00	0.00				0.26	0.00	0.26
Sat Flow, veh/h	0	3632	1583	1774	3632	0				1774	0	1583
Grp Volume(v), veh/h	0	745	0	164	701	0				48	0	487
Grp Sat Flow(s),veh/h/ln	0	1770	1583	1774	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	7.1	0.0	8.4	0.0	0.0				2.1	0.0	25.6
Cycle Q Clear(g_c), s	0.0	7.1	0.0	8.4	0.0	0.0				2.1	0.0	25.6
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1653	739	229	2290	0				454	0	405
V/C Ratio(X)	0.00	0.45	0.00	0.72	0.31	0.00				0.11	0.00	1.20
Avail Cap(c_a), veh/h	0	1653	739	238	2290	0				454	0	405
HCM Platoon Ratio	1.00	1.67	1.67	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.88	0.00	0.89	0.89	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.7	0.0	35.4	0.0	0.0				28.4	0.0	37.2
Incr Delay (d2), s/veh	0.0	0.8	0.0	8.6	0.3	0.0				0.1	0.0	112.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.4	0.0	4.6	0.1	0.0				1.0	0.0	23.8
LnGrp Delay(d),s/veh	0.0	7.4	0.0	44.0	0.3	0.0				28.5	0.0	149.3
LnGrp LOS		A		D	A					C		F
Approach Vol, veh/h		745			865						535	
Approach Delay, s/veh		7.4			8.6						138.5	
Approach LOS		A			A						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			18.0	51.8		30.2		69.8
Change Period (Y+Rc), s			5.1	* 5.1		4.6		5.1
Max Green Setting (Gmax), s			13.4	* 47		25.6		64.7
Max Q Clear Time (g_c+I1), s			10.4	9.1		27.6		2.0
Green Ext Time (p_c), s			1.5	6.1		0.0		6.4

Intersection Summary	
HCM 2010 Ctrl Delay	40.6
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	89 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	5	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	650	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	5790	V_D =	veh/h
		Ramp Volume, V_R	403		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5790	0.92	Level	10	0	0.952	1.00	6608
Ramp	403	0.92	Level	10	0	0.952	1.00	460
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2708 pc/h

V_3 or V_{av34} 1454 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5617	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	5157	Exhibit 13-8	9400	No
V_R	460	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2708	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 21.7 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.469 (Exhibit 13-12)

S_R= 54.2 mph (Exhibit 13-12)

S_0= 69.5 mph (Exhibit 13-12)

S = 61.2 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	90 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	360
Deceleration Lane Length L_D	
Freeway Volume, V_F	5790
Ramp Volume, V_R	1144
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5790	0.92	Level	10	0	0.952	1.00	6608
Ramp	1144	0.92	Level	10	0	0.952	1.00	1306
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.055 using Equation (Exhibit 13-6)

V_{12} = 263 pc/h

V_3 or V_{av34} 2280 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1929 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6130	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3235	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 27.9 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.395 (Exibit 13-11)

S_R= 55.9 mph (Exhibit 13-11)

S_0= 61.6 mph (Exhibit 13-11)

S = 58.5 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	91 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	360
Deceleration Lane Length L_D	
Freeway Volume, V_F	3334
Ramp Volume, V_R	410
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3334	0.92	Level	10	0	0.952	1.00	3805
Ramp	410	0.92	Level	10	0	0.952	1.00	468
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.159 using Equation (Exhibit 13-6)

V_{12} = 473 pc/h

V_3 or V_{av34} 1247 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1187 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3436	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1655	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 15.9 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.316 (Exibit 13-11)

S_R= 57.7 mph (Exhibit 13-11)

S_0= 63.6 mph (Exhibit 13-11)

S = 60.6 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	92 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	5	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	625	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	3334	V_D =	veh/h
		Ramp Volume, V_R	822		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3334	0.92	Level	10	0	0.952	1.00	3805
Ramp	822	0.92	Level	10	0	0.952	1.00	938
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2188 pc/h

V_3 or V_{av34} 808 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3805	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	2867	Exhibit 13-8	9400	No
V_R	938	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2188	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 17.4 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.512 (Exhibit 13-12)

S_R= 53.2 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 59.6 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	93 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A:	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 600	V_D = veh/h
	Freeway Volume, V_F: 7098	
	Ramp Volume, V_R: 369	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	7098	0.92	Level	10	0	0.952	1.00	8101
Ramp	369	0.92	Level	10	0	0.952	1.00	421
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 3063 pc/h

V_3 or V_{av34} 1709 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6481	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	6060	Exhibit 13-8	9400	No
V_R	421	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3063	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 25.2 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.466 (Exhibit 13-12)

S_R= 54.3 mph (Exhibit 13-12)

S_0= 68.5 mph (Exhibit 13-12)

S = 61.0 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	94 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	360
Deceleration Lane Length L_D	
Freeway Volume, V_F	7098
Ramp Volume, V_R	840
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	7098	0.92	Level	10	0	0.952	1.00	8101
Ramp	840	0.92	Level	10	0	0.952	1.00	959
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.098 using Equation (Exhibit 13-6)

V_{12} = 567 pc/h

V_3 or V_{av34} 2613 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 2317 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6752	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3276	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 28.3 (pc/mi/ln)

LOS = D (Exhibit 13-2)

Speed Determination

M_S = 0.399 (Exibit 13-11)

S_R= 55.8 mph (Exhibit 13-11)

S_0= 60.5 mph (Exhibit 13-11)

S = 58.2 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	360
Deceleration Lane Length L_D	
Freeway Volume, V_F	4133
Ramp Volume, V_R	383
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4133	0.92	Level	10	0	0.952	1.00	4717
Ramp	383	0.92	Level	10	0	0.952	1.00	437
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.163 using Equation (Exhibit 13-6)

V_{12} = 600 pc/h

V_3 or V_{av34} 1540 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1472 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4117	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1909	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 17.9 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.322 (Exibit 13-11)

S_R= 57.6 mph (Exhibit 13-11)

S_0= 62.8 mph (Exhibit 13-11)

S = 60.3 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A:	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 750	V_D = veh/h
	Freeway Volume, V_F: 4133	
	Ramp Volume, V_R: 458	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4133	0.92	Level	10	0	0.952	1.00	4717
Ramp	458	0.92	Level	10	0	0.952	1.00	523
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2146 pc/h

V_3 or V_{av34} 1050 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4246	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	3723	Exhibit 13-8	9400	No
V_R	523	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2146	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 16.0 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.475 (Exhibit 13-12)

S_R= 54.1 mph (Exhibit 13-12)

S_0= 71.1 mph (Exhibit 13-12)

S = 61.3 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	89 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	5	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	650	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	3942	V_D =	veh/h
		Ramp Volume, V_R	564		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3942	0.92	Level	10	0	0.952	1.00	4499
Ramp	564	0.92	Level	10	0	0.952	1.00	644
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2129 pc/h

V_3 or V_{av34} 960 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4050	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	3406	Exhibit 13-8	9400	No
V_R	644	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2129	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 16.7 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.486 (Exhibit 13-12)

S_R= 53.8 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 60.9 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	90 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	360
Deceleration Lane Length L_D	
Freeway Volume, V_F	3942
Ramp Volume, V_R	1450
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3942	0.92	Level	10	0	0.952	1.00	4499
Ramp	1450	0.92	Level	10	0	0.952	1.00	1655
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.011 using Equation (Exhibit 13-6)

V_{12} = 38 pc/h

V_3 or V_{av34} 1736 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1404 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5165	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3059	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 26.3 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.379 (Exibit 13-11)

S_R= 56.3 mph (Exhibit 13-11)

S_0= 63.0 mph (Exhibit 13-11)

S = 58.8 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	91 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	360
Deceleration Lane Length L_D	
Freeway Volume, V_F	5586
Ramp Volume, V_R	509
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5586	0.92	Level	10	0	0.952	1.00	6375
Ramp	509	0.92	Level	10	0	0.952	1.00	581
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.145 using Equation (Exhibit 13-6)

V_{12} = 704 pc/h

V_3 or V_{av34} 2071 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1938 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5427	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2519	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 22.6 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.344 (Exibit 13-11)

S_R= 57.1 mph (Exhibit 13-11)

S_0= 61.6 mph (Exhibit 13-11)

S = 59.4 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	92 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 625	V_D = veh/h
	Freeway Volume, V_F: 5586	
	Ramp Volume, V_R: 1184	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5586	0.92	Level	10	0	0.952	1.00	6375
Ramp	1184	0.92	Level	10	0	0.952	1.00	1351
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 3125 pc/h

V_3 or V_{av34} 1147 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5419	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4068	Exhibit 13-8	9400	No
V_R	1351	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3125	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 25.5 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.550 (Exhibit 13-12)

S_R= 52.4 mph (Exhibit 13-12)

S_0= 70.7 mph (Exhibit 13-12)

S = 58.8 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	93 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A:	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 600	V_D = veh/h
	Freeway Volume, V_F: 4849	
	Ramp Volume, V_R: 492	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4849	0.92	Level	10	0	0.952	1.00	5534
Ramp	492	0.92	Level	10	0	0.952	1.00	562
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2368 pc/h

V_3 or V_{av34} 1168 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4704	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4142	Exhibit 13-8	9400	No
V_R	562	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2368	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 19.2 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.479 (Exhibit 13-12)

S_R= 54.0 mph (Exhibit 13-12)

S_0= 70.6 mph (Exhibit 13-12)

S = 61.2 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	94 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	360
Deceleration Lane Length L_D	
Freeway Volume, V_F	4849
Ramp Volume, V_R	1104
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4849	0.92	Level	10	0	0.952	1.00	5534
Ramp	1104	0.92	Level	10	0	0.952	1.00	1260
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.060 using Equation (Exhibit 13-6)

V_{12} = 254 pc/h

V_3 or V_{av34} 1976 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1682 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5466	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2942	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 25.6 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.370 (Exibit 13-11)

S_R= 56.5 mph (Exhibit 13-11)

S_0= 62.3 mph (Exhibit 13-11)

S = 59.0 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	360
Deceleration Lane Length L_D	
Freeway Volume, V_F	6992
Ramp Volume, V_R	571
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	6992	0.92	Level	10	0	0.952	1.00	7980
Ramp	571	0.92	Level	10	0	0.952	1.00	652
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.136 using Equation (Exhibit 13-6)

V_{12} = 778 pc/h

V_3 or V_{av34} 2464 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 2282 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6358	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2934	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 25.8 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.369 (Exibit 13-11)

S_R= 56.5 mph (Exhibit 13-11)

S_0= 60.6 mph (Exhibit 13-11)

S = 58.7 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 750	V_D = veh/h
	Freeway Volume, V_F: 6992	
	Ramp Volume, V_R: 569	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	6992	0.92	Level	10	0	0.952	1.00	7980
Ramp	569	0.92	Level	10	0	0.952	1.00	649
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 3149 pc/h

V_3 or V_{av34} 1617 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6384	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	5735	Exhibit 13-8	9400	No
V_R	649	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3149	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 24.6 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.486 (Exhibit 13-12)

S_R= 53.8 mph (Exhibit 13-12)

S_0= 68.9 mph (Exhibit 13-12)

S = 60.5 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	89 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative + No Build Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 650	V_D = veh/h
	Freeway Volume, V_F: 5770	
	Ramp Volume, V_R: 404	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5770	0.92	Level	10	0	0.952	1.00	6585
Ramp	404	0.92	Level	10	0	0.952	1.00	461
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2701 pc/h

V_3 or V_{av34} 1448 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5598	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	5137	Exhibit 13-8	9400	No
V_R	461	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2701	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 21.6 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.469 (Exhibit 13-12)

S_R= 54.2 mph (Exhibit 13-12)

S_0= 69.6 mph (Exhibit 13-12)

S = 61.2 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	90 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative + No Build Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 5770	
	Ramp Volume, V_R: 1052	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5770	0.92	Level	10	0	0.952	1.00	6585
Ramp	1052	0.92	Level	10	0	0.952	1.00	1201
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.068 using Equation (Exhibit 13-6)

V_{12} = 325 pc/h

V_3 or V_{av34} 2241 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1923 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6009	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3124	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 27.0 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.384 (Exibit 13-11)

S_R= 56.2 mph (Exhibit 13-11)

S_0= 61.6 mph (Exhibit 13-11)

S = 58.6 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	91 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative + No Build Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 3324	
	Ramp Volume, V_R: 368	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3324	0.92	Level	10	0	0.952	1.00	3794
Ramp	368	0.92	Level	10	0	0.952	1.00	420
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.165 using Equation (Exhibit 13-6)

V_{12} = 489 pc/h

V_3 or V_{av34} 1235 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1184 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3380	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1604	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 15.5 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.315 (Exibit 13-11)

S_R= 57.8 mph (Exhibit 13-11)

S_0= 63.6 mph (Exhibit 13-11)

S = 60.7 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	92 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative + No Build Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A:	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 625	V_D = veh/h
	Freeway Volume, V_F: 3324	
	Ramp Volume, V_R: 806	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3324	0.92	Level	10	0	0.952	1.00	3794
Ramp	806	0.92	Level	10	0	0.952	1.00	920
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2173 pc/h

V_3 or V_{av34} 810 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3794	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	2874	Exhibit 13-8	9400	No
V_R	920	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2173	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 17.3 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.511 (Exhibit 13-12)

S_R= 53.3 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 59.7 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	93 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative + No Build Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 600	V_D = veh/h
	Freeway Volume, V_F: 7001	
	Ramp Volume, V_R: 377	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	7001	0.92	Level	10	0	0.952	1.00	7990
Ramp	377	0.92	Level	10	0	0.952	1.00	430
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 3029 pc/h

V_3 or V_{av34} 1681 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6392	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	5962	Exhibit 13-8	9400	No
V_R	430	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3029	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 24.9 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.467 (Exhibit 13-12)

S_R= 54.3 mph (Exhibit 13-12)

S_0= 68.6 mph (Exhibit 13-12)

S = 61.0 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	94 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative + No Build Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D	V_D = veh/h
	Freeway Volume, V_F: 7001	
	Ramp Volume, V_R: 806	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	7001	0.92	Level	10	0	0.952	1.00	7990
Ramp	806	0.92	Level	10	0	0.952	1.00	920
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.103 using Equation (Exhibit 13-6)

V_{12} = 587 pc/h

V_3 or V_{av34} 2563 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 2285 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6633	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3205	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 27.8 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.392 (Exibit 13-11)

S_R= 56.0 mph (Exhibit 13-11)

S_0= 60.6 mph (Exhibit 13-11)

S = 58.3 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative + No Build Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	360
Deceleration Lane Length L_D	
Freeway Volume, V_F	4117
Ramp Volume, V_R	383
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4117	0.92	Level	10	0	0.952	1.00	4699
Ramp	383	0.92	Level	10	0	0.952	1.00	437
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.163 using Equation (Exhibit 13-6)

V_{12} = 598 pc/h

V_3 or V_{av34} 1534 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1466 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4103	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1903	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 17.9 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.322 (Exibit 13-11)

S_R= 57.6 mph (Exhibit 13-11)

S_0= 62.8 mph (Exhibit 13-11)

S = 60.3 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative + No Build Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 750	V_D = veh/h
	Freeway Volume, V_F: 4117	
	Ramp Volume, V_R: 447	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4117	0.92	Level	10	0	0.952	1.00	4699
Ramp	447	0.92	Level	10	0	0.952	1.00	510
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2132 pc/h

V_3 or V_{av34} 1049 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4230	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	3720	Exhibit 13-8	9400	No
V_R	510	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2132	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 15.8 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.474 (Exhibit 13-12)

S_R= 54.1 mph (Exhibit 13-12)

S_0= 71.1 mph (Exhibit 13-12)

S = 61.4 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	89 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative + No Build Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 650	V_D = veh/h
	Freeway Volume, V_F: 3928	
	Ramp Volume, V_R: 539	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3928	0.92	Level	10	0	0.952	1.00	4483
Ramp	539	0.92	Level	10	0	0.952	1.00	615
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2106 pc/h

V_3 or V_{av34} 964 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4035	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	3420	Exhibit 13-8	9400	No
V_R	615	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2106	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 16.5 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.483 (Exhibit 13-12)

S_R= 53.9 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 61.0 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	90 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative + No Build Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 3928	
	Ramp Volume, V_R: 1403	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3928	0.92	Level	10	0	0.952	1.00	4483
Ramp	1403	0.92	Level	10	0	0.952	1.00	1601
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.018 using Equation (Exhibit 13-6)

V_{12} = 62 pc/h

V_3 or V_{av34} 1717 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1398 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5098	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2999	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 25.9 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.374 (Exibit 13-11)

S_R= 56.4 mph (Exhibit 13-11)

S_0= 63.0 mph (Exhibit 13-11)

S = 58.9 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	91 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative + No Build Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	360
Deceleration Lane Length L_D	
Freeway Volume, V_F	5569
Ramp Volume, V_R	491
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5569	0.92	Level	10	0	0.952	1.00	6356
Ramp	491	0.92	Level	10	0	0.952	1.00	560
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.148 using Equation (Exhibit 13-6)

V_{12} = 714 pc/h

V_3 or V_{av34} 2058 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1932 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5391	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2492	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 22.4 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.343 (Exibit 13-11)

S_R= 57.1 mph (Exhibit 13-11)

S_0= 61.6 mph (Exhibit 13-11)

S = 59.4 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	92 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative + No Build Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	5	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	625	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	5569	V_D =	veh/h
		Ramp Volume, V_R	1075		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5569	0.92	Level	10	0	0.952	1.00	6356
Ramp	1075	0.92	Level	10	0	0.952	1.00	1227
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 3048 pc/h

V_3 or V_{av34} 1177 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5403	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4176	Exhibit 13-8	9400	No
V_R	1227	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3048	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 24.8 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.538 (Exhibit 13-12)

S_R= 52.6 mph (Exhibit 13-12)

S_0= 70.6 mph (Exhibit 13-12)

S = 59.2 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	93 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative + No Build Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 600	V_D = veh/h
	Freeway Volume, V_F: 4767	
	Ramp Volume, V_R: 502	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4767	0.92	Level	10	0	0.952	1.00	5441
Ramp	502	0.92	Level	10	0	0.952	1.00	573
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2458 pc/h

V_3 or V_{av34} 1219 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4897	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4324	Exhibit 13-8	9400	No
V_R	573	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2458	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 20.0 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.480 (Exhibit 13-12)

S_R= 54.0 mph (Exhibit 13-12)

S_0= 70.5 mph (Exhibit 13-12)

S = 61.1 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	94 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative + No Build Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D	V_D = veh/h
	Freeway Volume, V_F: 4767	
	Ramp Volume, V_R: 1074	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4767	0.92	Level	10	0	0.952	1.00	5441
Ramp	1074	0.92	Level	10	0	0.952	1.00	1226
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.065 using Equation (Exhibit 13-6)

V_{12} = 274 pc/h

V_3 or V_{av34} 1985 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1697 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5470	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2923	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 25.5 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.368 (Exibit 13-11)

S_R= 56.5 mph (Exhibit 13-11)

S_0= 62.2 mph (Exhibit 13-11)

S = 59.0 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative + No Build Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	360
Deceleration Lane Length L_D	
Freeway Volume, V_F	6897
Ramp Volume, V_R	570
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	6897	0.92	Level	10	0	0.952	1.00	7872
Ramp	570	0.92	Level	10	0	0.952	1.00	651
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.136 using Equation (Exhibit 13-6)

V_{12} = 768 pc/h

V_3 or V_{av34} 2430 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 2251 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6280	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2902	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 25.6 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.367 (Exibit 13-11)

S_R= 56.6 mph (Exhibit 13-11)

S_0= 60.7 mph (Exhibit 13-11)

S = 58.7 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative + No Build Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	750
Freeway Volume, V_F	6897
Ramp Volume, V_R	531
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	6897	0.92	Level	10	0	0.952	1.00	7872
Ramp	531	0.92	Level	10	0	0.952	1.00	606
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 3088 pc/h

V_3 or V_{av34} 1605 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6298	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	5692	Exhibit 13-8	9400	No
V_R	606	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3088	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 24.1 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.483 (Exhibit 13-12)

S_R= 53.9 mph (Exhibit 13-12)

S_0= 68.9 mph (Exhibit 13-12)

S = 60.6 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	89 Eight Mile Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	5	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	650	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	5799	V_D =	veh/h
		Ramp Volume, V_R	395		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5799	0.92	Level	10	0	0.952	1.00	6618
Ramp	395	0.92	Level	10	0	0.952	1.00	451
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2707 pc/h

V_3 or V_{av34} 1459 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5626	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	5175	Exhibit 13-8	9400	No
V_R	451	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2707	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 21.7 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.469 (Exhibit 13-12)

S_R= 54.2 mph (Exhibit 13-12)

S_0= 69.5 mph (Exhibit 13-12)

S = 61.2 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	90 Eight Mile On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 5799	
	Ramp Volume, V_R: 1099	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5799	0.92	Level	10	0	0.952	1.00	6618
Ramp	1099	0.92	Level	10	0	0.952	1.00	1254
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.061 using Equation (Exhibit 13-6)

V_{12} = 295 pc/h

V_3 or V_{av34} 2268 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1932 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6086	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3186	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 27.5 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.390 (Exibit 13-11)

S_R= 56.0 mph (Exhibit 13-11)

S_0= 61.6 mph (Exhibit 13-11)

S = 58.5 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	91 Eight Mile On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 3339	
	Ramp Volume, V_R: 367	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3339	0.92	Level	10	0	0.952	1.00	3811
Ramp	367	0.92	Level	10	0	0.952	1.00	419
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.165 using Equation (Exhibit 13-6)

V_{12} = 492 pc/h

V_3 or V_{av34} 1240 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1189 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3392	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1608	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 15.6 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.315 (Exibit 13-11)

S_R= 57.7 mph (Exhibit 13-11)

S_0= 63.6 mph (Exhibit 13-11)

S = 60.7 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	92 Eight Mile Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	5	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	625	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	3339	V_D =	veh/h
		Ramp Volume, V_R	796		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3339	0.92	Level	10	0	0.952	1.00	3811
Ramp	796	0.92	Level	10	0	0.952	1.00	908
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2174 pc/h

V_3 or V_{av34} 818 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3811	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	2903	Exhibit 13-8	9400	No
V_R	908	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2174	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 17.3 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.510 (Exhibit 13-12)

S_R= 53.3 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 59.8 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	93 Morada Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	5	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	600	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	7064	V_D =	veh/h
		Ramp Volume, V_R	379		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	7064	0.92	Level	10	0	0.952	1.00	8062
Ramp	379	0.92	Level	10	0	0.952	1.00	433
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 3056 pc/h

V_3 or V_{av34} 1697 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6450	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	6017	Exhibit 13-8	9400	No
V_R	433	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3056	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 25.1 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.467 (Exhibit 13-12)

S_R= 54.3 mph (Exhibit 13-12)

S_0= 68.6 mph (Exhibit 13-12)

S = 61.0 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	94 Morada On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 7064	
	Ramp Volume, V_R: 838	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	7064	0.92	Level	10	0	0.952	1.00	8062
Ramp	838	0.92	Level	10	0	0.952	1.00	956
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.098 using Equation (Exhibit 13-6)

V_{12} = 567 pc/h

V_3 or V_{av34} 2599 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 2306 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6721	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3262	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 28.2 (pc/mi/ln)

LOS = D (Exhibit 13-2)

Speed Determination

M_S = 0.398 (Exibit 13-11)

S_R= 55.9 mph (Exhibit 13-11)

S_0= 60.6 mph (Exhibit 13-11)

S = 58.2 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 4131	
	Ramp Volume, V_R: 385	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4131	0.92	Level	10	0	0.952	1.00	4715
Ramp	385	0.92	Level	10	0	0.952	1.00	439
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.163 using Equation (Exhibit 13-6)

V_{12} = 599 pc/h

V_3 or V_{av34} 1539 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4117	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1038	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 11.1 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.307 (Exibit 13-11)

S_R= 57.9 mph (Exhibit 13-11)

S_0= 61.3 mph (Exhibit 13-11)

S = 60.4 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 750	V_D = veh/h
	Freeway Volume, V_F: 4131	
	Ramp Volume, V_R: 468	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4131	0.92	Level	10	0	0.952	1.00	4715
Ramp	468	0.92	Level	10	0	0.952	1.00	534
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2152 pc/h

V_3 or V_{av34} 1046 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4244	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	3710	Exhibit 13-8	9400	No
V_R	534	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2152	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 16.0 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.476 (Exhibit 13-12)

S_R= 54.1 mph (Exhibit 13-12)

S_0= 71.1 mph (Exhibit 13-12)

S = 61.3 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	89 Eight Mile Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	5	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	650	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	3948	V_D =	veh/h
		Ramp Volume, V_R	535		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3948	0.92	Level	10	0	0.952	1.00	4506
Ramp	535	0.92	Level	10	0	0.952	1.00	611
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2113 pc/h

V_3 or V_{av34} 971 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4056	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	3445	Exhibit 13-8	9400	No
V_R	611	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2113	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 16.6 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.483 (Exhibit 13-12)

S_R= 53.9 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 61.0 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	90 Eight Mile On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 3948	
	Ramp Volume, V_R: 1447	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3948	0.92	Level	10	0	0.952	1.00	4506
Ramp	1447	0.92	Level	10	0	0.952	1.00	1651
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.011 using Equation (Exhibit 13-6)

V_{12} = 40 pc/h

V_3 or V_{av34} 1737 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1406 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5166	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3057	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 26.3 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.379 (Exibit 13-11)

S_R= 56.3 mph (Exhibit 13-11)

S_0= 63.0 mph (Exhibit 13-11)

S = 58.9 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	91 Eight Mile On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 5593	
	Ramp Volume, V_R: 469	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5593	0.92	Level	10	0	0.952	1.00	6383
Ramp	469	0.92	Level	10	0	0.952	1.00	535
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.151 using Equation (Exhibit 13-6)

V_{12} = 732 pc/h

V_3 or V_{av34} 2060 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1940 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5387	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2475	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 22.3 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.342 (Exibit 13-11)

S_R= 57.1 mph (Exhibit 13-11)

S_0= 61.6 mph (Exhibit 13-11)

S = 59.4 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	92 Eight Mile Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	5	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	625	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	5593	V_D =	veh/h
		Ramp Volume, V_R	1101		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5593	0.92	Level	10	0	0.952	1.00	6383
Ramp	1101	0.92	Level	10	0	0.952	1.00	1257
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 3075 pc/h

V_3 or V_{av34} 1175 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5426	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4169	Exhibit 13-8	9400	No
V_R	1257	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3075	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 25.1 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.541 (Exhibit 13-12)

S_R= 52.6 mph (Exhibit 13-12)

S_0= 70.6 mph (Exhibit 13-12)

S = 59.1 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	93 Morada Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	5	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	600	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	4842	V_D =	veh/h
		Ramp Volume, V_R	505		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4842	0.92	Level	10	0	0.952	1.00	5526
Ramp	505	0.92	Level	10	0	0.952	1.00	576
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2373 pc/h

V_3 or V_{av34} 1162 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4698	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4122	Exhibit 13-8	9400	No
V_R	576	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2373	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 19.3 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.480 (Exhibit 13-12)

S_R= 54.0 mph (Exhibit 13-12)

S_0= 70.7 mph (Exhibit 13-12)

S = 61.1 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	94 Morada On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 4842	
	Ramp Volume, V_R: 1090	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4842	0.92	Level	10	0	0.952	1.00	5526
Ramp	1090	0.92	Level	10	0	0.952	1.00	1244
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.062 using Equation (Exhibit 13-6)

V_{12} = 262 pc/h

V_3 or V_{av34} 1969 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1680 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5444	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2924	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 25.5 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.368 (Exibit 13-11)

S_R= 56.5 mph (Exhibit 13-11)

S_0= 62.3 mph (Exhibit 13-11)

S = 59.0 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 6947	
	Ramp Volume, V_R: 573	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	6947	0.92	Level	10	0	0.952	1.00	7929
Ramp	573	0.92	Level	10	0	0.952	1.00	654
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.136 using Equation (Exhibit 13-6)

V_{12} = 771 pc/h

V_3 or V_{av34} 2449 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 2268 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6324	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2922	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 25.7 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.368 (Exibit 13-11)

S_R= 56.5 mph (Exhibit 13-11)

S_0= 60.7 mph (Exhibit 13-11)

S = 58.7 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	5	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	750	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	6947	V_D =	veh/h
		Ramp Volume, V_R	560		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	6947	0.92	Level	10	0	0.952	1.00	7929
Ramp	560	0.92	Level	10	0	0.952	1.00	639
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 3126 pc/h

V_3 or V_{av34} 1609 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6344	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	5705	Exhibit 13-8	9400	No
V_R	639	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3126	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 24.4 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.486 (Exhibit 13-12)

S_R= 53.8 mph (Exhibit 13-12)

S_0= 68.9 mph (Exhibit 13-12)

S = 60.6 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	89 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumul + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	5	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	650	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	5799	V_D =	veh/h
		Ramp Volume, V_R	391		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5799	0.92	Level	10	0	0.952	1.00	6618
Ramp	391	0.92	Level	10	0	0.952	1.00	446
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2704 pc/h

V_3 or V_{av34} 1461 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5626	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	5180	Exhibit 13-8	9400	No
V_R	446	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2704	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 21.7 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.468 (Exhibit 13-12)

S_R= 54.2 mph (Exhibit 13-12)

S_0= 69.5 mph (Exhibit 13-12)

S = 61.2 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	90 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumul + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 5799	
	Ramp Volume, V_R: 1076	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5799	0.92	Level	10	0	0.952	1.00	6618
Ramp	1076	0.92	Level	10	0	0.952	1.00	1228
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.064 using Equation (Exhibit 13-6)

V_{12} = 311 pc/h

V_3 or V_{av34} 2260 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1932 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6060	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3160	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 27.3 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.388 (Exibit 13-11)

S_R= 56.1 mph (Exhibit 13-11)

S_0= 61.6 mph (Exhibit 13-11)

S = 58.6 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	91 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumul + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 3339	
	Ramp Volume, V_R: 359	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3339	0.92	Level	10	0	0.952	1.00	3811
Ramp	359	0.92	Level	10	0	0.952	1.00	410
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.167 using Equation (Exhibit 13-6)

V_{12} = 495 pc/h

V_3 or V_{av34} 1239 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1189 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3383	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1599	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 15.5 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.315 (Exibit 13-11)

S_R= 57.8 mph (Exhibit 13-11)

S_0= 63.6 mph (Exhibit 13-11)

S = 60.7 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	92 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumul + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	5	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	625	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	3339	V_D =	veh/h
		Ramp Volume, V_R	784		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3339	0.92	Level	10	0	0.952	1.00	3811
Ramp	784	0.92	Level	10	0	0.952	1.00	895
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2166 pc/h

V_3 or V_{av34} 822 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3811	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	2916	Exhibit 13-8	9400	No
V_R	895	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2166	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 17.3 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.509 (Exhibit 13-12)

S_R= 53.3 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 59.8 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	93 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumul + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 600	V_D = veh/h
	Freeway Volume, V_F: 7041	
	Ramp Volume, V_R: 379	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	7041	0.92	Level	10	0	0.952	1.00	8036
Ramp	379	0.92	Level	10	0	0.952	1.00	433
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 3047 pc/h

V_3 or V_{av34} 1691 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6429	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	5996	Exhibit 13-8	9400	No
V_R	433	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3047	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 25.1 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.467 (Exhibit 13-12)

S_R= 54.3 mph (Exhibit 13-12)

S_0= 68.6 mph (Exhibit 13-12)

S = 61.0 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	94 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumul + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D	V_D = veh/h
	Freeway Volume, V_F: 7041	
	Ramp Volume, V_R: 837	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	7041	0.92	Level	10	0	0.952	1.00	8036
Ramp	837	0.92	Level	10	0	0.952	1.00	955
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.098 using Equation (Exhibit 13-6)

V_{12} = 566 pc/h

V_3 or V_{av34} 2590 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 2298 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6701	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3253	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 28.2 (pc/mi/ln)

LOS = D (Exhibit 13-2)

Speed Determination

M_S = 0.397 (Exibit 13-11)

S_R= 55.9 mph (Exhibit 13-11)

S_0= 60.6 mph (Exhibit 13-11)

S = 58.2 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumul + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	360
Deceleration Lane Length L_D	
Freeway Volume, V_F	4119
Ramp Volume, V_R	385
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4119	0.92	Level	10	0	0.952	1.00	4701
Ramp	385	0.92	Level	10	0	0.952	1.00	439
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.163 using Equation (Exhibit 13-6)

V_{12} = 597 pc/h

V_3 or V_{av34} 1535 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1466 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4106	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1905	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 17.9 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.322 (Exibit 13-11)

S_R= 57.6 mph (Exhibit 13-11)

S_0= 62.8 mph (Exhibit 13-11)

S = 60.3 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumul + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 750	V_D = veh/h
	Freeway Volume, V_F: 4119	
	Ramp Volume, V_R: 467	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4119	0.92	Level	10	0	0.952	1.00	4701
Ramp	467	0.92	Level	10	0	0.952	1.00	533
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2145 pc/h

V_3 or V_{av34} 1043 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4231	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	3698	Exhibit 13-8	9400	No
V_R	533	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2145	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 15.9 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.476 (Exhibit 13-12)

S_R= 54.1 mph (Exhibit 13-12)

S_0= 71.1 mph (Exhibit 13-12)

S = 61.3 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	89 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumul + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	5	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	650	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	3948	V_D =	veh/h
		Ramp Volume, V_R	527		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3948	0.92	Level	10	0	0.952	1.00	4506
Ramp	527	0.92	Level	10	0	0.952	1.00	601
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2107 pc/h

V_3 or V_{av34} 974 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4056	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	3455	Exhibit 13-8	9400	No
V_R	601	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2107	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 16.5 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.482 (Exhibit 13-12)

S_R= 53.9 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 61.1 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	90 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumul + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	360
Deceleration Lane Length L_D	
Freeway Volume, V_F	3948
Ramp Volume, V_R	1396
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3948	0.92	Level	10	0	0.952	1.00	4506
Ramp	1396	0.92	Level	10	0	0.952	1.00	1593
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.019 using Equation (Exhibit 13-6)

V_{12} = 66 pc/h

V_3 or V_{av34} 1724 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1406 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5108	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2999	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 25.9 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.374 (Exibit 13-11)

S_R= 56.4 mph (Exhibit 13-11)

S_0= 63.0 mph (Exhibit 13-11)

S = 58.9 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	91 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumul + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	360
Deceleration Lane Length L_D	
Freeway Volume, V_F	5593
Ramp Volume, V_R	456
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5593	0.92	Level	10	0	0.952	1.00	6383
Ramp	456	0.92	Level	10	0	0.952	1.00	520
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.153 using Equation (Exhibit 13-6)

V_{12} = 741 pc/h

V_3 or V_{av34} 2055 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1940 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5372	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2460	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 22.2 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.341 (Exibit 13-11)

S_R= 57.1 mph (Exhibit 13-11)

S_0= 61.6 mph (Exhibit 13-11)

S = 59.5 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	92 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumul + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 625	V_D = veh/h
	Freeway Volume, V_F: 5593	
	Ramp Volume, V_R: 1068	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5593	0.92	Level	10	0	0.952	1.00	6383
Ramp	1068	0.92	Level	10	0	0.952	1.00	1219
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 3053 pc/h

V_3 or V_{av34} 1186 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5426	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4207	Exhibit 13-8	9400	No
V_R	1219	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3053	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 24.9 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.538 (Exhibit 13-12)

S_R= 52.6 mph (Exhibit 13-12)

S_0= 70.6 mph (Exhibit 13-12)

S = 59.2 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	93 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumul + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	600
Freeway Volume, V_F	4791
Ramp Volume, V_R	505
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4791	0.92	Level	10	0	0.952	1.00	5468
Ramp	505	0.92	Level	10	0	0.952	1.00	576
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2471 pc/h

V_3 or V_{av34} 1225 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4922	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4346	Exhibit 13-8	9400	No
V_R	576	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2471	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 20.1 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.480 (Exhibit 13-12)

S_R= 54.0 mph (Exhibit 13-12)

S_0= 70.4 mph (Exhibit 13-12)

S = 61.1 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	94 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumul + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 4791	
	Ramp Volume, V_R: 1094	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4791	0.92	Level	10	0	0.952	1.00	5468
Ramp	1094	0.92	Level	10	0	0.952	1.00	1249
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.062 using Equation (Exhibit 13-6)

V_{12} = 263 pc/h

V_3 or V_{av34} 2001 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1706 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5515	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2955	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 25.7 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.371 (Exibit 13-11)

S_R= 56.5 mph (Exhibit 13-11)

S_0= 62.2 mph (Exhibit 13-11)

S = 59.0 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumul + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	360
Deceleration Lane Length L_D	
Freeway Volume, V_F	6914
Ramp Volume, V_R	573
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	6914	0.92	Level	10	0	0.952	1.00	7891
Ramp	573	0.92	Level	10	0	0.952	1.00	654
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.136 using Equation (Exhibit 13-6)

V_{12} = 768 pc/h

V_3 or V_{av34} 2437 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 2257 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6297	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2911	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 25.6 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.367 (Exibit 13-11)

S_R= 56.5 mph (Exhibit 13-11)

S_0= 60.7 mph (Exhibit 13-11)

S = 58.7 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumul + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 750	V_D = veh/h
	Freeway Volume, V_F: 6914	
	Ramp Volume, V_R: 563	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	6914	0.92	Level	10	0	0.952	1.00	7891
Ramp	563	0.92	Level	10	0	0.952	1.00	643
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 3115 pc/h

V_3 or V_{av34} 1599 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6313	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	5670	Exhibit 13-8	9400	No
V_R	643	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3115	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 24.3 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.486 (Exhibit 13-12)

S_R= 53.8 mph (Exhibit 13-12)

S_0= 69.0 mph (Exhibit 13-12)

S = 60.6 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	89 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative + Reduc Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	650
Freeway Volume, V_F	5799
Ramp Volume, V_R	390
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5799	0.92	Level	10	0	0.952	1.00	6618
Ramp	390	0.92	Level	10	0	0.952	1.00	445
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2704 pc/h

V_3 or V_{av34} 1461 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5626	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	5181	Exhibit 13-8	9400	No
V_R	445	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2704	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 21.7 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.468 (Exhibit 13-12)

S_R= 54.2 mph (Exhibit 13-12)

S_0= 69.5 mph (Exhibit 13-12)

S = 61.2 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	90 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative + Reduc Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 5799	
	Ramp Volume, V_R: 1069	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5799	0.92	Level	10	0	0.952	1.00	6618
Ramp	1069	0.92	Level	10	0	0.952	1.00	1220
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.065 using Equation (Exhibit 13-6)

V_{12} = 316 pc/h

V_3 or V_{av34} 2258 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1932 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6052	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3152	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 27.2 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.387 (Exibit 13-11)

S_R= 56.1 mph (Exhibit 13-11)

S_0= 61.6 mph (Exhibit 13-11)

S = 58.6 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	91 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative + Reduc Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 3339	
	Ramp Volume, V_R: 356	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3339	0.92	Level	10	0	0.952	1.00	3811
Ramp	356	0.92	Level	10	0	0.952	1.00	406
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.167 using Equation (Exhibit 13-6)

V_{12} = 497 pc/h

V_3 or V_{av34} 1238 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1189 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3379	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1595	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 15.5 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.315 (Exibit 13-11)

S_R= 57.8 mph (Exhibit 13-11)

S_0= 63.6 mph (Exhibit 13-11)

S = 60.7 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	92 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative + Reduc Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	5	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	625	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	3339	V_D =	veh/h
		Ramp Volume, V_R	782		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3339	0.92	Level	10	0	0.952	1.00	3811
Ramp	782	0.92	Level	10	0	0.952	1.00	892
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2165 pc/h

V_3 or V_{av34} 823 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3811	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	2919	Exhibit 13-8	9400	No
V_R	892	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2165	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 17.2 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.508 (Exhibit 13-12)

S_R= 53.3 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 59.8 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	93 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative + Reduc Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A:	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 600	V_D = veh/h
	Freeway Volume, V_F: 7034	
	Ramp Volume, V_R: 379	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	7034	0.92	Level	10	0	0.952	1.00	8028
Ramp	379	0.92	Level	10	0	0.952	1.00	433
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 3045 pc/h

V_3 or V_{av34} 1689 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6423	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	5990	Exhibit 13-8	9400	No
V_R	433	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3045	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 25.0 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.467 (Exhibit 13-12)

S_R= 54.3 mph (Exhibit 13-12)

S_0= 68.6 mph (Exhibit 13-12)

S = 61.0 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	94 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative + Reduc Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D	V_D = veh/h
	Freeway Volume, V_F: 7034	
	Ramp Volume, V_R: 834	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	7034	0.92	Level	10	0	0.952	1.00	8028
Ramp	834	0.92	Level	10	0	0.952	1.00	952
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.099 using Equation (Exhibit 13-6)

V_{12} = 567 pc/h

V_3 or V_{av34} 2587 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 2296 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6693	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3248	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 28.1 (pc/mi/ln)

LOS = D (Exhibit 13-2)

Speed Determination

M_S = 0.396 (Exibit 13-11)

S_R= 55.9 mph (Exhibit 13-11)

S_0= 60.6 mph (Exhibit 13-11)

S = 58.2 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative + Reduc Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	360
Deceleration Lane Length L_D	
Freeway Volume, V_F	4117
Ramp Volume, V_R	385
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4117	0.92	Level	10	0	0.952	1.00	4699
Ramp	385	0.92	Level	10	0	0.952	1.00	439
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.163 using Equation (Exhibit 13-6)

V_{12} = 597 pc/h

V_3 or V_{av34} 1534 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1466 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4105	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1905	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 17.9 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.322 (Exibit 13-11)

S_R= 57.6 mph (Exhibit 13-11)

S_0= 62.8 mph (Exhibit 13-11)

S = 60.3 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative + Reduc Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	5	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	750	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	4117	V_D =	veh/h
		Ramp Volume, V_R	466		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4117	0.92	Level	10	0	0.952	1.00	4699
Ramp	466	0.92	Level	10	0	0.952	1.00	532
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2144 pc/h

V_3 or V_{av34} 1043 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4230	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	3698	Exhibit 13-8	9400	No
V_R	532	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2144	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 15.9 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.476 (Exhibit 13-12)

S_R= 54.1 mph (Exhibit 13-12)

S_0= 71.1 mph (Exhibit 13-12)

S = 61.3 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	89 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative + Reduc Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	5	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	650	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	3948	V_D =	veh/h
		Ramp Volume, V_R	524		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3948	0.92	Level	10	0	0.952	1.00	4506
Ramp	524	0.92	Level	10	0	0.952	1.00	598
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2106 pc/h

V_3 or V_{av34} 975 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4056	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	3458	Exhibit 13-8	9400	No
V_R	598	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2106	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 16.5 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.482 (Exhibit 13-12)

S_R= 53.9 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 61.1 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	90 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative + Reduc Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 3948	
	Ramp Volume, V_R: 1392	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3948	0.92	Level	10	0	0.952	1.00	4506
Ramp	1392	0.92	Level	10	0	0.952	1.00	1589
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.019 using Equation (Exhibit 13-6)

V_{12} = 67 pc/h

V_3 or V_{av34} 1724 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1406 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5104	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2995	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 25.8 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.374 (Exibit 13-11)

S_R= 56.4 mph (Exhibit 13-11)

S_0= 63.0 mph (Exhibit 13-11)

S = 59.0 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	91 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative + Reduc Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 5593	
	Ramp Volume, V_R: 454	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5593	0.92	Level	10	0	0.952	1.00	6383
Ramp	454	0.92	Level	10	0	0.952	1.00	518
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.153 using Equation (Exhibit 13-6)

V_{12} = 743 pc/h

V_3 or V_{av34} 2054 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1940 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5370	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2458	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 22.2 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.341 (Exibit 13-11)

S_R= 57.1 mph (Exhibit 13-11)

S_0= 61.6 mph (Exhibit 13-11)

S = 59.5 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	92 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative + Reduc Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	625
Freeway Volume, V_F	5593
Ramp Volume, V_R	1060
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5593	0.92	Level	10	0	0.952	1.00	6383
Ramp	1060	0.92	Level	10	0	0.952	1.00	1210
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 3048 pc/h

V_3 or V_{av34} 1189 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5426	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4216	Exhibit 13-8	9400	No
V_R	1210	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3048	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 24.8 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.537 (Exhibit 13-12)

S_R= 52.7 mph (Exhibit 13-12)

S_0= 70.6 mph (Exhibit 13-12)

S = 59.2 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	93 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative + Reduc Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A:	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 600	V_D = veh/h
	Freeway Volume, V_F: 4787	
	Ramp Volume, V_R: 505	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4787	0.92	Level	10	0	0.952	1.00	5463
Ramp	505	0.92	Level	10	0	0.952	1.00	576
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2469 pc/h

V_3 or V_{av34} 1224 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4917	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4341	Exhibit 13-8	9400	No
V_R	576	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2469	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 20.1 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.480 (Exhibit 13-12)

S_R= 54.0 mph (Exhibit 13-12)

S_0= 70.4 mph (Exhibit 13-12)

S = 61.1 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	94 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative + Reduc Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 4787	
	Ramp Volume, V_R: 1092	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4787	0.92	Level	10	0	0.952	1.00	5463
Ramp	1092	0.92	Level	10	0	0.952	1.00	1246
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.062 using Equation (Exhibit 13-6)

V_{12} = 264 pc/h

V_3 or V_{av34} 1999 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1704 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5508	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2950	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 25.7 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.370 (Exibit 13-11)

S_R= 56.5 mph (Exhibit 13-11)

S_0= 62.2 mph (Exhibit 13-11)

S = 59.0 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative + Reduc Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	360
Deceleration Lane Length L_D	
Freeway Volume, V_F	6906
Ramp Volume, V_R	573
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	6906	0.92	Level	10	0	0.952	1.00	7882
Ramp	573	0.92	Level	10	0	0.952	1.00	654
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.136 using Equation (Exhibit 13-6)

V_{12} = 767 pc/h

V_3 or V_{av34} 2434 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 2254 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6290	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2908	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 25.6 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.367 (Exibit 13-11)

S_R= 56.6 mph (Exhibit 13-11)

S_0= 60.7 mph (Exhibit 13-11)

S = 58.7 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative + Reduc Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 750	V_D = veh/h
	Freeway Volume, V_F: 6906	
	Ramp Volume, V_R: 560	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	6906	0.92	Level	10	0	0.952	1.00	7882
Ramp	560	0.92	Level	10	0	0.952	1.00	639
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 3110 pc/h

V_3 or V_{av34} 1598 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6306	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	5667	Exhibit 13-8	9400	No
V_R	639	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3110	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 24.2 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.486 (Exhibit 13-12)

S_R= 53.8 mph (Exhibit 13-12)

S_0= 69.0 mph (Exhibit 13-12)

S = 60.6 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	89 Eight Mile Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative With Bridge Alt

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	5	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	650	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	5772	V_D =	veh/h
		Ramp Volume, V_R	423		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5772	0.92	Level	10	0	0.952	1.00	6588
Ramp	423	0.92	Level	10	0	0.952	1.00	483
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2714 pc/h

V_3 or V_{av34} 1443 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5600	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	5117	Exhibit 13-8	9400	No
V_R	483	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2714	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 21.7 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.471 (Exhibit 13-12)

S_R= 54.2 mph (Exhibit 13-12)

S_0= 69.6 mph (Exhibit 13-12)

S = 61.1 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	90 Eight Mile On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative Wtih Bridge Alt

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 5772	
	Ramp Volume, V_R: 1106	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5772	0.92	Level	10	0	0.952	1.00	6588
Ramp	1106	0.92	Level	10	0	0.952	1.00	1262
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.060 using Equation (Exhibit 13-6)

V_{12} = 289 pc/h

V_3 or V_{av34} 2260 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1924 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6072	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3186	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 27.5 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.390 (Exibit 13-11)

S_R= 56.0 mph (Exhibit 13-11)

S_0= 61.6 mph (Exhibit 13-11)

S = 58.5 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	91 Eight Mile On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative Wtih Bridge Alt

Project Description Tra Vigne

Inputs

Upstream Adj Ramp			Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N	5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N	1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D		V_D = veh/h
	Freeway Volume, V_F	3330	
	Ramp Volume, V_R	422	
	Freeway Free-Flow Speed, S_{FF}	65.0	
	Ramp Free-Flow Speed, S_{FR}	35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3330	0.92	Level	10	0	0.952	1.00	3801
Ramp	422	0.92	Level	10	0	0.952	1.00	482
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.158 using Equation (Exhibit 13-6)

V_{12} = 467 pc/h

V_3 or V_{av34} 1249 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3447	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	949	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 10.4 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.306 (Exibit 13-11)

S_R= 58.0 mph (Exhibit 13-11)

S_0= 62.3 mph (Exhibit 13-11)

S = 61.0 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	92 Eight Mile Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative Wtih Bridge Alt

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	5	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	625	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	3330	V_D =	veh/h
		Ramp Volume, V_R	840		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3330	0.92	Level	10	0	0.952	1.00	3801
Ramp	840	0.92	Level	10	0	0.952	1.00	959
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2198 pc/h

V_3 or V_{av34} 801 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3801	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	2842	Exhibit 13-8	9400	No
V_R	959	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2198	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 17.5 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.514 (Exhibit 13-12)

S_R= 53.2 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 59.6 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	93 Morada Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative Wtih Bridge Alt

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	5	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	600	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	7063	V_D =	veh/h
		Ramp Volume, V_R	369		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	7063	0.92	Level	10	0	0.952	1.00	8061
Ramp	369	0.92	Level	10	0	0.952	1.00	421
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 3049 pc/h

V_3 or V_{av34} 1700 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6449	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	6028	Exhibit 13-8	9400	No
V_R	421	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3049	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 25.1 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.466 (Exhibit 13-12)

S_R= 54.3 mph (Exhibit 13-12)

S_0= 68.6 mph (Exhibit 13-12)

S = 61.0 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	94 Morada On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative Wtih Bridge Alt

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 7063	
	Ramp Volume, V_R: 849	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	7063	0.92	Level	10	0	0.952	1.00	8061
Ramp	849	0.92	Level	10	0	0.952	1.00	969
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.097 using Equation (Exhibit 13-6)

V_{12} = 557 pc/h

V_3 or V_{av34} 2603 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 2305 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6733	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3274	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 28.3 (pc/mi/ln)

LOS = D (Exhibit 13-2)

Speed Determination

M_S = 0.399 (Exibit 13-11)

S_R= 55.8 mph (Exhibit 13-11)

S_0= 60.6 mph (Exhibit 13-11)

S = 58.2 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative With Bridge Alt

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 4142	
	Ramp Volume, V_R: 381	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4142	0.92	Level	10	0	0.952	1.00	4727
Ramp	381	0.92	Level	10	0	0.952	1.00	435
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.163 using Equation (Exhibit 13-6)

V_{12} = 603 pc/h

V_3 or V_{av34} 1542 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4123	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1038	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 11.1 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.307 (Exibit 13-11)

S_R= 57.9 mph (Exhibit 13-11)

S_0= 61.2 mph (Exhibit 13-11)

S = 60.4 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative With Bridge Alt

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	5	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	750	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	4142	V_D =	veh/h
		Ramp Volume, V_R	472		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4142	0.92	Level	10	0	0.952	1.00	4727
Ramp	472	0.92	Level	10	0	0.952	1.00	539
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2159 pc/h

V_3 or V_{av34} 1048 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4255	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	3716	Exhibit 13-8	9400	No
V_R	539	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2159	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 16.1 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.477 (Exhibit 13-12)

S_R= 54.0 mph (Exhibit 13-12)

S_0= 71.1 mph (Exhibit 13-12)

S = 61.3 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	89 Eight Mile Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative Wtih Bridge Alt

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 650	V_D = veh/h
	Freeway Volume, V_F: 3929	
	Ramp Volume, V_R: 572	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3929	0.92	Level	10	0	0.952	1.00	4484
Ramp	572	0.92	Level	10	0	0.952	1.00	653
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2128 pc/h

V_3 or V_{av34} 954 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4036	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	3383	Exhibit 13-8	9400	No
V_R	653	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2128	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 16.7 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.487 (Exhibit 13-12)

S_R= 53.8 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 60.9 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	90 Eight Mile On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative Wtih Bridge Alt

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 3929	
	Ramp Volume, V_R: 1470	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3929	0.92	Level	10	0	0.952	1.00	4484
Ramp	1470	0.92	Level	10	0	0.952	1.00	1678
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.008 using Equation (Exhibit 13-6)

V_{12} = 28 pc/h

V_3 or V_{av34} 1735 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1399 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5176	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3077	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 26.4 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.380 (Exibit 13-11)

S_R= 56.3 mph (Exhibit 13-11)

S_0= 63.0 mph (Exhibit 13-11)

S = 58.8 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	91 Eight Mile On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative Wtih Bridge Alt

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 5580	
	Ramp Volume, V_R: 543	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5580	0.92	Level	10	0	0.952	1.00	6368
Ramp	543	0.92	Level	10	0	0.952	1.00	620
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.140 using Equation (Exhibit 13-6)

V_{12} = 679 pc/h

V_3 or V_{av34} 2080 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1936 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5460	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2556	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 22.9 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.346 (Exibit 13-11)

S_R= 57.0 mph (Exhibit 13-11)

S_0= 61.6 mph (Exhibit 13-11)

S = 59.4 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	92 Eight Mile Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative Wtih Bridge Alt

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	5	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	625	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	5580	V_D =	veh/h
		Ramp Volume, V_R	1158		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5580	0.92	Level	10	0	0.952	1.00	6368
Ramp	1158	0.92	Level	10	0	0.952	1.00	1322
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 3106 pc/h

V_3 or V_{av34} 1153 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5413	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4091	Exhibit 13-8	9400	No
V_R	1322	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3106	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 25.3 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.547 (Exhibit 13-12)

S_R= 52.4 mph (Exhibit 13-12)

S_0= 70.7 mph (Exhibit 13-12)

S = 58.9 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	93 Morada Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative Wtih Bridge Alt

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	5	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	600	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	4844	V_D =	veh/h
		Ramp Volume, V_R	492		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4844	0.92	Level	10	0	0.952	1.00	5528
Ramp	492	0.92	Level	10	0	0.952	1.00	562
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 2366 pc/h

V_3 or V_{av34} 1166 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4699	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4137	Exhibit 13-8	9400	No
V_R	562	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2366	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 19.2 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.479 (Exhibit 13-12)

S_R= 54.0 mph (Exhibit 13-12)

S_0= 70.7 mph (Exhibit 13-12)

S = 61.2 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	94 Morada On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative Wtih Bridge Alt

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 4844	
	Ramp Volume, V_R: 1091	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4844	0.92	Level	10	0	0.952	1.00	5528
Ramp	1091	0.92	Level	10	0	0.952	1.00	1245
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.062 using Equation (Exhibit 13-6)

V_{12} = 261 pc/h

V_3 or V_{av34} 1970 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1680 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5447	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2925	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 25.5 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.368 (Exibit 13-11)

S_R= 56.5 mph (Exhibit 13-11)

S_0= 62.3 mph (Exhibit 13-11)

S = 59.0 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative Wtih Bridge Alt

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 360	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 6967	
	Ramp Volume, V_R: 567	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	6967	0.92	Level	10	0	0.952	1.00	7951
Ramp	567	0.92	Level	10	0	0.952	1.00	647
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.137 using Equation (Exhibit 13-6)

V_{12} = 778 pc/h

V_3 or V_{av34} 2453 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 2274 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6332	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2921	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 25.7 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.368 (Exibit 13-11)

S_R= 56.5 mph (Exhibit 13-11)

S_0= 60.7 mph (Exhibit 13-11)

S = 58.7 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative Wtih Bridge Alt

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	5	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	750	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	6967	V_D =	veh/h
		Ramp Volume, V_R	567		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	6967	0.92	Level	10	0	0.952	1.00	7951
Ramp	567	0.92	Level	10	0	0.952	1.00	647
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation (Exhibit 13-7)

V_{12} = 3138 pc/h

V_3 or V_{av34} 1611 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6361	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	5714	Exhibit 13-8	9400	No
V_R	647	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3138	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 24.5 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.486 (Exhibit 13-12)

S_R= 53.8 mph (Exhibit 13-12)

S_0= 68.9 mph (Exhibit 13-12)

S = 60.5 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	81 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	3	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	250	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	3106	V_D =	veh/h
		Ramp Volume, V_R	301		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3106	0.92	Level	10	0	0.952	1.00	3545
Ramp	301	0.92	Level	10	0	0.952	1.00	344
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.656 using Equation (Exhibit 13-7)

V_{12} = 2442 pc/h

V_3 or V_{av34} 1103 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3545	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	3201	Exhibit 13-8	7050	No
V_R	344	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2442	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 23.0 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.459 (Exhibit 13-12)

S_R= 54.4 mph (Exhibit 13-12)

S_0= 70.9 mph (Exhibit 13-12)

S = 58.7 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	82 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 340	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 3106	
	Ramp Volume, V_R: 352	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3106	0.92	Level	10	0	0.952	1.00	3545
Ramp	352	0.92	Level	10	0	0.952	1.00	402
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.587 using Equation (Exhibit 13-6)

V_{12} = 2081 pc/h

V_3 or V_{av34} 1464 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 2081 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3947	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2483	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 22.5 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.344 (Exibit 13-11)

S_R= 57.1 mph (Exhibit 13-11)

S_0= 61.5 mph (Exhibit 13-11)

S = 58.7 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	83 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	300
Deceleration Lane Length L_D	
Freeway Volume, V_F	1815
Ramp Volume, V_R	366
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	1815	0.92	Level	10	0	0.952	1.00	2071
Ramp	366	0.92	Level	10	0	0.952	1.00	418
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 1213 pc/h

V_3 or V_{av34} 858 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1213 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	2489	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1631	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.1 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.320 (Exibit 13-11)

S_R= 57.6 mph (Exhibit 13-11)

S_0= 63.7 mph (Exhibit 13-11)

S = 59.6 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	84 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 300	V_D = veh/h
	Freeway Volume, V_F: 1815	
	Ramp Volume, V_R: 146	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	1815	0.92	Level	10	0	0.952	1.00	2071
Ramp	146	0.92	Level	10	0	0.952	1.00	167
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.701 using Equation (Exhibit 13-7)

V_{12} = 1501 pc/h

V_3 or V_{av34} 570 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2071	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	1904	Exhibit 13-8	7050	No
V_R	167	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1501	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 14.5 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.443 (Exhibit 13-12)

S_R= 54.8 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.5 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	85 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	400
Freeway Volume, V_F	3387
Ramp Volume, V_R	301
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3387	0.92	Level	10	0	0.952	1.00	3866
Ramp	301	0.92	Level	10	0	0.952	1.00	344
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.648 using Equation (Exhibit 13-7)

V_{12} = 2625 pc/h

V_3 or V_{av34} 1241 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3866	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	3522	Exhibit 13-8	7050	No
V_R	344	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2625	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 23.2 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.459 (Exhibit 13-12)

S_R= 54.4 mph (Exhibit 13-12)

S_0= 70.4 mph (Exhibit 13-12)

S = 58.7 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	86 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 300	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D	V_D = veh/h
	Freeway Volume, V_F: 3387	
	Ramp Volume, V_R: 820	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3387	0.92	Level	10	0	0.952	1.00	3866
Ramp	820	0.92	Level	10	0	0.952	1.00	936
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 2265 pc/h

V_3 or V_{av34} 1601 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 2265 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4802	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3201	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 28.1 (pc/mi/ln)

LOS = D (Exhibit 13-2)

Speed Determination

M_S = 0.396 (Exibit 13-11)

S_R= 55.9 mph (Exhibit 13-11)

S_0= 61.0 mph (Exhibit 13-11)

S = 57.5 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	250
Deceleration Lane Length L_D	
Freeway Volume, V_F	1991
Ramp Volume, V_R	233
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	1991	0.92	Level	10	0	0.952	1.00	2272
Ramp	233	0.92	Level	10	0	0.952	1.00	266
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.585 using Equation (Exhibit 13-6)

V_{12} = 1328 pc/h

V_3 or V_{av34} 944 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1328 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	2538	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1594	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.2 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.323 (Exibit 13-11)

S_R= 57.6 mph (Exhibit 13-11)

S_0= 63.4 mph (Exhibit 13-11)

S = 59.6 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	360
Freeway Volume, V_F	1991
Ramp Volume, V_R	308
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	1991	0.92	Level	10	0	0.952	1.00	2272
Ramp	308	0.92	Level	10	0	0.952	1.00	352
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.687 using Equation (Exhibit 13-7)

V_{12} = 1671 pc/h

V_3 or V_{av34} 601 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2272	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	1920	Exhibit 13-8	7050	No
V_R	352	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1671	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 15.4 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.460 (Exhibit 13-12)

S_R= 54.4 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.1 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	81 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	3	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	250	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	2114	V_D =	veh/h
		Ramp Volume, V_R	344		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	2114	0.92	Level	10	0	0.952	1.00	2413
Ramp	344	0.92	Level	10	0	0.952	1.00	393
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.682 using Equation (Exhibit 13-7)

V_{12} = 1770 pc/h

V_3 or V_{av34} 643 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2413	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	2020	Exhibit 13-8	7050	No
V_R	393	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1770	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 17.2 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.463 (Exhibit 13-12)

S_R= 54.3 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.0 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	82 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	340
Deceleration Lane Length L_D	
Freeway Volume, V_F	2114
Ramp Volume, V_R	264
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	2114	0.92	Level	10	0	0.952	1.00	2413
Ramp	264	0.92	Level	10	0	0.952	1.00	301
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.587 using Equation (Exhibit 13-6)

V_{12} = 1416 pc/h

V_3 or V_{av34} 997 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1416 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	2714	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1717	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.6 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.319 (Exibit 13-11)

S_R= 57.7 mph (Exhibit 13-11)

S_0= 63.2 mph (Exhibit 13-11)

S = 59.6 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	83 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	300
Deceleration Lane Length L_D	
Freeway Volume, V_F	3041
Ramp Volume, V_R	233
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3041	0.92	Level	10	0	0.952	1.00	3471
Ramp	233	0.92	Level	10	0	0.952	1.00	266
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 2034 pc/h

V_3 or V_{av34} 1437 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 2034 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3737	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2300	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 21.4 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.339 (Exibit 13-11)

S_R= 57.2 mph (Exhibit 13-11)

S_0= 61.6 mph (Exhibit 13-11)

S = 58.8 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	84 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	3	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	300	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	3041	V_D =	veh/h
		Ramp Volume, V_R	317		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3041	0.92	Level	10	0	0.952	1.00	3471
Ramp	317	0.92	Level	10	0	0.952	1.00	362
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.657 using Equation (Exhibit 13-7)

V_{12} = 2403 pc/h

V_3 or V_{av34} 1068 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3471	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	3109	Exhibit 13-8	7050	No
V_R	362	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2403	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 22.2 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.461 (Exhibit 13-12)

S_R= 54.4 mph (Exhibit 13-12)

S_0= 71.0 mph (Exhibit 13-12)

S = 58.6 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	85 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	400
Freeway Volume, V_F	2306
Ramp Volume, V_R	388
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2306	0.92	Level	10	0	0.952	1.00	2632
Ramp	388	0.92	Level	10	0	0.952	1.00	443
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.674 using Equation (Exhibit 13-7)

V_{12} = 1918 pc/h

V_3 or V_{av34} 714 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2632	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	2189	Exhibit 13-8	7050	No
V_R	443	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1918	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 17.1 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.468 (Exhibit 13-12)

S_R= 54.2 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.0 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	86 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	300
Deceleration Lane Length L_D	
Freeway Volume, V_F	2306
Ramp Volume, V_R	320
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	2306	0.92	Level	10	0	0.952	1.00	2632
Ramp	320	0.92	Level	10	0	0.952	1.00	365
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 1542 pc/h

V_3 or V_{av34} 1090 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes,V_{12a} = 1542 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	2997	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1907	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 18.3 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.326 (Exibit 13-11)

S_R= 57.5 mph (Exhibit 13-11)

S_0= 62.9 mph (Exhibit 13-11)

S = 59.3 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	250
Deceleration Lane Length L_D	
Freeway Volume, V_F	3336
Ramp Volume, V_R	203
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3336	0.92	Level	10	0	0.952	1.00	3807
Ramp	203	0.92	Level	10	0	0.952	1.00	232
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.585 using Equation (Exhibit 13-6)

V_{12} = 2225 pc/h

V_3 or V_{av34} 1582 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes,V_{12a} = 2225 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4039	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2457	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 23.0 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.349 (Exibit 13-11)

S_R= 57.0 mph (Exhibit 13-11)

S_0= 61.1 mph (Exhibit 13-11)

S = 58.5 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP No Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	360
Freeway Volume, V_F	3336
Ramp Volume, V_R	667
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3336	0.92	Level	10	0	0.952	1.00	3807
Ramp	667	0.92	Level	10	0	0.952	1.00	761
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.630 using Equation (Exhibit 13-7)

V_{12} = 2679 pc/h

V_3 or V_{av34} 1128 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3807	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	3046	Exhibit 13-8	7050	No
V_R	761	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2679	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 24.1 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.496 (Exhibit 13-12)

S_R= 53.6 mph (Exhibit 13-12)

S_0= 70.8 mph (Exhibit 13-12)

S = 57.7 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	81 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP Plus GP Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	3	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	250	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	3106	V_D =	veh/h
		Ramp Volume, V_R	313		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3106	0.92	Level	10	0	0.952	1.00	3545
Ramp	313	0.92	Level	10	0	0.952	1.00	357
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.655 using Equation (Exhibit 13-7)

V_{12} = 2445 pc/h

V_3 or V_{av34} 1100 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3545	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	3188	Exhibit 13-8	7050	No
V_R	357	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2445	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 23.0 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.460 (Exhibit 13-12)

S_R= 54.4 mph (Exhibit 13-12)

S_0= 70.9 mph (Exhibit 13-12)

S = 58.7 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	82 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP Plus GP Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 340	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 3106	
	Ramp Volume, V_R: 608	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3106	0.92	Level	10	0	0.952	1.00	3545
Ramp	608	0.92	Level	10	0	0.952	1.00	694
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.587 using Equation (Exhibit 13-6)

V_{12} = 2081 pc/h

V_3 or V_{av34} 1464 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 2081 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4239	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2775	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 24.7 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.360 (Exibit 13-11)

S_R= 56.7 mph (Exhibit 13-11)

S_0= 61.5 mph (Exhibit 13-11)

S = 58.3 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	83 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP Plus GP Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	300
Deceleration Lane Length L_D	
Freeway Volume, V_F	1815
Ramp Volume, V_R	394
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	1815	0.92	Level	10	0	0.952	1.00	2071
Ramp	394	0.92	Level	10	0	0.952	1.00	450
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 1213 pc/h

V_3 or V_{av34} 858 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1213 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	2521	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1663	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.4 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.321 (Exibit 13-11)

S_R= 57.6 mph (Exhibit 13-11)

S_0= 63.7 mph (Exhibit 13-11)

S = 59.6 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	84 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP Plus GP Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	300
Freeway Volume, V_F	1815
Ramp Volume, V_R	250
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	1815	0.92	Level	10	0	0.952	1.00	2071
Ramp	250	0.92	Level	10	0	0.952	1.00	285
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.695 using Equation (Exhibit 13-7)

V_{12} = 1526 pc/h

V_3 or V_{av34} 545 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2071	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	1786	Exhibit 13-8	7050	No
V_R	285	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1526	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 14.7 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.454 (Exhibit 13-12)

S_R= 54.6 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.2 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	85 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP Plus GP Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 400	V_D = veh/h
	Freeway Volume, V_F: 3643	
	Ramp Volume, V_R: 301	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3643	0.92	Level	10	0	0.952	1.00	4158
Ramp	301	0.92	Level	10	0	0.952	1.00	344
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.640 using Equation (Exhibit 13-7)

V_{12} = 2786 pc/h

V_3 or V_{av34} 1372 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4158	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	3814	Exhibit 13-8	7050	No
V_R	344	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2786	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 24.6 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.459 (Exhibit 13-12)

S_R= 54.4 mph (Exhibit 13-12)

S_0= 69.9 mph (Exhibit 13-12)

S = 58.7 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	86 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP Plus GP Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 300	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D	V_D = veh/h
	Freeway Volume, V_F: 3643	
	Ramp Volume, V_R: 820	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3643	0.92	Level	10	0	0.952	1.00	4158
Ramp	820	0.92	Level	10	0	0.952	1.00	936
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 2436 pc/h

V_3 or V_{av34} 1722 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 2436 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5094	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3372	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 29.5 (pc/mi/ln)

LOS = D (Exhibit 13-2)

Speed Determination

M_S = 0.414 (Exibit 13-11)

S_R= 55.5 mph (Exhibit 13-11)

S_0= 60.6 mph (Exhibit 13-11)

S = 57.1 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP Plus GP Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	250
Deceleration Lane Length L_D	
Freeway Volume, V_F	2095
Ramp Volume, V_R	233
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	2095	0.92	Level	10	0	0.952	1.00	2391
Ramp	233	0.92	Level	10	0	0.952	1.00	266
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.585 using Equation (Exhibit 13-6)

V_{12} = 1398 pc/h

V_3 or V_{av34} 993 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1398 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	2657	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1664	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.8 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.324 (Exibit 13-11)

S_R= 57.5 mph (Exhibit 13-11)

S_0= 63.2 mph (Exhibit 13-11)

S = 59.5 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP Plus GP Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 360	V_D = veh/h
	Freeway Volume, V_F: 2095	
	Ramp Volume, V_R: 308	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2095	0.92	Level	10	0	0.952	1.00	2391
Ramp	308	0.92	Level	10	0	0.952	1.00	352
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.684 using Equation (Exhibit 13-7)

V_{12} = 1747 pc/h

V_3 or V_{av34} 644 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2391	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	2039	Exhibit 13-8	7050	No
V_R	352	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1747	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 16.0 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.460 (Exhibit 13-12)

S_R= 54.4 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.1 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	81 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP Plus GP Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	3	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	250	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	2114	V_D =	veh/h
		Ramp Volume, V_R	373		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2114	0.92	Level	10	0	0.952	1.00	2413
Ramp	373	0.92	Level	10	0	0.952	1.00	426
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.680 using Equation (Exhibit 13-7)

V_{12} = 1777 pc/h

V_3 or V_{av34} 636 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2413	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	1987	Exhibit 13-8	7050	No
V_R	426	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1777	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 17.3 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.466 (Exhibit 13-12)

S_R= 54.3 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 57.9 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	82 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP Plus GP Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	340
Deceleration Lane Length L_D	
Freeway Volume, V_F	2114
Ramp Volume, V_R	461
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	2114	0.92	Level	10	0	0.952	1.00	2413
Ramp	461	0.92	Level	10	0	0.952	1.00	526
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.587 using Equation (Exhibit 13-6)

V_{12} = 1416 pc/h

V_3 or V_{av34} 997 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1416 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	2939	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1942	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 18.2 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.324 (Exibit 13-11)

S_R= 57.5 mph (Exhibit 13-11)

S_0= 63.2 mph (Exhibit 13-11)

S = 59.3 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	83 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP Plus GP Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	300
Deceleration Lane Length L_D	
Freeway Volume, V_F	3041
Ramp Volume, V_R	253
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3041	0.92	Level	10	0	0.952	1.00	3471
Ramp	253	0.92	Level	10	0	0.952	1.00	289
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 2034 pc/h

V_3 or V_{av34} 1437 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 2034 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3760	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2323	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 21.6 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.340 (Exibit 13-11)

S_R= 57.2 mph (Exhibit 13-11)

S_0= 61.6 mph (Exhibit 13-11)

S = 58.8 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	84 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP Plus GP Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 300	V_D = veh/h
	Freeway Volume, V_F: 3041	
	Ramp Volume, V_R: 605	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3041	0.92	Level	10	0	0.952	1.00	3471
Ramp	605	0.92	Level	10	0	0.952	1.00	690
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.641 using Equation (Exhibit 13-7)

V_{12} = 2474 pc/h

V_3 or V_{av34} 997 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3471	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	2781	Exhibit 13-8	7050	No
V_R	690	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2474	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 22.8 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.490 (Exhibit 13-12)

S_R= 53.7 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 57.8 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	85 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP Plus GP Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 400	V_D = veh/h
	Freeway Volume, V_F: 2503	
	Ramp Volume, V_R: 388	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2503	0.92	Level	10	0	0.952	1.00	2857
Ramp	388	0.92	Level	10	0	0.952	1.00	443
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.668 using Equation (Exhibit 13-7)

V_{12} = 2056 pc/h

V_3 or V_{av34} 801 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2857	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	2414	Exhibit 13-8	7050	No
V_R	443	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2056	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 18.3 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.468 (Exhibit 13-12)

S_R= 54.2 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.1 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	86 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP Plus GP Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 300	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 2503	
	Ramp Volume, V_R: 320	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2503	0.92	Level	10	0	0.952	1.00	2857
Ramp	320	0.92	Level	10	0	0.952	1.00	365
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 1674 pc/h

V_3 or V_{av34} 1183 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1674 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3222	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2039	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 19.3 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.330 (Exibit 13-11)

S_R= 57.4 mph (Exhibit 13-11)

S_0= 62.5 mph (Exhibit 13-11)

S = 59.2 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP Plus GP Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	250
Deceleration Lane Length L_D	
Freeway Volume, V_F	3624
Ramp Volume, V_R	203
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3624	0.92	Level	10	0	0.952	1.00	4136
Ramp	203	0.92	Level	10	0	0.952	1.00	232
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.585 using Equation (Exhibit 13-6)

V_{12} = 2417 pc/h

V_3 or V_{av34} 1719 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 2417 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4368	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2649	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 24.5 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.359 (Exibit 13-11)

S_R= 56.8 mph (Exhibit 13-11)

S_0= 60.6 mph (Exhibit 13-11)

S = 58.2 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP Plus GP Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 360	V_D = veh/h
	Freeway Volume, V_F: 3624	
	Ramp Volume, V_R: 667	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3624	0.92	Level	10	0	0.952	1.00	4136
Ramp	667	0.92	Level	10	0	0.952	1.00	761
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.622 using Equation (Exhibit 13-7)

V_{12} = 2859 pc/h

V_3 or V_{av34} 1277 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4136	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	3375	Exhibit 13-8	7050	No
V_R	761	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2859	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 25.6 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.496 (Exhibit 13-12)

S_R= 53.6 mph (Exhibit 13-12)

S_0= 70.2 mph (Exhibit 13-12)

S = 57.8 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	81 Eight Mile Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	3	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	250	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	3106	V_D =	veh/h
		Ramp Volume, V_R	311		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3106	0.92	Level	10	0	0.952	1.00	3545
Ramp	311	0.92	Level	10	0	0.952	1.00	355
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.655 using Equation (Exhibit 13-7)

V_{12} = 2445 pc/h

V_3 or V_{av34} 1100 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3545	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	3190	Exhibit 13-8	7050	No
V_R	355	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2445	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 23.0 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.460 (Exhibit 13-12)

S_R= 54.4 mph (Exhibit 13-12)

S_0= 70.9 mph (Exhibit 13-12)

S = 58.7 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	82 Eight Mile On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 340	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 3106	
	Ramp Volume, V_R: 471	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3106	0.92	Level	10	0	0.952	1.00	3545
Ramp	471	0.92	Level	10	0	0.952	1.00	538
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.587 using Equation (Exhibit 13-6)

V_{12} = 2081 pc/h

V_3 or V_{av34} 1464 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 2081 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4083	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2619	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 23.5 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.351 (Exibit 13-11)

S_R= 56.9 mph (Exhibit 13-11)

S_0= 61.5 mph (Exhibit 13-11)

S = 58.5 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	83 Eight Mile On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 300	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 1815	
	Ramp Volume, V_R: 385	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	1815	0.92	Level	10	0	0.952	1.00	2071
Ramp	385	0.92	Level	10	0	0.952	1.00	439
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 1213 pc/h

V_3 or V_{av34} 858 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1213 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	2510	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1652	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.3 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.320 (Exibit 13-11)

S_R= 57.6 mph (Exhibit 13-11)

S_0= 63.7 mph (Exhibit 13-11)

S = 59.6 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	84 Eight Mile Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	3	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	300	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	1815	V_D =	veh/h
		Ramp Volume, V_R	204		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	1815	0.92	Level	10	0	0.952	1.00	2071
Ramp	204	0.92	Level	10	0	0.952	1.00	233
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.698 using Equation (Exhibit 13-7)

V_{12} = 1515 pc/h

V_3 or V_{av34} 556 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2071	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	1838	Exhibit 13-8	7050	No
V_R	233	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1515	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 14.6 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.449 (Exhibit 13-12)

S_R= 54.7 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.3 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	85 Morada Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	3	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	400	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	3506	V_D =	veh/h
		Ramp Volume, V_R	301		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3506	0.92	Level	10	0	0.952	1.00	4001
Ramp	301	0.92	Level	10	0	0.952	1.00	344
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.644 using Equation (Exhibit 13-7)

V_{12} = 2700 pc/h

V_3 or V_{av34} 1301 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4001	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	3657	Exhibit 13-8	7050	No
V_R	344	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2700	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 23.9 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.459 (Exhibit 13-12)

S_R= 54.4 mph (Exhibit 13-12)

S_0= 70.1 mph (Exhibit 13-12)

S = 58.7 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	86 Morada On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp			Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N	3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N	1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	300	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D		V_D = veh/h
	Freeway Volume, V_F	3506	
	Ramp Volume, V_R	869	
	Freeway Free-Flow Speed, S_{FF}	65.0	
	Ramp Free-Flow Speed, S_{FR}	35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3506	0.92	Level	10	0	0.952	1.00	4001
Ramp	869	0.92	Level	10	0	0.952	1.00	992
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 2344 pc/h

V_3 or V_{av34} 1657 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 2344 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4993	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3336	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 29.2 (pc/mi/ln)

LOS = D (Exhibit 13-2)

Speed Determination

M_S = 0.410 (Exibit 13-11)

S_R= 55.6 mph (Exhibit 13-11)

S_0= 60.8 mph (Exhibit 13-11)

S = 57.2 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 250	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 2049	
	Ramp Volume, V_R: 233	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2049	0.92	Level	10	0	0.952	1.00	2339
Ramp	233	0.92	Level	10	0	0.952	1.00	266
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.585 using Equation (Exhibit 13-6)

V_{12} = 1367 pc/h

V_3 or V_{av34} 972 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1367 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	2605	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1633	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.5 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.323 (Exibit 13-11)

S_R= 57.6 mph (Exhibit 13-11)

S_0= 63.3 mph (Exhibit 13-11)

S = 59.6 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	3	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	360	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	2049	V_D =	veh/h
		Ramp Volume, V_R	336		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2049	0.92	Level	10	0	0.952	1.00	2339
Ramp	336	0.92	Level	10	0	0.952	1.00	383
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.684 using Equation (Exhibit 13-7)

V_{12} = 1721 pc/h

V_3 or V_{av34} 618 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2339	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	1956	Exhibit 13-8	7050	No
V_R	383	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1721	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 15.8 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.462 (Exhibit 13-12)

S_R= 54.4 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.0 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	81 Eight Mile Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	3	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	250	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	2114	V_D =	veh/h
		Ramp Volume, V_R	361		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2114	0.92	Level	10	0	0.952	1.00	2413
Ramp	361	0.92	Level	10	0	0.952	1.00	412
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.681 using Equation (Exhibit 13-7)

V_{12} = 1774 pc/h

V_3 or V_{av34} 639 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2413	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	2001	Exhibit 13-8	7050	No
V_R	412	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1774	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$

D_R = 17.3 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.465 (Exhibit 13-12)

S_R= 54.3 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.0 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	82 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 340	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 2114	
	Ramp Volume, V_R: 389	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2114	0.92	Level	10	0	0.952	1.00	2413
Ramp	389	0.92	Level	10	0	0.952	1.00	444
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.587 using Equation (Exhibit 13-6)

V_{12} = 1416 pc/h

V_3 or V_{av34} 997 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	2857	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1860	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 17.6 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.322 (Exibit 13-11)

S_R= 57.6 mph (Exhibit 13-11)

S_0= 63.2 mph (Exhibit 13-11)

S = 59.4 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	83 Eight Mile On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 300	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 3041	
	Ramp Volume, V_R: 248	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3041	0.92	Level	10	0	0.952	1.00	3471
Ramp	248	0.92	Level	10	0	0.952	1.00	283
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 2034 pc/h

V_3 or V_{av34} 1437 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 2034 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3754	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2317	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 21.5 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.340 (Exibit 13-11)

S_R= 57.2 mph (Exhibit 13-11)

S_0= 61.6 mph (Exhibit 13-11)

S = 58.8 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	84 Eight Mile Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	3	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	300	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	3041	V_D =	veh/h
		Ramp Volume, V_R	446		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3041	0.92	Level	10	0	0.952	1.00	3471
Ramp	446	0.92	Level	10	0	0.952	1.00	509
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.650 using Equation (Exhibit 13-7)

V_{12} = 2434 pc/h

V_3 or V_{av34} 1037 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3471	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	2962	Exhibit 13-8	7050	No
V_R	509	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2434	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 22.5 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.474 (Exhibit 13-12)

S_R= 54.1 mph (Exhibit 13-12)

S_0= 71.2 mph (Exhibit 13-12)

S = 58.3 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	85 Morada Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	3	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	400	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	2431	V_D =	veh/h
		Ramp Volume, V_R	388		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2431	0.92	Level	10	0	0.952	1.00	2775
Ramp	388	0.92	Level	10	0	0.952	1.00	443
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.670 using Equation (Exhibit 13-7)

V_{12} = 2006 pc/h

V_3 or V_{av34} 769 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2775	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	2332	Exhibit 13-8	7050	No
V_R	443	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2006	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 17.9 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.468 (Exhibit 13-12)

S_R= 54.2 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.1 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	86 Morada On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp			Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N	3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N	1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	300	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D		V_D = veh/h
	Freeway Volume, V_F	2431	
	Ramp Volume, V_R	342	
	Freeway Free-Flow Speed, S_{FF}	65.0	
	Ramp Free-Flow Speed, S_{FR}	35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2431	0.92	Level	10	0	0.952	1.00	2775
Ramp	342	0.92	Level	10	0	0.952	1.00	390
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 1626 pc/h

V_3 or V_{av34} 1149 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3165	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2016	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 19.1 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.329 (Exibit 13-11)

S_R= 57.4 mph (Exhibit 13-11)

S_0= 62.7 mph (Exhibit 13-11)

S = 59.2 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 250	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 3465	
	Ramp Volume, V_R: 203	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3465	0.92	Level	10	0	0.952	1.00	3955
Ramp	203	0.92	Level	10	0	0.952	1.00	232
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.585 using Equation (Exhibit 13-6)

V_{12} = 2312 pc/h

V_3 or V_{av34} 1643 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 2312 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4187	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2544	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 23.6 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.353 (Exibit 13-11)

S_R= 56.9 mph (Exhibit 13-11)

S_0= 60.9 mph (Exhibit 13-11)

S = 58.4 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP Plus Project

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	3	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	360	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	3465	V_D =	veh/h
		Ramp Volume, V_R	705		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3465	0.92	Level	10	0	0.952	1.00	3955
Ramp	705	0.92	Level	10	0	0.952	1.00	805
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.624 using Equation (Exhibit 13-7)

V_{12} = 2771 pc/h

V_3 or V_{av34} 1184 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3955	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	3150	Exhibit 13-8	7050	No
V_R	805	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2771	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 24.8 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.500 (Exhibit 13-12)

S_R= 53.5 mph (Exhibit 13-12)

S_0= 70.6 mph (Exhibit 13-12)

S = 57.7 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	81 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 250	V_D = veh/h
	Freeway Volume, V_F: 3106	
	Ramp Volume, V_R: 309	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3106	0.92	Level	10	0	0.952	1.00	3545
Ramp	309	0.92	Level	10	0	0.952	1.00	353
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.655 using Equation (Exhibit 13-7)

V_{12} = 2444 pc/h

V_3 or V_{av34} 1101 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3545	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	3192	Exhibit 13-8	7050	No
V_R	353	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2444	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 23.0 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.460 (Exhibit 13-12)

S_R= 54.4 mph (Exhibit 13-12)

S_0= 70.9 mph (Exhibit 13-12)

S = 58.7 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	82 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 340	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 3106	
	Ramp Volume, V_R: 436	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3106	0.92	Level	10	0	0.952	1.00	3545
Ramp	436	0.92	Level	10	0	0.952	1.00	498
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.587 using Equation (Exhibit 13-6)

V_{12} = 2081 pc/h

V_3 or V_{av34} 1464 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 2081 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4043	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2579	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 23.2 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.349 (Exibit 13-11)

S_R= 57.0 mph (Exhibit 13-11)

S_0= 61.5 mph (Exhibit 13-11)

S = 58.5 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	83 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	300
Deceleration Lane Length L_D	
Freeway Volume, V_F	1815
Ramp Volume, V_R	381
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	1815	0.92	Level	10	0	0.952	1.00	2071
Ramp	381	0.92	Level	10	0	0.952	1.00	435
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 1213 pc/h

V_3 or V_{av34} 858 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1213 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	2506	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1648	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.2 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.320 (Exibit 13-11)

S_R= 57.6 mph (Exhibit 13-11)

S_0= 63.7 mph (Exhibit 13-11)

S = 59.6 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	84 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 300	V_D = veh/h
	Freeway Volume, V_F: 1815	
	Ramp Volume, V_R: 186	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	1815	0.92	Level	10	0	0.952	1.00	2071
Ramp	186	0.92	Level	10	0	0.952	1.00	212
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.698 using Equation (Exhibit 13-7)

V_{12} = 1510 pc/h

V_3 or V_{av34} 561 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2071	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	1859	Exhibit 13-8	7050	No
V_R	212	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1510	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 14.5 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.447 (Exhibit 13-12)

S_R= 54.7 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.4 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	85 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 400	V_D = veh/h
	Freeway Volume, V_F: 3471	
	Ramp Volume, V_R: 301	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3471	0.92	Level	10	0	0.952	1.00	3961
Ramp	301	0.92	Level	10	0	0.952	1.00	344
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.645 using Equation (Exhibit 13-7)

V_{12} = 2678 pc/h

V_3 or V_{av34} 1283 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3961	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	3617	Exhibit 13-8	7050	No
V_R	344	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2678	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 23.7 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.459 (Exhibit 13-12)

S_R= 54.4 mph (Exhibit 13-12)

S_0= 70.2 mph (Exhibit 13-12)

S = 58.7 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	86 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	300
Deceleration Lane Length L_D	
Freeway Volume, V_F	3471
Ramp Volume, V_R	867
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3471	0.92	Level	10	0	0.952	1.00	3961
Ramp	867	0.92	Level	10	0	0.952	1.00	990
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 2321 pc/h

V_3 or V_{av34} 1640 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 2321 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4951	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3311	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 29.0 (pc/mi/ln)

LOS = D (Exhibit 13-2)

Speed Determination

M_S = 0.407 (Exibit 13-11)

S_R= 55.6 mph (Exhibit 13-11)

S_0= 60.9 mph (Exhibit 13-11)

S = 57.3 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	250
Deceleration Lane Length L_D	
Freeway Volume, V_F	2031
Ramp Volume, V_R	233
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	2031	0.92	Level	10	0	0.952	1.00	2318
Ramp	233	0.92	Level	10	0	0.952	1.00	266
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.585 using Equation (Exhibit 13-6)

V_{12} = 1355 pc/h

V_3 or V_{av34} 963 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1355 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	2584	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1621	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.4 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.323 (Exibit 13-11)

S_R= 57.6 mph (Exhibit 13-11)

S_0= 63.3 mph (Exhibit 13-11)

S = 59.6 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 360	V_D = veh/h
	Freeway Volume, V_F: 2031	
	Ramp Volume, V_R: 336	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2031	0.92	Level	10	0	0.952	1.00	2318
Ramp	336	0.92	Level	10	0	0.952	1.00	383
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.684 using Equation (Exhibit 13-7)

V_{12} = 1707 pc/h

V_3 or V_{av34} 611 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2318	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	1935	Exhibit 13-8	7050	No
V_R	383	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1707	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 15.7 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.462 (Exhibit 13-12)

S_R= 54.4 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.0 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	81 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 250	V_D = veh/h
	Freeway Volume, V_F: 2114	
	Ramp Volume, V_R: 356	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	2114	0.92	Level	10	0	0.952	1.00	2413
Ramp	356	0.92	Level	10	0	0.952	1.00	406
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.681 using Equation (Exhibit 13-7)

V_{12} = 1773 pc/h

V_3 or V_{av34} 640 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2413	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	2007	Exhibit 13-8	7050	No
V_R	406	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1773	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 17.2 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.465 (Exhibit 13-12)

S_R= 54.3 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.0 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	82 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 340	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 2114	
	Ramp Volume, V_R: 316	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2114	0.92	Level	10	0	0.952	1.00	2413
Ramp	316	0.92	Level	10	0	0.952	1.00	361
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.587 using Equation (Exhibit 13-6)

V_{12} = 1416 pc/h

V_3 or V_{av34} 997 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1416 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	2774	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1777	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 17.0 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.320 (Exibit 13-11)

S_R= 57.6 mph (Exhibit 13-11)

S_0= 63.2 mph (Exhibit 13-11)

S = 59.5 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	83 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	300
Deceleration Lane Length L_D	
Freeway Volume, V_F	3041
Ramp Volume, V_R	241
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3041	0.92	Level	10	0	0.952	1.00	3471
Ramp	241	0.92	Level	10	0	0.952	1.00	275
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 2034 pc/h

V_3 or V_{av34} 1437 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 2034 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3746	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2309	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 21.5 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.339 (Exibit 13-11)

S_R= 57.2 mph (Exhibit 13-11)

S_0= 61.6 mph (Exhibit 13-11)

S = 58.8 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	84 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 300	V_D = veh/h
	Freeway Volume, V_F: 3041	
	Ramp Volume, V_R: 400	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3041	0.92	Level	10	0	0.952	1.00	3471
Ramp	400	0.92	Level	10	0	0.952	1.00	457
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.652 using Equation (Exhibit 13-7)

V_{12} = 2423 pc/h

V_3 or V_{av34} 1048 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3471	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	3014	Exhibit 13-8	7050	No
V_R	457	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2423	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 22.4 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.469 (Exhibit 13-12)

S_R= 54.2 mph (Exhibit 13-12)

S_0= 71.1 mph (Exhibit 13-12)

S = 58.4 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	85 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 400	V_D = veh/h
	Freeway Volume, V_F: 2358	
	Ramp Volume, V_R: 388	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2358	0.92	Level	10	0	0.952	1.00	2691
Ramp	388	0.92	Level	10	0	0.952	1.00	443
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.672 using Equation (Exhibit 13-7)

V_{12} = 1954 pc/h

V_3 or V_{av34} 737 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2691	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	2248	Exhibit 13-8	7050	No
V_R	443	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1954	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 17.5 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.468 (Exhibit 13-12)

S_R= 54.2 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.0 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	86 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 300	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 2358	
	Ramp Volume, V_R: 348	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2358	0.92	Level	10	0	0.952	1.00	2691
Ramp	348	0.92	Level	10	0	0.952	1.00	397
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 1577 pc/h

V_3 or V_{av34} 1114 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1577 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3088	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1974	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 18.8 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.328 (Exibit 13-11)

S_R= 57.5 mph (Exhibit 13-11)

S_0= 62.8 mph (Exhibit 13-11)

S = 59.3 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	250
Deceleration Lane Length L_D	
Freeway Volume, V_F	3419
Ramp Volume, V_R	203
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3419	0.92	Level	10	0	0.952	1.00	3902
Ramp	203	0.92	Level	10	0	0.952	1.00	232
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.585 using Equation (Exhibit 13-6)

V_{12} = 2281 pc/h

V_3 or V_{av34} 1621 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 2281 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4134	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2513	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 23.4 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.352 (Exibit 13-11)

S_R= 56.9 mph (Exhibit 13-11)

S_0= 61.0 mph (Exhibit 13-11)

S = 58.4 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP + Reduced Density Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 360	V_D = veh/h
	Freeway Volume, V_F: 3419	
	Ramp Volume, V_R: 709	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3419	0.92	Level	10	0	0.952	1.00	3902
Ramp	709	0.92	Level	10	0	0.952	1.00	809
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.625 using Equation (Exhibit 13-7)

V_{12} = 2743 pc/h

V_3 or V_{av34} 1159 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3902	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	3093	Exhibit 13-8	7050	No
V_R	809	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2743	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 24.6 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.501 (Exhibit 13-12)

S_R= 53.5 mph (Exhibit 13-12)

S_0= 70.7 mph (Exhibit 13-12)

S = 57.6 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	81 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP Plus Reduced Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	3	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	250	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	3106	V_D =	veh/h
		Ramp Volume, V_R	308		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3106	0.92	Level	10	0	0.952	1.00	3545
Ramp	308	0.92	Level	10	0	0.952	1.00	352
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.655 using Equation (Exhibit 13-7)

V_{12} = 2444 pc/h

V_3 or V_{av34} 1101 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3545	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	3193	Exhibit 13-8	7050	No
V_R	352	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2444	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 23.0 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.460 (Exhibit 13-12)

S_R= 54.4 mph (Exhibit 13-12)

S_0= 70.9 mph (Exhibit 13-12)

S = 58.7 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	82 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP Plus Reduced Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 340	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 3106	
	Ramp Volume, V_R: 425	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3106	0.92	Level	10	0	0.952	1.00	3545
Ramp	425	0.92	Level	10	0	0.952	1.00	485
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.587 using Equation (Exhibit 13-6)

V_{12} = 2081 pc/h

V_3 or V_{av34} 1464 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 2081 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4030	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2566	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 23.1 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.348 (Exibit 13-11)

S_R= 57.0 mph (Exhibit 13-11)

S_0= 61.5 mph (Exhibit 13-11)

S = 58.6 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	83 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP Plus Reduced Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	300
Deceleration Lane Length L_D	
Freeway Volume, V_F	1815
Ramp Volume, V_R	379
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	1815	0.92	Level	10	0	0.952	1.00	2071
Ramp	379	0.92	Level	10	0	0.952	1.00	433
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 1213 pc/h

V_3 or V_{av34} 858 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1213 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	2504	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1646	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.2 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.320 (Exibit 13-11)

S_R= 57.6 mph (Exhibit 13-11)

S_0= 63.7 mph (Exhibit 13-11)

S = 59.6 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	84 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP Plus Reduced Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 300	V_D = veh/h
	Freeway Volume, V_F: 1815	
	Ramp Volume, V_R: 183	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	1815	0.92	Level	10	0	0.952	1.00	2071
Ramp	183	0.92	Level	10	0	0.952	1.00	209
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.699 using Equation (Exhibit 13-7)

V_{12} = 1510 pc/h

V_3 or V_{av34} 561 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2071	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	1862	Exhibit 13-8	7050	No
V_R	209	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1510	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 14.5 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.447 (Exhibit 13-12)

S_R= 54.7 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.4 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	85 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP Plus Reduced Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 400	V_D = veh/h
	Freeway Volume, V_F: 3460	
	Ramp Volume, V_R: 301	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3460	0.92	Level	10	0	0.952	1.00	3949
Ramp	301	0.92	Level	10	0	0.952	1.00	344
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.645 using Equation (Exhibit 13-7)

V_{12} = 2671 pc/h

V_3 or V_{av34} 1278 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3949	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	3605	Exhibit 13-8	7050	No
V_R	344	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2671	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 23.6 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.459 (Exhibit 13-12)

S_R= 54.4 mph (Exhibit 13-12)

S_0= 70.2 mph (Exhibit 13-12)

S = 58.7 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	86 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP Plus Reduced Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 300	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D	V_D = veh/h
	Freeway Volume, V_F: 3460	
	Ramp Volume, V_R: 862	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3460	0.92	Level	10	0	0.952	1.00	3949
Ramp	862	0.92	Level	10	0	0.952	1.00	984
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 2314 pc/h

V_3 or V_{av34} 1635 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 2314 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4933	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3298	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 28.9 (pc/mi/ln)

LOS = D (Exhibit 13-2)

Speed Determination

M_S = 0.406 (Exibit 13-11)

S_R= 55.7 mph (Exhibit 13-11)

S_0= 60.9 mph (Exhibit 13-11)

S = 57.3 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP Plus Reduced Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 250	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 2028	
	Ramp Volume, V_R: 233	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2028	0.92	Level	10	0	0.952	1.00	2315
Ramp	233	0.92	Level	10	0	0.952	1.00	266
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.585 using Equation (Exhibit 13-6)

V_{12} = 1353 pc/h

V_3 or V_{av34} 962 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1353 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	2581	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1619	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.4 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.323 (Exibit 13-11)

S_R= 57.6 mph (Exhibit 13-11)

S_0= 63.3 mph (Exhibit 13-11)

S = 59.6 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP Plus Reduced Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	3	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	360	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	2028	V_D =	veh/h
		Ramp Volume, V_R	334		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	2028	0.92	Level	10	0	0.952	1.00	2315
Ramp	334	0.92	Level	10	0	0.952	1.00	381
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.685 using Equation (Exhibit 13-7)

V_{12} = 1705 pc/h

V_3 or V_{av34} 610 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2315	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	1934	Exhibit 13-8	7050	No
V_R	381	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1705	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 15.7 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.462 (Exhibit 13-12)

S_R= 54.4 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.0 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	81 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP Plus Reduced Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	3	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	250	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	2114	V_D =	veh/h
		Ramp Volume, V_R	355		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	2114	0.92	Level	10	0	0.952	1.00	2413
Ramp	355	0.92	Level	10	0	0.952	1.00	405
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.681 using Equation (Exhibit 13-7)

V_{12} = 1773 pc/h

V_3 or V_{av34} 640 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2413	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	2008	Exhibit 13-8	7050	No
V_R	405	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1773	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 17.2 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.464 (Exhibit 13-12)

S_R= 54.3 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.0 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	82 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP Plus Reduced Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	340
Deceleration Lane Length L_D	
Freeway Volume, V_F	2114
Ramp Volume, V_R	309
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	2114	0.92	Level	10	0	0.952	1.00	2413
Ramp	309	0.92	Level	10	0	0.952	1.00	353
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.587 using Equation (Exhibit 13-6)

V_{12} = 1416 pc/h

V_3 or V_{av34} 997 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1416 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	2766	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1769	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 17.0 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.320 (Exibit 13-11)

S_R= 57.6 mph (Exhibit 13-11)

S_0= 63.2 mph (Exhibit 13-11)

S = 59.5 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	83 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP Plus Reduced Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	300
Deceleration Lane Length L_D	
Freeway Volume, V_F	3041
Ramp Volume, V_R	240
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3041	0.92	Level	10	0	0.952	1.00	3471
Ramp	240	0.92	Level	10	0	0.952	1.00	274
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 2034 pc/h

V_3 or V_{av34} 1437 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 2034 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3745	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2308	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 21.5 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.339 (Exibit 13-11)

S_R= 57.2 mph (Exhibit 13-11)

S_0= 61.6 mph (Exhibit 13-11)

S = 58.8 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	84 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP Plus Reduced Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 300	V_D = veh/h
	Freeway Volume, V_F: 3041	
	Ramp Volume, V_R: 389	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3041	0.92	Level	10	0	0.952	1.00	3471
Ramp	389	0.92	Level	10	0	0.952	1.00	444
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.653 using Equation (Exhibit 13-7)

V_{12} = 2420 pc/h

V_3 or V_{av34} 1051 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3471	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	3027	Exhibit 13-8	7050	No
V_R	444	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2420	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 22.4 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.468 (Exhibit 13-12)

S_R= 54.2 mph (Exhibit 13-12)

S_0= 71.1 mph (Exhibit 13-12)

S = 58.4 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	85 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP Plus Reduced Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 400	V_D = veh/h
	Freeway Volume, V_F: 2351	
	Ramp Volume, V_R: 388	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2351	0.92	Level	10	0	0.952	1.00	2683
Ramp	388	0.92	Level	10	0	0.952	1.00	443
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.673 using Equation (Exhibit 13-7)

V_{12} = 1950 pc/h

V_3 or V_{av34} 733 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2683	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	2240	Exhibit 13-8	7050	No
V_R	443	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1950	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 17.4 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.468 (Exhibit 13-12)

S_R= 54.2 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.0 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	86 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP Plus Reduced Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 300	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D	V_D = veh/h
	Freeway Volume, V_F: 2351	
	Ramp Volume, V_R: 345	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2351	0.92	Level	10	0	0.952	1.00	2683
Ramp	345	0.92	Level	10	0	0.952	1.00	394
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 1572 pc/h

V_3 or V_{av34} 1111 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1572 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3077	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1966	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 18.7 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.328 (Exibit 13-11)

S_R= 57.5 mph (Exhibit 13-11)

S_0= 62.8 mph (Exhibit 13-11)

S = 59.3 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP Plus Reduced Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	250
Deceleration Lane Length L_D	
Freeway Volume, V_F	3408
Ramp Volume, V_R	203
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3408	0.92	Level	10	0	0.952	1.00	3890
Ramp	203	0.92	Level	10	0	0.952	1.00	232
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.585 using Equation (Exhibit 13-6)

V_{12} = 2274 pc/h

V_3 or V_{av34} 1616 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 2274 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4122	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2506	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 23.3 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.351 (Exibit 13-11)

S_R= 56.9 mph (Exhibit 13-11)

S_0= 61.0 mph (Exhibit 13-11)

S = 58.4 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP Plus Reduced Proj Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 360	V_D = veh/h
	Freeway Volume, V_F: 3408	
	Ramp Volume, V_R: 705	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3408	0.92	Level	10	0	0.952	1.00	3890
Ramp	705	0.92	Level	10	0	0.952	1.00	805
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.626 using Equation (Exhibit 13-7)

V_{12} = 2735 pc/h

V_3 or V_{av34} 1155 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3890	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	3085	Exhibit 13-8	7050	No
V_R	805	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2735	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 24.5 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.500 (Exhibit 13-12)

S_R= 53.5 mph (Exhibit 13-12)

S_0= 70.7 mph (Exhibit 13-12)

S = 57.7 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	81 Eight Mile Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	3	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	250	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	3106	V_D =	veh/h
		Ramp Volume, V_R	311		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3106	0.92	Level	10	0	0.952	1.00	3545
Ramp	311	0.92	Level	10	0	0.952	1.00	355
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.655 using Equation (Exhibit 13-7)

V_{12} = 2445 pc/h

V_3 or V_{av34} 1100 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3545	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	3190	Exhibit 13-8	7050	No
V_R	355	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2445	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 23.0 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.460 (Exhibit 13-12)

S_R= 54.4 mph (Exhibit 13-12)

S_0= 70.9 mph (Exhibit 13-12)

S = 58.7 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	82 Eight Mile On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP With Bridge Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 340	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 3106	
	Ramp Volume, V_R: 443	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3106	0.92	Level	10	0	0.952	1.00	3545
Ramp	443	0.92	Level	10	0	0.952	1.00	506
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.587 using Equation (Exhibit 13-6)

V_{12} = 2081 pc/h

V_3 or V_{av34} 1464 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4051	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2587	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 23.3 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.349 (Exibit 13-11)

S_R= 57.0 mph (Exhibit 13-11)

S_0= 61.5 mph (Exhibit 13-11)

S = 58.5 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	83 Eight Mile On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP With Bridge Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp			Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N	3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N	1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	300	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D		V_D = veh/h
	Freeway Volume, V_F	1816	
	Ramp Volume, V_R	385	
	Freeway Free-Flow Speed, S_{FF}	65.0	
	Ramp Free-Flow Speed, S_{FR}	35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	1816	0.92	Level	10	0	0.952	1.00	2073
Ramp	385	0.92	Level	10	0	0.952	1.00	439
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 1215 pc/h

V_3 or V_{av34} 858 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1215 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	2512	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1654	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.3 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.320 (Exibit 13-11)

S_R= 57.6 mph (Exhibit 13-11)

S_0= 63.7 mph (Exhibit 13-11)

S = 59.6 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	84 Eight Mile Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP With Bridge Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	3	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	300	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	1816	V_D =	veh/h
		Ramp Volume, V_R	191		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	1816	0.92	Level	10	0	0.952	1.00	2073
Ramp	191	0.92	Level	10	0	0.952	1.00	218
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.698 using Equation (Exhibit 13-7)

V_{12} = 1513 pc/h

V_3 or V_{av34} 560 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2073	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	1855	Exhibit 13-8	7050	No
V_R	218	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1513	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 14.6 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.448 (Exhibit 13-12)

S_R= 54.7 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.4 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	85 Morada Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP With Bridge Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	3	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	400	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	3480	V_D =	veh/h
		Ramp Volume, V_R	301		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3480	0.92	Level	10	0	0.952	1.00	3972
Ramp	301	0.92	Level	10	0	0.952	1.00	344
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.645 using Equation (Exhibit 13-7)

V_{12} = 2684 pc/h

V_3 or V_{av34} 1288 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3972	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	3628	Exhibit 13-8	7050	No
V_R	344	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2684	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 23.7 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.459 (Exhibit 13-12)

S_R= 54.4 mph (Exhibit 13-12)

S_0= 70.2 mph (Exhibit 13-12)

S = 58.7 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	86 Morada On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP With Bridge Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 300	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 3480	
	Ramp Volume, V_R: 856	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3480	0.92	Level	10	0	0.952	1.00	3972
Ramp	856	0.92	Level	10	0	0.952	1.00	977
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 2327 pc/h

V_3 or V_{av34} 1645 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 2327 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4949	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3304	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 28.9 (pc/mi/ln)

LOS = D (Exhibit 13-2)

Speed Determination

M_S = 0.406 (Exibit 13-11)

S_R= 55.7 mph (Exhibit 13-11)

S_0= 60.9 mph (Exhibit 13-11)

S = 57.3 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP With Bridge Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 250	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 2037	
	Ramp Volume, V_R: 232	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2037	0.92	Level	10	0	0.952	1.00	2325
Ramp	232	0.92	Level	10	0	0.952	1.00	265
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.585 using Equation (Exhibit 13-6)

V_{12} = 1359 pc/h

V_3 or V_{av34} 966 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1359 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	2590	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1624	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.5 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.323 (Exibit 13-11)

S_R= 57.6 mph (Exhibit 13-11)

S_0= 63.3 mph (Exhibit 13-11)

S = 59.6 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	EPAP With Bridge Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 360	V_D = veh/h
	Freeway Volume, V_F: 2037	
	Ramp Volume, V_R: 331	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2037	0.92	Level	10	0	0.952	1.00	2325
Ramp	331	0.92	Level	10	0	0.952	1.00	378
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.684 using Equation (Exhibit 13-7)

V_{12} = 1711 pc/h

V_3 or V_{av34} 614 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2325	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	1947	Exhibit 13-8	7050	No
V_R	378	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1711	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 15.7 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.462 (Exhibit 13-12)

S_R= 54.4 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.0 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	81 Eight Mile Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP With Bridge Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 250	V_D = veh/h
	Freeway Volume, V_F: 2114	
	Ramp Volume, V_R: 361	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2114	0.92	Level	10	0	0.952	1.00	2413
Ramp	361	0.92	Level	10	0	0.952	1.00	412
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.681 using Equation (Exhibit 13-7)

V_{12} = 1774 pc/h

V_3 or V_{av34} 639 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2413	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	2001	Exhibit 13-8	7050	No
V_R	412	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1774	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 17.3 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.465 (Exhibit 13-12)

S_R= 54.3 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.0 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	82 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP With Bridge Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 340	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 2114	
	Ramp Volume, V_R: 370	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2114	0.92	Level	10	0	0.952	1.00	2413
Ramp	370	0.92	Level	10	0	0.952	1.00	422
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.587 using Equation (Exhibit 13-6)

V_{12} = 1416 pc/h

V_3 or V_{av34} 997 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1416 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	2835	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1838	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 17.5 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.322 (Exibit 13-11)

S_R= 57.6 mph (Exhibit 13-11)

S_0= 63.2 mph (Exhibit 13-11)

S = 59.5 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	83 Eight Mile On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP With Bridge Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 300	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 3043	
	Ramp Volume, V_R: 248	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3043	0.92	Level	10	0	0.952	1.00	3473
Ramp	248	0.92	Level	10	0	0.952	1.00	283
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 2035 pc/h

V_3 or V_{av34} 1438 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 2035 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3756	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2318	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 21.5 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.340 (Exibit 13-11)

S_R= 57.2 mph (Exhibit 13-11)

S_0= 61.6 mph (Exhibit 13-11)

S = 58.8 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	84 Eight Mile Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP With Bridge Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	300
Freeway Volume, V_F	3043
Ramp Volume, V_R	426
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3043	0.92	Level	10	0	0.952	1.00	3473
Ramp	426	0.92	Level	10	0	0.952	1.00	486
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.651 using Equation (Exhibit 13-7)

V_{12} = 2430 pc/h

V_3 or V_{av34} 1043 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3473	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	2987	Exhibit 13-8	7050	No
V_R	486	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2430	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 22.5 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.472 (Exhibit 13-12)

S_R= 54.1 mph (Exhibit 13-12)

S_0= 71.1 mph (Exhibit 13-12)

S = 58.3 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	85 Morada Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP With Bridge Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	3	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	400	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	2413	V_D =	veh/h
		Ramp Volume, V_R	388		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2413	0.92	Level	10	0	0.952	1.00	2754
Ramp	388	0.92	Level	10	0	0.952	1.00	443
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.671 using Equation (Exhibit 13-7)

V_{12} = 1993 pc/h

V_3 or V_{av34} 761 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2754	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	2311	Exhibit 13-8	7050	No
V_R	443	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1993	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$

D_R = 17.8 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.468 (Exhibit 13-12)

S_R= 54.2 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.1 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	86 Morada On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP With Bridge Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 300	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 2413	
	Ramp Volume, V_R: 338	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2413	0.92	Level	10	0	0.952	1.00	2754
Ramp	338	0.92	Level	10	0	0.952	1.00	386
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 1614 pc/h

V_3 or V_{av34} 1140 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1614 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3140	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2000	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 19.0 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.329 (Exibit 13-11)

S_R= 57.4 mph (Exhibit 13-11)

S_0= 62.7 mph (Exhibit 13-11)

S = 59.2 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP With Bridge Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 250	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 3448	
	Ramp Volume, V_R: 203	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3448	0.92	Level	10	0	0.952	1.00	3935
Ramp	203	0.92	Level	10	0	0.952	1.00	232
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.585 using Equation (Exhibit 13-6)

V_{12} = 2300 pc/h

V_3 or V_{av34} 1635 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 2300 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4167	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2532	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 23.6 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.353 (Exibit 13-11)

S_R= 56.9 mph (Exhibit 13-11)

S_0= 60.9 mph (Exhibit 13-11)

S = 58.4 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	June 2017	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	EPAP With Bridge Altern

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	3	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	360	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	3448	V_D =	veh/h
		Ramp Volume, V_R	699		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3448	0.92	Level	10	0	0.952	1.00	3935
Ramp	699	0.92	Level	10	0	0.952	1.00	798
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.625 using Equation (Exhibit 13-7)

V_{12} = 2758 pc/h

V_3 or V_{av34} 1177 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3935	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	3137	Exhibit 13-8	7050	No
V_R	798	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2758	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 24.7 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.500 (Exhibit 13-12)

S_R= 53.5 mph (Exhibit 13-12)

S_0= 70.6 mph (Exhibit 13-12)

S = 57.7 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	81 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Existing

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	3	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	250	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	2923	V_D =	veh/h
		Ramp Volume, V_R	251		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2923	0.92	Level	10	0	0.952	1.00	3336
Ramp	251	0.92	Level	10	0	0.952	1.00	286
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.663 using Equation (Exhibit 13-7)

V_{12} = 2310 pc/h

V_3 or V_{av34} 1026 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3336	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	3050	Exhibit 13-8	7050	No
V_R	286	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2310	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 21.9 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.454 (Exhibit 13-12)

S_R= 54.6 mph (Exhibit 13-12)

S_0= 71.2 mph (Exhibit 13-12)

S = 58.8 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	82 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Existing

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 340	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 2923	
	Ramp Volume, V_R: 293	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2923	0.92	Level	10	0	0.952	1.00	3336
Ramp	293	0.92	Level	10	0	0.952	1.00	334
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.587 using Equation (Exhibit 13-6)

V_{12} = 1958 pc/h

V_3 or V_{av34} 1378 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1958 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3670	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2292	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 21.1 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.336 (Exibit 13-11)

S_R= 57.3 mph (Exhibit 13-11)

S_0= 61.8 mph (Exhibit 13-11)

S = 58.9 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	83 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Existing

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	300
Deceleration Lane Length L_D	
Freeway Volume, V_F	1708
Ramp Volume, V_R	305
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	1708	0.92	Level	10	0	0.952	1.00	1949
Ramp	305	0.92	Level	10	0	0.952	1.00	348
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 1142 pc/h

V_3 or V_{av34} 807 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1142 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	2297	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1490	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 15.1 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.317 (Exibit 13-11)

S_R= 57.7 mph (Exhibit 13-11)

S_0= 63.9 mph (Exhibit 13-11)

S = 59.7 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	84 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Existing

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	3	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	300	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	1708	V_D =	veh/h
		Ramp Volume, V_R	122		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	1708	0.92	Level	10	0	0.952	1.00	1949
Ramp	122	0.92	Level	10	0	0.952	1.00	139
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.705 using Equation (Exhibit 13-7)

V_{12} = 1415 pc/h

V_3 or V_{av34} 534 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	1949	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	1810	Exhibit 13-8	7050	No
V_R	139	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1415	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 13.7 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.441 (Exhibit 13-12)

S_R= 54.9 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.6 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	85 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Existing

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 400	V_D = veh/h
	Freeway Volume, V_F: 2986	
	Ramp Volume, V_R: 251	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2986	0.92	Level	10	0	0.952	1.00	3408
Ramp	251	0.92	Level	10	0	0.952	1.00	286
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.662 using Equation (Exhibit 13-7)

V_{12} = 2352 pc/h

V_3 or V_{av34} 1056 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3408	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	3122	Exhibit 13-8	7050	No
V_R	286	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2352	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 20.9 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.454 (Exhibit 13-12)

S_R= 54.6 mph (Exhibit 13-12)

S_0= 71.1 mph (Exhibit 13-12)

S = 58.8 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	86 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Existing

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	300
Deceleration Lane Length L_D	
Freeway Volume, V_F	2986
Ramp Volume, V_R	683
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	2986	0.92	Level	10	0	0.952	1.00	3408
Ramp	683	0.92	Level	10	0	0.952	1.00	780
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 1997 pc/h

V_3 or V_{av34} 1411 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1997 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4188	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2777	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 24.9 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.363 (Exibit 13-11)

S_R= 56.7 mph (Exhibit 13-11)

S_0= 61.7 mph (Exhibit 13-11)

S = 58.3 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Existing

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	250
Deceleration Lane Length L_D	
Freeway Volume, V_F	1795
Ramp Volume, V_R	194
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	1795	0.92	Level	10	0	0.952	1.00	2049
Ramp	194	0.92	Level	10	0	0.952	1.00	221
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.585 using Equation (Exhibit 13-6)

V_{12} = 1198 pc/h

V_3 or V_{av34} 851 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1198 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	2270	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1419	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 14.9 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.320 (Exibit 13-11)

S_R= 57.6 mph (Exhibit 13-11)

S_0= 63.7 mph (Exhibit 13-11)

S = 59.8 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	AM Peak Hour	Analysis Year	Existing

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A:	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 360	V_D = veh/h
	Freeway Volume, V_F: 1795	
	Ramp Volume, V_R: 257	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	1795	0.92	Level	10	0	0.952	1.00	2049
Ramp	257	0.92	Level	10	0	0.952	1.00	293
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.695 using Equation (Exhibit 13-7)

V_{12} = 1514 pc/h

V_3 or V_{av34} 535 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2049	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	1756	Exhibit 13-8	7050	No
V_R	293	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1514	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 14.0 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.454 (Exhibit 13-12)

S_R= 54.5 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.1 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	81 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Existing

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	3	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	250	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	1990	V_D =	veh/h
		Ramp Volume, V_R	287		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	1990	0.92	Level	10	0	0.952	1.00	2271
Ramp	287	0.92	Level	10	0	0.952	1.00	328
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.688 using Equation (Exhibit 13-7)

V_{12} = 1665 pc/h

V_3 or V_{av34} 606 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2271	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	1943	Exhibit 13-8	7050	No
V_R	328	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1665	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 16.3 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.458 (Exhibit 13-12)

S_R= 54.5 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.1 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	82 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Existing

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 340	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 1990	
	Ramp Volume, V_R: 220	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	1990	0.92	Level	10	0	0.952	1.00	2271
Ramp	220	0.92	Level	10	0	0.952	1.00	251
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.587 using Equation (Exhibit 13-6)

V_{12} = 1333 pc/h

V_3 or V_{av34} 938 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1333 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	2522	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1584	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 15.6 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.316 (Exibit 13-11)

S_R= 57.7 mph (Exhibit 13-11)

S_0= 63.4 mph (Exhibit 13-11)

S = 59.7 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	83 Eight Mile On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Existing

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	300
Deceleration Lane Length L_D	
Freeway Volume, V_F	2861
Ramp Volume, V_R	194
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	2861	0.92	Level	10	0	0.952	1.00	3265
Ramp	194	0.92	Level	10	0	0.952	1.00	221
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 1913 pc/h

V_3 or V_{av34} 1352 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1913 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3486	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2134	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 20.1 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.333 (Exibit 13-11)

S_R= 57.3 mph (Exhibit 13-11)

S_0= 61.9 mph (Exhibit 13-11)

S = 59.0 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	84 Eight Mile Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Existing

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	3	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	1	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	300	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	2861	V_D =	veh/h
		Ramp Volume, V_R	164		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	35.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	2861	0.92	Level	10	0	0.952	1.00	3265
Ramp	164	0.92	Level	10	0	0.952	1.00	187
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.670 using Equation (Exhibit 13-7)

V_{12} = 2249 pc/h

V_3 or V_{av34} 1016 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3265	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	3078	Exhibit 13-8	7050	No
V_R	187	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2249	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 20.9 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.445 (Exhibit 13-12)

S_R= 54.8 mph (Exhibit 13-12)

S_0= 71.2 mph (Exhibit 13-12)

S = 59.0 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	85 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Existing

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A:	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 400	V_D = veh/h
	Freeway Volume, V_F: 2033	
	Ramp Volume, V_R: 323	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2033	0.92	Level	10	0	0.952	1.00	2320
Ramp	323	0.92	Level	10	0	0.952	1.00	369
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.685 using Equation (Exhibit 13-7)

V_{12} = 1705 pc/h

V_3 or V_{av34} 615 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2320	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	1951	Exhibit 13-8	7050	No
V_R	369	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1705	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 15.3 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.461 (Exhibit 13-12)

S_R= 54.4 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 58.0 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 SB
Agency or Company	KD Anderson & Associates	Junction	86 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Existing

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	300
Deceleration Lane Length L_D	
Freeway Volume, V_F	2033
Ramp Volume, V_R	267
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2033	0.92	Level	10	0	0.952	1.00	2320
Ramp	267	0.92	Level	10	0	0.952	1.00	305
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.586 using Equation (Exhibit 13-6)

V_{12} = 1359 pc/h

V_3 or V_{av34} 961 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1359 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	2625	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1664	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.4 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.321 (Exibit 13-11)

S_R= 57.6 mph (Exhibit 13-11)

S_0= 63.3 mph (Exhibit 13-11)

S = 59.6 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	87 Morada On-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Existing

Project Description Tra Vigne

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	3
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	250
Deceleration Lane Length L_D	
Freeway Volume, V_F	3007
Ramp Volume, V_R	169
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3007	0.92	Level	10	0	0.952	1.00	3432
Ramp	169	0.92	Level	10	0	0.952	1.00	193
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.585 using Equation (Exhibit 13-6)

V_{12} = 2006 pc/h

V_3 or V_{av34} 1426 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes,V_{12a} = 2006 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3625	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2199	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 21.0 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.339 (Exibit 13-11)

S_R= 57.2 mph (Exhibit 13-11)

S_0= 61.7 mph (Exhibit 13-11)

S = 58.9 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Shijo	Freeway/Dir of Travel	SR 99 NB
Agency or Company	KD Anderson & Associates	Junction	88 Morada Off-Ramp
Date Performed	April 2016	Jurisdiction	Stockton
Analysis Time Period	PM Peak Hour	Analysis Year	Existing

Project Description Tra Vigne

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 3	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D: 360	V_D = veh/h
	Freeway Volume, V_F: 3007	
	Ramp Volume, V_R: 556	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 35.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3007	0.92	Level	10	0	0.952	1.00	3432
Ramp	556	0.92	Level	10	0	0.952	1.00	635
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.645 using Equation (Exhibit 13-7)

V_{12} = 2439 pc/h

V_3 or V_{av34} 993 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3432	Exhibit 13-8	7050	No
$V_{FO} = V_F - V_R$	2797	Exhibit 13-8	7050	No
V_R	635	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2439	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 22.0 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.485 (Exhibit 13-12)

S_R= 53.8 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 57.9 mph (Exhibit 13-13)

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